

PUBLIC REVIEW DRAFT

**CHILDREN'S HOSPITAL AND  
RESEARCH CENTER OAKLAND  
CAMPUS MASTER PLAN PROJECT  
DRAFT ENVIRONMENTAL IMPACT REPORT**

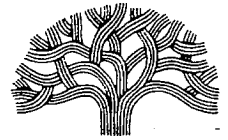
STATE CLEARINGHOUSE NO. 2013072058



LSA

August 2014

# CITY OF OAKLAND



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Bureau of Planning  
Planning & Zoning Division

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## COMBINED NOTICE OF AVAILABILITY AND RELEASE OF A DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR) AND NOTICE OF PUBLIC HEARINGS ON THE DEIR FOR THE CHILDREN'S HOSPITAL & RESEARCH CENTER OAKLAND CAMPUS MASTER PLAN PROJECT

**TO:** All Interested Parties

**PROJECT NAME:** Children's Hospital & Research Center Oakland Campus Master Plan Project

**PROJECT LOCATION:** 747 52<sup>nd</sup> Street, Oakland

**PROJECT SPONSOR:** Children's Hospital & Research Center Oakland

**CASE FILE NO:** ER12-0013; CEQA State Clearinghouse No. 2013072058

**REVIEW PERIOD:** August 7, 2014 through September 22, 2014

**PROJECT LOCATION:** The project site consists of the 11-acre Children's Hospital & Research Center Oakland (CHRCO) main campus, located at 747 52<sup>nd</sup> Street, in the northern portion of the City of Oakland, Alameda County. The CHRCO main campus consists of 31 parcels. The project site also includes an area of Caltrans right-of-way, which the hospital proposes to acquire and improve in connection with the project, and two parcels not owned by the hospital (and for which the hospital has no current plans for acquisition). The CHRCO campus is an existing hospital facility that contains a complex of medical buildings on a triangular site. A total of 692,416 square feet of total building area is currently located within the campus and a total of 1,107 on- and off-campus parking spaces are provided. The CHRCO-owned parking lot at 4701 Martin Luther King Jr. Way, is on the Cortese list due to a former leaking underground storage tank; proposed remedial activities at this site have been completed and case closure has been requested.

**PROJECT DESCRIPTION:** The main purpose of the proposed project is to create new seismically compliant acute care facilities that meet the seismic safety requirements of Senate Bill (SB) 1953. The proposed project would demolish a total of 66,582 square feet of existing uses on the campus and construct a total of 399,200 square feet of new building area, for a total of 332,618 square feet of net new building area. Upon project completion, total building area at the CHRCO campus would be 1,025,034 square feet. In addition, a total of 284 net new parking spaces would be located on the campus at project completion, for a total of 1,391 parking spaces. The proposed project would be developed in two phases, as described below.

Phase 1 would include the demolition of one residential building, minor rear yard additions on two residential buildings, and construction of the 6-story Outpatient Center Building 2 (OPC2). Circulation improvements would also occur. Phase 1 would also include internal renovations in the OPC1 Building, the 1982 Tower, the D&T Building, and the Cardiac Catheterization Lab building, as well as an addition to the Central Utility Plant to provide utilities to the renovated areas. As part of Phase 1, approximately 1,541 square feet of use would be demolished, 90,200 square feet would be constructed, and 95,550 square feet would be renovated.

Phase 2 would include the demolition of the following structures: one residential building and one modular office building, the rear portions (façades would be maintained) of three residential buildings, the B/C Wing, Bruce Lyon Memorial Research Center, HemOnc Administrative Building, the helistop structure and trailers. Phase 2 would include construction of a Family Residence Building, Clinical Support Building, Link Building with a helistop on the roof, Acute Care Patient Pavilion, expansion of the Central Utility Plant, and a Parking Structure. Phase 2 would also include interior renovations to the 1982 Tower. In addition, site and circulation improvements would be constructed. Phase 2 would include the acquisition and improvement of a portion of the SR 24 right-of-way adjacent to the hospital on the east side and currently owned by Caltrans. Phase 2 would include an increase of 40 hospital beds and an increase of 286 parking spaces on the CHRCO campus. As part



of Phase 2, approximately 65,041 square feet of use would be demolished, approximately 309,000 square feet would be constructed, and approximately 42,342 square feet would be renovated.

The project includes a number of permits/approvals from the City, including but not limited to: General Plan Amendment, Rezoning, a Planned Unit Development (PUD) Permit, Conditional Use Permits (CUPs), and a Vesting Tentative Map and Final Map(s).

**ENVIRONMENTAL REVIEW:** The City issued a Notice of Preparation (NOP) of a DEIR on July 26, 2013. A DEIR now has been prepared for the Project, under the requirements of the California Environmental Quality Act (CEQA), pursuant to Public Resources Code Section 21000 et. seq.

All significant impacts identified in the DEIR would be reduced to a less-than-significant level if Standard Conditions of Approval and mitigation measures noted in the DEIR are implemented.

**Starting on Thursday, August 7, 2014**, copies of the DEIR are available for review or distribution to interested parties at no charge at the City of Oakland Bureau of Planning, 250 Frank H. Ogawa Plaza, Suite 3315, Oakland, CA 94612, Monday through Friday, 8:30 a.m. to 5:00 p.m. The DEIR may also be reviewed at the following website: <http://www2.oaklandnet.com/Government/o/PBN/OurServices/Application/DOWD009157>. This is item eight (8).

**PUBLIC HEARINGS ON DEIR:**

1. The Oakland Landmarks Preservation Advisory Board will conduct a public hearing on the historic resource aspect of the DEIR on **September 8, 2014, at 6:00 p.m.** in Hearing Room 1, City Hall, 1 Frank H. Ogawa Plaza;
2. The Oakland City Planning Commission will conduct a public hearing on the DEIR on **September 17, 2014, at 6:00 p.m.** in Hearing Room 1, City Hall, 1 Frank H. Ogawa Plaza; and
3. The Oakland Bicycle and Pedestrian Advisory Committee will conduct a public hearing on the bicycle and pedestrian aspects of the DEIR on **September 18, 2014, at 5:30 p.m.** in Sgt. Daniel Sakai Hearing Room (Hearing Room 4), City Hall, 1 Frank H. Ogawa Plaza.

The City of Oakland is hereby releasing this DEIR, finding it to be accurate and complete and ready for public review. Members of the public are invited to comment on the DEIR. There is no fee for commenting, and all comments received will be considered by the City prior to finalizing the EIR and making a decision on the project. In light of the EIR's purpose to provide useful and accurate information about such factors, comments on the DEIR should focus on the sufficiency of the DEIR in discussing possible impacts on the physical environment, ways in which potential adverse effects might be minimized, and alternatives to the project. Comments may be made at the public hearing described above or in writing. Please address all written comments to: Heather Klein or Robert Merkamp, City of Oakland, Bureau of Planning, 250 Frank H. Ogawa Plaza, Suite 3315, Oakland, CA 94612; (510) 238-3658 (fax); or emailed to [hklein@oaklandnet.com](mailto:hklein@oaklandnet.com) or [rmerkamp@oaklandnet.com](mailto:rmerkamp@oaklandnet.com). Comments should be received no later than **4:00 p.m. on September 22, 2014**. Please reference case number ER12-0013 in all correspondence.

If you challenge the EIR or project in court, you may be limited to raising only those issues raised at the Planning Commission public hearing described above, or in written correspondence received by the Bureau of Planning on or prior to 4:00 p.m. on **September 22, 2014**.

After all comments are received, a Response to Comments/Final EIR will be prepared and the Planning Commission will consider certification of the Final EIR and render a decision on the project at a meeting date to be scheduled. For further information, please contact Heather Klein at (510) 238-3659 or at [hklein@oaklandnet.com](mailto:hklein@oaklandnet.com) or Robert Merkamp at (510) 238-6283 or at [rmerkamp@oaklandnet.com](mailto:rmerkamp@oaklandnet.com).



Darin Ranelletti  
Deputy Director, Bureau of Planning

Date of Notice: **August 4, 2014**  
File Number ER12-0013

PUBLIC REVIEW DRAFT

**CHILDREN'S HOSPITAL AND  
RESEARCH CENTER OAKLAND  
CAMPUS MASTER PLAN PROJECT  
DRAFT ENVIRONMENTAL IMPACT REPORT**

STATE CLEARINGHOUSE NO. 2013072058

Submitted to:

City of Oakland  
Bureau of Planning  
250 Frank H. Ogawa Plaza  
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LSA

August 2014

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## GLOSSARY

|                          |   |
|--------------------------|---|
| $\mu\text{g}/\text{m}^3$ | micrograms per cubic meter  |
| 82 Tower                 | 1982 Patient Tower  |
| A/B Wing                 | Baby Hospital   |
| AB                       | Assembly Bill   |
| ABAG                     | Association of Bay Area Governments   |
| AC Transit               | Alameda-Contra Costa Transit District   |
| ACCMA                    | Alameda County Congestion Management Analysis                                     |
| ACCWP                    | Alameda Countywide Clean Water Program  |
| ACDEH                    | Alameda County Department of Environmental Health                                 |
| ACFD                     | Alameda County Fire Department  |
| APS                      | Alternative Planning Strategy   |
| ARB                      | California Air Resources Board  |
| AST                      | above-ground storage tank   |
| BAAQMD                   | Bay Area Air Quality Management District  |
| BART                     | Bay Area Rapid Transit  |
| BAT                      | Best Available Technology, for treatment of toxic and non-conventional pollutants |
| BCDC                     | San Francisco Bay Conservation and Development Commission                         |
| BCT                      | Best Conventional Technology, for treatment of conventional pollutants            |
| BMP                      | Bicycle Master Plan   |
| BMT                      | Bone Marrow Transplant  |
| CA-LEEP                  | CA-Leadership in Energy Efficiency Program  |
| CAA                      | Federal Clean Air Act   |
| CAAQS                    | California ambient air quality standards  |
| Cal/EPA                  | California Environmental Protection Agency  |
| CalEEMod                 | California Emissions Estimator Model  |
| Caltrans                 | California Department of Transportation   |
| Cal/OSHA                 | Occupational Safety and Health Administration, State of California                |
| CAP                      | Clean Air Plan  |
| CAPCOA                   | California Air Pollution Control Officers Association                             |
| CAT                      | Climate Action Team   |

|                   |  |
|-------------------|--|
| CBC               | California Building Code   |
| CCAA              | California Clean Air Act   |
| CCP               | Center for Child Protection  |
| CCR               | California Code of Regulations   |
| CDHS              | California Department of Health Services   |
| CDMG              | California Division of Mines and Geology   |
| CEQA              | California Environmental Quality Act   |
| CERCLA            | Comprehensive Environmental Response, Compensation, and Liability Act            |
| CH <sub>4</sub>   | methane  |
| CHRCO             | Children's Hospital & Research Center Oakland                                    |
| CHORI             | Children's Hospital Oakland Research Institute                                   |
| CIP               | City of Oakland Capital Improvement Program 2013/15                              |
| CIWMB             | California Integrated Waste Management Board                                     |
| City              | City of Oakland  |
| CMWMP             | California Medical Waste Management Program                                      |
| CN-3/4            | Neighborhood Commercial (Zone)   |
| CNEL              | Community Noise Equivalent Level   |
| CO                | carbon monoxide  |
| CO <sub>2</sub>   | carbon dioxide   |
| CO <sub>2</sub> e | carbon dioxide equivalent  |
| Corps             | U.S. Army Corps of Engineers   |
| CSPD              | Central Sterile Processing Department  |
| CUP               | Conditional Use Permit   |
| CUPA              | Certified Unified Program Agency   |
| CVC               | Center for Vulnerable Children   |
| CWA               | Clean Water Act  |
| CYES              | Community Youth Energy Services  |
| D&T               | Ford Diagnostic and Treatment Center   |
| dB                | decibel  |
| dBA               | A-weighted decibel   |
| dbh               | Diameter at breast height (4.5 feet above the ground surface surrounding a tree) |

|                         |  |
|-------------------------|--|
| Differential compaction | A phenomenon in which non-saturated, cohesionless soil is made more dense by earthquake vibrations, causing differential settlement.   |
| DIR                     | California Department of Industrial Relations  |
| DSOD                    | Division of Safety of Dams, California Department of Water Resources   |
| DOSH                    | Division of Occupational Safety and Health   |
| DSL                     | Digital Subscriber Line  |
| DTSC                    | California Department of Toxic Substances Control  |
| DWR                     | Department of Water Resources  |
| EBMUD                   | East Bay Municipal Utility District  |
| ECAP                    | Oakland Energy and Climate Action Plan   |
| ECG/EKG                 | Electrocardiogram  |
| ECHO                    | Echocardiogram   |
| EDMS                    | Emissions and Dispersion Modeling System   |
| EEG                     | Electroencephalogram   |
| EIR                     | Environmental Impact Report  |
| EMFAC                   | California Air Resources Board Emission Factors model  |
| EPA                     | U.S. Environmental Protection Agency   |
| EQ                      | Medical Equipment  |
| ER                      | emergency room   |
| ESA                     | Environmental Site Assessment, a professional investigation that characterizes existing conditions related to hazardous materials and hazardous waste contamination at a site. |
| EVS                     | Environmental Services   |
| FAA                     | Federal Aviation Administration  |
| FAR                     | floor area ratio   |
| FEMA                    | Federal Emergency Management Agency  |
| FETAL ECHO              | Fetal Echocardiography   |
| FHWA                    | Federal Highway Administration   |
| FICON                   | Federal Interagency Committee on Noise   |
| FIRM                    | Flood Insurance Rate Map   |
| FTA                     | Federal Transit Administration   |
| FTE                     | Full-time-equivalent employees; refers to the number of employees working the equivalent of 40-hour work weeks.  |

|   |   |
|---|---|
| GAC                                       | General Acute Care  |
| GHG                                       | greenhouse gases, the gases primarily responsible for global climate change   |
| gpd                                       | gallons per day   |
| gpm                                       | gallons per minute  |
| GWP                                       | Global Warming Potential  |
| HABS/HAER                                 | Historic American Building Survey/Historic American Engineering Record  |
| HEM/ONC                                   | Hematology/Oncology Administrative Offices; Bruce Lyon Addition   |
| HFC                                       | hydrofluorocarbon   |
| HMBP                                      | Hazardous Materials Business Plan   |
| HPE                                       | Historic Preservation Element   |
| HRA                                       | Health Risk Assessment  |
| HUD                                       | U.S. Department of Housing and Urban Development  |
| Hz  | Frequency   |
| ICC                                       | International Code Council  |
| ICLEI                                     | International Council for Local Environmental Initiatives   |
| INM                                       | Integrated Noise Model  |
| IPCC                                      | Intergovernmental Panel on Climate Change   |
| ISP                                       | Internet Service Provider   |
| IWMP                                      | Integrated Waste Management Plan  |
| Lateral spreading                         | The phenomenon in which surface soil is displaced along a zone that has formed within an underlying liquefied layer.  |
| $L_{01}$ , $L_{10}$ , $L_{50}$ , $L_{90}$ | The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.  |
| $L_{dn}$                                  | Day/Night average noise level   |
| LEED                                      | Leadership in Energy and Environmental Design   |
| $L_{eq}$                                  | Equivalent Continuous Noise Level   |
| LID                                       | Low Impact Development, a stormwater management approach that promotes the use of ecological and landscape-based systems that mimic pre-development drainage patterns and hydrologic processes by increasing retention, detention, infiltration, and treatment of stormwater at its source. |
| Liquefaction                              | The transformation of soil from a solid to a liquefied state during which saturated soil temporarily loses strength resulting from the buildup of excess pore water pressure, which may occur during earthquakes.   |
| $L_{max}/L_{min}$                         | Maximum and minimum A-weighted sound levels measured on a sound level meter   |



|                      |  |
|----------------------|--|
| LOS                  | level of service   |
| LPAB                 | Oakland Landmarks Preservation Advisory Board                          |
| LTS                  | Less than Significant (Impact)   |
| LUST                 | leaking underground storage tank                                       |
| LUTE                 | Land Use and Transportation Element                                    |
| mg/m <sup>3</sup>    | milligrams per cubic meter   |
| mgd                  | million gallons a day  |
| MMTCO <sub>2</sub> E | million metric tons of CO <sub>2</sub> e                               |
| MPLS                 | Multi-Protocol Label Switching   |
| MPO                  | Metropolitan Planning Organization                                     |
| MRI                  | Magnetic Resonance Imaging   |
| MRP                  | Municipal Regional Permit  |
| MRZ-4                | Mineral Resource Zone 4  |
| MTC                  | Metropolitan Transportation Commission                                 |
| M <sub>w</sub>       | moment magnitude   |
| MWWTP                | Main Waste Water Treatment Plant                                       |
| N <sub>2</sub> O     | nitrous oxide  |
| NAVD                 | North American Vertical Datum  |
| NEHRP                | National Earthquake Hazards Reduction Program                          |
| NEURO                | Neurology  |
| NEURO PSYCH          | Neuropsychology  |
| NFIP                 | National Flood Insurance Program                                       |
| NHTSA                | National Highway Traffic Safety Administration                         |
| NICU                 | Neonatal Intensive Care Unit   |
| NIST                 | National Institute of Standards and Technology, Department of Commerce |
| N <sub>2</sub> O     | nitrous oxide  |
| NO                   | nitric oxide   |
| NO <sub>2</sub>      | nitrogen dioxide   |
| NOI                  | Notice of Intent   |
| NOP                  | Notice of Preparation  |
| NO <sub>x</sub>      | nitrogen oxides  |
| NP                   | Nurse Practitioner   |
| NPDES                | National Pollutant Discharge Elimination System                        |

---

|                         |   |
|-------------------------|---|
| NSF                     | National Science Foundation   |
| NWIC                    | Northwest Information Center  |
| O <sub>3</sub>          | ozone   |
| OCHS                    | Oakland Cultural Heritage Survey  |
| OEHHA                   | Office of Environmental Health and Hazard                               |
| OFSA                    | Oakland Fire Services Agency  |
| OPC1                    | Outpatient Center Building 1  |
| OPC2                    | Outpatient Center Building 2  |
| OPR                     | State of California Governor's Office of Planning and Research          |
| ORTHO                   | Orthopedics   |
| OSCAR                   | Open Space, Conservation and Recreation Element                         |
| OSHA                    | Occupational Safety and Health Administration, U.S. Department of Labor |
| OSHPD                   | Office of Statewide Health Planning and Development                     |
| OT                      | Occupational Therapy  |
| PACU                    | Post Anesthesia Care Unit   |
| Pb                      | lead  |
| PBT                     | Persistent Bioaccumulative and Toxic                                    |
| PBX                     | Private Branch Exchange   |
| PCB                     | polychlorinated biphenyls   |
| PFC                     | perfluorocarbon   |
| PG&E                    | Pacific Gas & Electric Company  |
| PGA                     | peak horizontal ground acceleration                                     |
| PICU                    | Pediatric Intensive Case  |
| PM                      | particulate matter  |
| ppb                     | parts per billion   |
| ppm                     | parts per million   |
| PPV                     | peak particle velocity  |
| PT                      | Physical Therapy  |
| PUD                     | Planned Unit Development  |
| RCRA                    | Resource Conservation and Recovery Act                                  |
| Regional<br>Water Board | San Francisco Bay Regional Water Quality Control Board                  |
| REL                     | Reference Exposure Levels   |

|                 |  |
|-----------------|--|
| RHB             | Radiological Health Branch   |
| RM-2            | Mixed Housing Type Residential (Zone)  |
| ROG             | reactive organic gases   |
| RTP             | Regional Transportation Plan   |
| RU-1/4/5        | Urban Residential (Zone)   |
| S               | Significant (Impact)   |
| S-1             | Medical Center (Zone)  |
| SARA            | Superfund Amendments and Reauthorization Acts                                      |
| SB              | Senate Bill  |
| SCA             | City of Oakland Uniformly Applied Development Standards and Conditions of Approval |
| SCS             | Sustainable Community Strategies   |
| SDI             | Oakland Sustainability Community Development Initiative                            |
| SEL             | Sound Exposure Level   |
| SF <sub>6</sub> | Sulfur hexafluoride  |
| SFHA            | Special Flood Hazard Area  |
| SHMA            | California Seismic Hazards Mapping Act   |
| SO <sub>2</sub> | sulfur dioxide   |
| SR              | State Route  |
| SU              | Significant and Unavoidable (Impact)   |
| SURG            | Surgery  |
| SWPPP           | Storm Water Pollution Prevention Plan  |
| SWRCB           | State Water Resources Control Board  |
| TAC             | toxic air contaminants   |
| TAZ             | Traffic analysis zone  |
| TDML            | Total daily maximum loads  |
| TIA             | Traffic Impact Analysis  |
| TIP             | Transportation Improvement Program   |
| TPH             | total petroleum hydrocarbons   |
| UCMP            | University of California Museum of Paleontology                                    |
| UNFCCC          | United Nations Framework Convention on Climate Change                              |
| USGS            | United States Geological Survey  |
| UST             | underground storage tank   |

|      |                             |
|------|-----------------------------|
| UWMP | Urban Water Management Plan |
| VOC  | volatile organic compound   |
| WSA  | Water Supply Assessment     |

## **I. INTRODUCTION**

### **A. PURPOSE OF THE EIR**

In compliance with the California Environmental Quality Act (CEQA), this report describes the potential environmental consequences of the proposed Children's Hospital & Research Center Oakland (CHRCO) Campus Master Plan Project (project). This Environmental Impact Report (EIR) is designed to fully inform City decision-makers, responsible agencies, and the general public of the proposed project and the potential physical consequences of project approval. This EIR also examines alternatives to the project and identifies standard conditions of approval and mitigation measures to reduce or avoid potentially significant physical impacts.

The project sponsor is the Children's Hospital & Research Center Oakland. The City of Oakland (City) is the lead agency for environmental review of the proposed project. This EIR will be used by the City, responsible agencies, and the public in their review of the proposed project and associated approvals, including those described in Chapter III, Project Description.

### **B. PROPOSED PROJECT**

The proposed project evaluated in this EIR is the development of new and replacement facilities within the existing 11-acre CHRCO campus, located at 747 52<sup>nd</sup> Street, in the northern portion of the City of Oakland, Alameda County. The CHRCO campus consists of 31 parcels. The project site also includes an area of California Department of Transportation (Caltrans) right-of-way, which the hospital proposes to acquire and improve in connection with the project, and two parcels not owned by the hospital (and for which the hospital has no current plans for acquisition).

The CHRCO campus is an existing hospital facility that contains a complex of medical buildings on a triangular site. Buildings and structures in the northern area of the site (generally bounded by 53<sup>rd</sup> Street on the north, 52<sup>nd</sup> Street on the south, State Route 24 [SR 24] on the east, and Martin Luther King Jr. Way on the west) include the 5-story Outpatient Center Building 1 (OPC1), 5-story parking garage structure, several CHRCO-owned residential buildings, and 2 private residences. Buildings and structures in the southern area of the site (generally bounded on three sides by 52<sup>nd</sup> Street on the north, SR 24 on the east, and Martin Luther King Jr. Way on the west) comprise the main hospital facilities and include seven two- to five-story buildings or building additions, which include the 1982 Patient Tower (1982 Tower), Ford Diagnostic and Treatment Center (D&T Building) and Cardiac Catheterization Lab, B/C Wing, A/B Wing, Cafeteria, the Western Addition, and the Central Utility Plant. Buildings and structures located in the southern area of the CHRCO campus include the 36-foot-tall helistop structure, 2-story Bruce Lyon Memorial Research Laboratory Building, the Bruce Lyon addition (Hem/Onc administrative offices) and five temporary trailers that house office and administrative uses. A total of 692,416 square feet of total building area is currently located within the campus and a total of 1,107 on- and off-campus parking spaces are provided.

The main purpose of the proposed project is to create new seismically compliant acute care facilities that meet the seismic safety requirements of Senate Bill (SB) 1953. Other project goals include renovating existing structures, constructing new and replacement hospital facilities and associated infrastructure, and redesigning the campus' access points and internal street layout to improve site access, intermodal circulation, and pedestrian safety within the CHRCO campus and adjacent City streets. The proposed project would demolish a total of 66,582 square feet of existing uses on the campus and construct a total of 399,200 square feet of new building area, for a total of 332,618 square feet of net new building area. Upon project completion, total building area at the CHRCO campus would be 1,025,034 square feet. In addition, a total of 284 net new parking spaces would be located on the campus at project completion, for a total of 1,391 parking spaces. The proposed project would be developed in two phases, as described below.

Phase 1 would include the demolition of one residential building (currently owned by the hospital) to accommodate the construction of the 6-story Outpatient Center Building 2 (OPC2). Vehicular access into and out of the existing parking garage for the public and for hospital employees would be moved from 52<sup>nd</sup> Street to Martin Luther King Jr. Way with outbound and emergency access to 52<sup>nd</sup> Street. Phase 1 would include the demolition of minor rear yard additions on two residential buildings (currently owned by the hospital) to accommodate a new driveway to an existing maintenance area adjacent to the existing parking structure and OPC1. Phase 1 would also include internal renovations in OPC1, the 1982 Tower, the D&T Building, and the Cardiac Catheterization Lab Building, as well as an addition to the Central Utility Plant to provide utilities to the renovated areas. Phase 1 would include the temporary displacement of approximately 30 on-site hospital beds during construction (as a result of interior renovations). Phase 1 would also include the construction of 15 new parking spaces at the new Emergency Department area at the ground floor of the new OPC2 and the removal of 17 parking spaces within the existing parking garage to accommodate the relocation of the parking garage entrance (a net loss of 2 parking spaces). As part of Phase 1, approximately 1,541 square feet of use would be demolished, 90,200 square feet would be constructed, and approximately 95,550 square feet would be renovated.

Phase 2 would include the demolition of the following structures: one residential building and one modular office building south of 53<sup>rd</sup> Street (currently owned by the hospital), the rear portions (façades would be maintained) of three residential buildings south of 53<sup>rd</sup> Street (owned by the hospital), the B/C Wing, Bruce Lyon Memorial Research Center, HemOnc Administrative Building, the helistop structure and trailers. Phase 2 would include construction of a Family Residence Building, Clinical Support Building, Link Building with a helistop on the roof, Acute Care Patient Pavilion, expansion of the Central Utility Plant, and a Parking Structure. New buildings constructed as part of Phase 2 would be two- to five- stories. Phase 2 would also include interior renovations to the 1982 Tower. In addition, site and circulation improvements would be constructed. The PG&E underground duct bank that extends east-west across the campus would be rerouted around the southern tip of the campus. Phase 2 would include the acquisition and improvement of a portion of the SR 24 right-of-way adjacent to the hospital on the east side and currently owned by Caltrans. Phase 2 would include an increase of 40 main campus hospital beds (for a total of 210 beds from an existing baseline of 170 main campus beds) and a net increase of 286 parking spaces on the CHRCO campus. As part of Phase 2, approximately 65,041 square feet of use would be demolished, approximately 309,000 square feet would be constructed, and approximately 42,342 square feet would be renovated.

The project sponsor is requesting a General Plan Amendment to redesignate the northeastern corner of the site from Mixed Housing Type Residential to Institutional, and a rezoning of this area from Mixed Housing Type Residential (RM-2) to Medical Center (S-1) to be consistent with the type of use that currently exists on the site. In addition, a Planned Unit Development (PUD) Permit, Conditional Use Permits (CUPs), a Vesting Tentative Map and Final Map(s), and other entitlements would be required for the project. Refer to Chapter III, Project Description for a complete description of the proposed project and requested permits and approvals.

## C. EIR SCOPE

The City of Oakland circulated a Notice of Preparation (NOP), notifying responsible agencies and interested parties that an EIR would be prepared for the project and indicating the environmental topics to be addressed in this EIR. The NOP was published on July 26, 2013 (SCH# 2013072058). The NOP was mailed to public agencies, organizations, and individuals likely to be interested in the potential impacts of the project and a copy of the NOP was published on the City's website. Comments on the NOP were received by the City and considered during preparation of the EIR. Public scoping meetings were held before the Oakland Landmarks Preservation Advisory Board (LPAB) on August 12, 2013; before the Oakland Bicycle and Pedestrian Advisory Committee on August 15, 2013; and before the Oakland Planning Commission on August 28, 2013. The NOP, comments received at each of the public scoping meetings, and copies of each comment letter received are provided in Appendix A of this EIR.

The project described in the NOP included the redevelopment of the CHRCO campus as well as the potential redevelopment of the gymnasium building within the 6.5-acre Children's Hospital Oakland Research Institute (CHORI) campus, located at 5700 Martin Luther King Jr. Way. During the scoping process, the project sponsor held numerous public meetings and met with community members to gather specific comments on the proposed project itself. After the close of the NOP comment period, the project sponsor decided to withdraw redevelopment at the CHORI gymnasium from the proposal and to revise certain aspects of the proposed development program within the CHRCO campus. These changes are, in part, intended to address community concerns and reflect additional refinements to the project design. In addition, the NOP included the 160 parking spaces leased by CHRCO in the lot at 51<sup>st</sup> and Clarke Streets as part of the proposed Master Plan project; however, those parking spaces serve the Claremont Clinics and should not have been associated with the main campus. Changes to the proposed project that have occurred since publication of the NOP are listed in **Table I-1**, below. The project described in Chapter III, Project Description and evaluated in this EIR reflects these changes.

As a result of an evaluation of the potential environmental impacts of the project, consultation with City staff and other agencies, and review of comments received as part of the scoping process, the following environmental topics are addressed in detail as separate sections in Chapter IV of this EIR:

- Land Use and Planning
- Aesthetics and Shadow
- Cultural and Historic Resources
- Transportation and Circulation
- Air Quality



- Greenhouse Gas Emissions
- Noise
- Geology, Seismicity and Soils
- Hydrology and Water Quality
- Hazards and Hazardous Materials
- Utilities

**Table I-1: Changes to the Project Since Publication of the NOP**

| Issues   | Project as Originally Proposed<br>(April 2013)  | Revised Project<br>(November 2013)  |
|--|---|---|
| <ul style="list-style-type: none"> <li>• Hospital encroachment into the neighborhood and the 55<sup>th</sup> Dover Residential District ASI</li> <li>• Demolition of some residential structures between 52<sup>nd</sup> and 53<sup>rd</sup> Street that maintain a visual buffer between the neighborhood and the hospital</li> </ul> | <ul style="list-style-type: none"> <li>• Demolition of 10 residential structures</li> </ul>   | <ul style="list-style-type: none"> <li>• See changes below with the provision of additional landscaping</li> </ul>  |
|  | <ul style="list-style-type: none"> <li>• Construction of access driveway to existing parking garage from Dover Street with additional service access to OPC1 off this driveway</li> </ul> | <ul style="list-style-type: none"> <li>• Demolition of the rear additions of two residential structures to construct an access driveway to an existing maintenance area adjacent to the existing parking structure and OPC1 from Dover Street. Access to the existing parking garage moved to Martin Luther King Jr. Way</li> </ul> |
|  | <ul style="list-style-type: none"> <li>• Construction of Family Residence Building</li> </ul>   | <ul style="list-style-type: none"> <li>• Retain front façades, but demolish the rear façades of three residential structures. Construct Family Residence Building behind, but connected to, the front façades</li> </ul>  |
|  | <ul style="list-style-type: none"> <li>• Construction of Clinical Support Services building</li> </ul>  | <ul style="list-style-type: none"> <li>• Demolition of the portable structure and relocation of two residential structures next to the Family Residence Building. Construction of the Clinical Support Services building in place of the relocated residential structures</li> </ul>  |
| Helicopter Access and Noise  | <ul style="list-style-type: none"> <li>• Construction of a temporary helistop on the proposed OPC2</li> </ul>   | <ul style="list-style-type: none"> <li>• Temporary helistop on the OPC2 removed from the proposal</li> </ul>  |
|  | <ul style="list-style-type: none"> <li>• Construction of a permanent helistop on the Patient Pavilion</li> </ul>  | <ul style="list-style-type: none"> <li>• Construction of a permanent helistop on the Link Building, which would be 5 stories instead of 3 stories in order to provide sufficient safety clearances for helicopters</li> <li>• Demolition of the existing helistop</li> </ul>  |
| CHORI Gymnasium Exterior Changes   | <ul style="list-style-type: none"> <li>• Minor exterior façade changes and interior renovation of the CHORI gymnasium to house additional research and laboratory space</li> </ul>        | <ul style="list-style-type: none"> <li>• CHORI gymnasium removed from the proposed project</li> </ul>   |
| 51 <sup>st</sup> and Clarke Street Parking Lot   | <ul style="list-style-type: none"> <li>• Removal of 160 parking spaces serving the Claremont Clinics</li> </ul>   | <ul style="list-style-type: none"> <li>• Not associated with the main CHRCO campus and removed from the proposed project</li> </ul>   |

Source: Oakland, City of, 2013. Staff Report to the Design Review Committee.

The following topics are not evaluated in detail in this EIR: agriculture and forestry resources; biological resources; mineral resources; population and housing; public services; and recreation. These topics are briefly discussed in the Effects Found Not to Be Significant section of Chapter VI, Other CEQA Considerations.

## D. REPORT ORGANIZATION

This EIR is organized into the following chapters:

- *Chapter I – Introduction:* Discusses the overall EIR purpose; provides a summary of the proposed project; describes the EIR scope; and summarizes the organization of the EIR.
- *Chapter II – Summary:* Provides a summary of the proposed project and of the impacts that would result from implementation of the proposed project, and describes the City's Standard Conditions of Approval incorporated into the project and mitigation measures recommended to reduce or avoid significant impacts. A summary discussion of alternatives to the proposed project is also provided.
- *Chapter III – Project Description:* Provides a description of the project site, site characteristics and conditions, proposed project objectives, required approval process, and details of the project itself.
- *Chapter IV – Setting, Impacts, Standard Conditions of Approval, and Mitigation Measures:* Describes the following for each environmental topic: existing conditions (setting); Standard Conditions of Approval (if applicable); significance thresholds; potential environmental impacts and their level of significance; and measures recommended when necessary to mitigate identified impacts. Potential adverse impacts are identified by level of significance as follows: less-than-significant impact (LTS), significant impact (S), and significant and unavoidable impact (SU). Cumulative impacts are also discussed in each technical topic section. The significance of each impact is categorized before and after implementation of any recommended mitigation measure(s).
- *Chapter V – Alternatives:* Provides an evaluation of three alternatives to the proposed project in addition to the No Project alternative.
- *Chapter VI – Other CEQA Considerations:* Provides additional specifically-required analyses of the proposed project's growth-inducing effects, significant irreversible changes, and effects found not to be significant.
- *Chapter VII – Report Preparation:* Identifies preparers of the EIR, references used, and persons and organizations contacted.
- *Appendices:* The appendices are located on a compact disc affixed to the inside back cover of this document. The appendices contain the NOP, written comments received on the NOP and a summary of comments from the scoping meetings; cultural resources, geotechnical, hazards; traffic, noise, air quality, and greenhouse gas emissions data and supporting analysis; water supply assumptions and data; and arborist reports.

All supporting technical documents and the reference documents are available for public review at the City of Oakland Department of Planning and Building, under case number ER12-0013.

The Draft EIR is available for public review for the period identified in the Notice of Availability attached to the front of this document. During this time, written comments on the Draft EIR may be submitted to the City of Oakland Bureau of Planning at the address indicated. Responses to all comments received on the environmental analysis in the Draft EIR during the specified review period will be included in the Responses to Comments/Final EIR.

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## **II. SUMMARY**

This chapter provides an overview of the proposed project and the findings outlined in this EIR, including a discussion of alternatives and cumulative project impacts.

### **A. PROJECT UNDER REVIEW**

This EIR has been prepared to evaluate the environmental impacts of the proposed Children's Hospital & Research Center Oakland (CHRCO) Campus Master Plan Project (project). The proposed project would demolish a total of 66,582 square feet of existing uses on the campus and construct a total of 399,200 square feet of new building area, for a total of 332,618 square feet of net new building area. Upon project completion, total building area at the CHRCO campus would be 1,025,034 square feet. In addition, a total of 284 net new parking spaces would be located on the campus at project completion, for a total of 1,391 parking spaces. The proposed project would be developed in two phases, the impacts of which are separately evaluated within each topical section of this EIR. Among other entitlements, the project sponsor is requesting a General Plan Amendment, Rezoning, a Planned Unit Development (PUD) Permit, Conditional Use Permits (CUPs), and a Vesting Tentative Map and Final Map(s). Refer to Chapter III, Project Description for a complete description of the proposed project and requested permits and approvals.

### **B. SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, AND MITIGATION MEASURES**

This summary provides an overview of the analysis contained in Chapter IV, Setting, Impacts, Standard Conditions of Approval, and Mitigation Measures. CEQA requires a summary to include discussion of: 1) potential areas of controversy; 2) significant impacts; 3) cumulative impacts; 4) significant irreversible and unavoidable impacts; and 5) alternatives to the proposed project that would reduce or avoid the environmental impacts of the project. These topics are summarized below.

#### **1. Potential Areas of Controversy**

A total of 53 comment letters were submitted in response to the Notice of Preparation (NOP). In addition, oral comments were also offered by those in attendance at the scoping sessions held on August 12, August 15, and August 28, 2013. Letters and oral comments raised a number of topics that the commenters wanted addressed in the EIR, which generally included the following topical areas: land use and planning; aesthetics and lighting; cultural and historic resources; transportation, circulation and parking; air quality; noise; safety hazards; public services; utilities; recreation; and impacts to trees. In addition, some of the commenters suggested potential alternatives to the project as proposed and others addressed the merits of the project itself and not the potential adverse environmental impacts that are the subject of this EIR. Copies of the written comment letters and a summary of the oral comments received are included in Appendix A.

## 2. Significant Impacts

Under CEQA, a significant impact on the environment is defined as "...a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."<sup>1</sup> As discussed in Chapter IV, Setting, Impacts, Standard Conditions of Approval and Mitigation Measures and summarized in **Table II-1**, with implementation of the City's standard conditions of approval, all of the potential impacts of the proposed project would be less than significant.

## 3. Cumulative Impacts

The proposed project would not result in any cumulative impacts.

## 4. Significant and Unavoidable Impacts

The proposed project would not result in any significant and unavoidable impacts.

## 5. Alternatives to the Proposed Project

Four alternatives to the proposed project are analyzed in Chapter V. These alternatives (with the exception of the CEQA-mandated No Project alternative) were intended to achieve the key objectives of the project while reducing or avoiding significant and less-than-significant environmental effects. The four alternatives are as follows:

- The **No Project alternative**, which assumes that no demolition or construction activities would occur on the campus, existing acute care functions would be relocated on- or off-site and that existing non-seismically compliant buildings would be backfilled with non-acute care uses in compliance with SB 1953.
- The **Dover Street Closure alternative**, which assumes the closure of Dover Street to through traffic between 53<sup>rd</sup> and 52<sup>nd</sup> Streets.
- The **No Caltrans Property Acquisition alternative**, which assumes that the existing 1.5-acre Caltrans right-of-way would not be acquired or developed as part of the proposed project.
- The **Existing General Plan and Zoning alternative**, which assumes that the existing General Plan and zoning designations that apply to the site would not be changed and that development of the site would be regulated by existing land use controls.

Each alternative is compared to the proposed project, and discussed in terms of its various mitigating or adverse effects on the environment. Analysis of the alternatives focuses on those topics for which significant adverse impacts would result from the proposed project. The Existing General Plan and Zoning alternative is considered to be the environmentally superior alternative.

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<sup>1</sup> Remy, Thomas, Moose, and Manley, 2007. *Guide to the California Environmental Quality Act*, p. 184; California Code of Regulations, Title 14, Chapter 3, Code 15382; Public Resources Code 21068.

## C. SUMMARY TABLE

Information in **Table II-1**, Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM), and Recommendations has been organized to correspond with environmental issues discussed in Chapter IV. The table is arranged in four columns: 1) impacts; 2) level of significance prior to mitigation; 3) required Standard Condition of Approval and/or recommended mitigation measures; and 4) level of significance after mitigation. Levels of significance are categorized as follows: LTS = Less Than Significant; S = Significant; SU = Significant and Unavoidable. For a complete description of potential impacts and recommended mitigation measures, please refer to the specific topical discussions in Chapter IV.

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts   | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)  | Level of Significance With MM, SCA or Recommendation |
|---|----------------------------------|---|--|
| <b>A. LAND USE AND PLANNING</b>   |                                  |   |  |
| <i>No significant land use or planning impacts would occur</i>  |                                  |   |  |
| <b>B. AESTHETICS AND SHADOW</b>   |                                  |   |  |
| <i>No significant impacts related to visual resources, light, glare, or shadow would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <b>SCA AES-1: Lighting Plan.</b> <i>Prior to the issuance of an electrical or building permit. The proposed lighting fixtures shall be adequately shielded to a point below the light bulb and reflector and that prevent unnecessary glare onto adjacent properties. Plans shall be submitted to the Planning and Zoning Division and the Electrical Services Division of the Public Works Agency for review and approval. All lighting shall be architecturally integrated into the site.</i>   | LTS  |
| <b>C. CULTURAL AND HISTORIC RESOURCES</b>   |                                  |   |  |
| <i>No significant impacts to archaeological resources would occur with implementation of the City Standard Conditions of Approval listed in this table.</i>                         | LTS                              | <b>SCA CUL-1: Archaeological Resources.</b> <i>Ongoing throughout demolition, grading, and/or construction</i><br>a. Pursuant to <i>CEQA Guidelines</i> section 15064.5 (f), “provisions for historical or unique archaeological resources accidentally discovered during construction” should be instituted. Therefore, in the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the project applicant and/or lead agency shall consult with a qualified archaeologist or paleontologist to assess the significance of the find. If any find is determined to be significant, representatives of the project proponent and/or lead agency and the qualified archaeologist would meet to determine the appropriate avoidance measures or other appropriate measure, with the ultimate determination to be made by the City of Oakland. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report prepared by the qualified archaeologist according to current professional standards.<br>b. In considering any suggested measure proposed by the consulting archaeologist in order to mitigate impacts to historical resources or unique archaeological resources, the project applicant shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while measure for historical resources or unique archaeological resources is carried out. | LTS  |



**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts      | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)  | Level of Significance With MM, SCA or Recommendation |
|----------------------------|----------------------------------|---|--|
| SCA CUL-1 <i>Continued</i> |                                  | <p>c. Should an archaeological artifact or feature be discovered on-site during project construction, all activities within a 50-foot radius of the find would be halted until the findings can be fully investigated by a qualified archaeologist to evaluate the find and assess the significance of the find according to the CEQA definition of a historical or unique archaeological resource. If the deposit is determined to be significant, the project applicant and the qualified archaeologist shall meet to determine the appropriate avoidance measures or other appropriate measure, subject to approval by the City of Oakland, which shall assure implementation of appropriate measure measures recommended by the archaeologist. Should archaeologically-significant materials be recovered, the qualified archaeologist shall recommend appropriate analysis and treatment, and shall prepare a report on the findings for submittal to the Northwest Information Center.</p> <p><b>SCA CUL-1a: Intensive Pre-Construction Study.</b> <i>Prior to demolition, grading and/or construction.</i> The project applicant, upon approval from the City Planning Department, may choose to complete a site-specific, intensive archaeological resources study prior to soil-disturbing activities occurring on the project site. The purpose of the site-specific, intensive archaeological resources study is to identify early the potential presence of history-period archaeological resources on the project site. If that approach is selected, the study shall be conducted by a qualified archaeologist approved by the City Planning Department.</p> <p>If prepared, at a minimum, the study shall include:</p> <ul style="list-style-type: none"> <li>• An intensive cultural resources study of the project site, including subsurface presence/absence studies, of the project site. Field studies conducted by the approved archaeologist(s) may include, but are not limited to, auguring and other common methods used to identify the presence of archaeological resources;</li> <li>• A report disseminating the results of this research;</li> <li>• Recommendations for any additional measures that could be necessary to mitigate any adverse impacts to recorded and/or inadvertently discovered cultural resources.</li> </ul> <p>If the results of the study indicate a high potential presence of historic-period archaeological resources on the project site, or a potential resource is discovered, the project applicant shall hire a qualified archaeologist to monitor any ground disturbing activities on the project site during construction (see SCA CUL-1b, Construction-Period Monitoring, below), implement avoidance and/or find recovery measures (see SCA CUL-1c, Avoidance and/or Find Recovery, below),</p> |  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts      | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|----------------------------|----------------------------------|--|--|
| SCA CUL-1 <i>Continued</i> |                                  | and prepare an ALERT Sheet that details what could potentially be found at the project site (see SCA CUL-1d, Construction ALERT Sheet, below). If no potential resources is discovered during the preconstruction study, SCA CUL-1, Archaeological Resources, shall apply and be adequate to reduce any potentially significant impact to less-than-significant.   |  |
|                            |                                  | <b>SCA CUL-1b: Construction-Period Monitoring.</b> <i>Ongoing throughout demolition, grading and/or construction.</i> Archaeological monitoring would include briefing construction personnel about the type of artifacts that may be present (as referenced in the ALERT Sheet, require per SCA CUL-1d, Construction ALERT Sheet, below) and the procedures to follow if any are encountered, field recording and sampling in accordance with the Secretary of Interior's <i>Standards and Guidelines for Archaeological Documentation</i> , notifying the appropriate officials if human remains or cultural resources are discovered, or preparing a report to document negative findings after construction is completed. If a significant archaeological resource is discovered during the monitoring activities, adherence to SCA CUL-1c, Avoidance and/or Find Recovery, discussed below), would be required to reduce the impact to less than significant. The project applicant shall hire a qualified archaeologist to monitor all ground-disturbing activities on the project site throughout construction.   |  |
|                            |                                  | <b>SCA CUL-1c: Avoidance and/or Find Recovery.</b> <i>Ongoing and throughout demolition, grading and/or construction.</i><br><br>If a significant archaeological resource is present that could be adversely impacted by the proposed project, the project applicant of the specific project site shall either:<br><ul style="list-style-type: none"> <li>• Stop work and redesign the proposed project to avoid any adverse impacts on significant archaeological resource(s); or,</li> <li>• If avoidance is determined infeasible by the City, design and implement an Archaeological Research Design and Treatment Plan (ARDTP). The project applicant shall hire a qualified archaeologist who shall prepare a draft ARDTP that shall be submitted to the City Planning Department for review and approval. The ARDTP is required to identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The ARDTP shall identify the scientific/historic research questions applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. The ARDTP shall include the analysis and specify the curation and storage methods. Data recovery, in</li> </ul> |  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts      | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|----------------------------|----------------------------------|--|--|
| SCA CUL-1 <i>Continued</i> |                                  | <p>general, shall be limited to the portions of the archaeological resource that could be impacted by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical. The project applicant shall implement the ARDTP. Because the intent of the ARDTP is to save as much of the archaeological resource as possible, including moving the resource, if feasible, preparation and implementation of the ARDTP would reduce the potential adverse impact to less than significant.</p> <p><b>SCA CUL-1d: Construction ALERT Sheet.</b> <i>Prior to and during all subsurface construction activities for the Project.</i></p> <p>The project applicant, upon approval from the City Planning Department, may choose to prepare a construction ALERT sheet prior to soil-disturbing activities occurring on the project site, instead of conducting site-specific, intensive archaeological resources pursuant to SCA CUL-1a, above. The project applicant shall submit for review and approval by the City prior to subsurface construction activity an “ALERT” sheet prepared by a qualified archaeologist with visuals that depict each type of artifact that could be encountered on the project site. Training by the qualified archaeologist shall be provided to the project’s prime contractor; any project subcontractor firms (including demolition, excavation, grading, foundation, and pile driving); and/or utilities firm involved in soil-disturbing activities within the project site. The ALERT sheet shall state, in addition to the basic measures of SCA CUL-1, that in the event of discovery of the following cultural materials, all work must be stopped in the area and the City’s Environmental Review Officer contacted to evaluate the find: concentrations of shellfish remains; evidence of fire (ashes, charcoal, burnt earth, firecracked rocks); concentrations of bones; recognizable Native American artifacts (arrowheads, shell beads, stone mortars [bowls], humanly shaped rock); building foundation remains; trash pits, privies (outhouse holes); floor remains; wells; concentrations of bottles, broken dishes, shoes, buttons, cut animal bones, hardware, household items, barrels, etc.; thick layers of burned building debris (charcoal, nails, fused glass, burned plaster, burned dishes); wood structural remains (building, ship, wharf); clay roof/floor tiles; stone walls or footings; or gravestones.</p> |  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts  | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|--|----------------------------------|--|--|
| SCA CUL-1 <i>Continued</i>   |                                  | Prior to any soil-disturbing activities, each contractor shall be responsible for ensuring that the ALERT sheet is circulated to all field personnel, including machine operators, field crew, pile drivers, and supervisory personnel. If the project applicant chooses to implement SCA CUL-1d, Construction ALERT Sheet, and a potential resource is discovered on the project site during ground disturbing activities during construction, the project applicant shall hire a qualified archaeologist to monitor any ground disturbing activities on the project site during construction (see SCA CUL-1b, Construction-Period Monitoring, above), implement avoidance and/or find recovery measures (see SCA CUL-1c, Avoidance and/or Find Recovery, above), and prepare an updated ALERT Sheet that addresses the potential resource(s) and other possible resources based on the discovered find found on the project site. If no potential resource(s) are discovered during ground disturbing activities during construction pursuant to the construction ALERT sheet, SCA CUL-1, Archaeological Resources, shall apply and be adequate to reduce any potentially significant impact to less than significant. |  |
| <i>No significant impacts to human remains would occur with implementation of the City Standard Conditions of Approval listed in this table.</i> | LTS                              | <b>SCA CUL-2: Human Remains.</b> <i>Ongoing throughout demolition, grading, and/or construction.</i> In the event that human skeletal remains are uncovered at the project site during construction or ground-breaking activities, all work shall immediately halt and the Alameda County Coroner shall be contacted to evaluate the remains, and following the procedures and protocols pursuant to Section 15064.5 (e)(1) of the CEQA Guidelines. If the County Coroner determines that the remains are Native American, the City shall contact the California Native American Heritage Commission (NAHC), pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, and all excavation and site preparation activities shall cease within a 50-foot radius of the find until appropriate arrangements are made. If the agencies determine that avoidance is not feasible, then an alternative plan shall be prepared with specific steps and timeframe required to resume construction activities. Monitoring, data recovery, determination of significance and avoidance measures (if applicable) shall be completed expeditiously.   | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts  | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)  | Level of Significance With MM, SCA or Recommendation |
|--|----------------------------------|---|--|
| <i>No significant impacts to paleontological resources would occur with implementation of the City Standard Conditions of Approval listed in this table.</i> | LTS                              | <b>SCA CUL-3: Paleontological Resources.</b> <i>Ongoing throughout demolition, grading, and/or construction.</i> In the event of an unanticipated discovery of a paleontological resource during construction, excavations within 50 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist (per Society of Vertebrate Paleontology standards (SVP 1995,1996)). The qualified paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in Section 15064.5 of the CEQA Guidelines. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the City determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important, and such plan shall be implemented. The plan shall be submitted to the City for review and approval.   | LTS  |
| <i>No significant impacts to historic resources would occur with implementation of the City Standard Condition of Approvals listed in this table.</i>        | LTS                              | <b>SCA CUL-4: Compliance with Policy 3.7 of the Historic Preservation Element (Property Relocation Rather than Demolition).</b> <i>Prior to issuance of a demolition permit.</i> The project applicant shall make a good faith effort to relocate the buildings located at 5204 Martin Luther King Jr. Way to a site acceptable to the Planning and Zoning Division and the Oakland Cultural Heritage Survey. Good faith efforts include, at a minimum, the following:<br>a. Advertising the availability of the building by: (1) posting of large visible signs (such as banners, at a minimum of 3'x 6' size or larger) at the site; (2) placement of advertisements in Bay Area news media acceptable to the City; and (3) contacting neighborhood associations and for-profit and not-for-profit housing and preservation organizations;<br>b. Maintaining a log of all the good faith efforts and submitting that along with photos of the subject building showing the large signs (banners) to the Planning and Zoning Division;<br>c. Maintaining the signs and advertising in place for a minimum of 90 days; and<br>d. Making the building available at no or nominal cost (the amount to be reviewed by the Oakland Cultural Heritage Survey) until removal is necessary for construction of a replacement project, but in no case for less than a period of 90 days after such advertisement. | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts  | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|--|----------------------------------|--|--|
| NON CEQA REQUIRED RECOMMENDED PROJECT SPECIFIC CONDITIONS  |                                  | <b>Recommendation CUL-1a:</b> Incorporate a new magnolia tree into the site plan of the proposed project, as close as possible to the historic location of the magnolia, within the constraints of the site plan.  | LTS  |
|  |                                  | <b>Recommendation CUL-1b:</b> Install a permanent high-quality plaque or simple interpretive panel near the magnolia tree that includes information about the magnolia tree, including its historic relation to the site and its influence on naming of the “Branches.”  | LTS  |
|  |                                  | <b>Recommendation CUL-2:</b> Plan and install a new courtyard that retains a level of spatial openness similar to the level of spatial openness at the extant courtyard.   | LTS  |
|  |                                  | <b>Recommendation CUL-3:</b> A refinement of the design of the eastern portion of the Patient Pavilion should be given consideration by the design team. Assuming that changes to the façade design will have no negative effect on the programmatic needs of the CHRCO, recommendations include refining the curtain wall façade of the Pavilion as it transitions into the Link Building, and/or incorporating more direct design cues from the A/B Wing.  | LTS  |
| D. TRANSPORTATION AND CIRCULATION  |                                  |  |  |
| No significant operational impacts related to transportation and circulation would occur with implementation of the City Standard Conditions of Approval listed in this table. | LTS                              | <b>SCA TRA-1: Parking and Transportation Demand Management.</b> <i>Prior to issuance of a final inspection of the building permit.</i><br><br>The project applicant shall submit a Transportation and Parking Demand Management (TDM) plan for review and approval by the City. The intent of the TDM plan shall be to reduce vehicle traffic and parking demand generated by the project to the maximum extent practicable consistent with the potential traffic and parking impacts of the project.<br><br>The goal of the TDM shall be to achieve the following project vehicle trip reductions (VTR): <ul style="list-style-type: none"><li>Projects generating 50 to 99 net new AM or PM peak hour vehicle trips: 10 percent VTR</li><li>Projects generating 100 or more net new AM or PM peak hour vehicle trips: 20 percent VTR</li></ul><br>The TDM plan shall include strategies to increase pedestrian, bicycle, transit, and carpool use, and reduce parking demand. All four modes of travel shall be considered, as appropriate. VTR strategies to consider include, but are not limited to, the following: <ul style="list-style-type: none"><li>a) Inclusion of additional long term and short term bicycle parking that meets the design standards set forth in chapter five of the Bicycle Master Plan, and</li></ul> | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts      | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|----------------------------|----------------------------------|--|--|
| SCA TRA-1 <i>Continued</i> |                                  | <p>Bicycle Parking Ordinance (chapter 17.117 of the Oakland Planning Code), and shower and locker facilities in commercial developments that exceed the requirement.</p> <p>b) Construction of and/or access to bikeways per the Bicycle Master Plan; construction of priority Bikeway Projects, on-site signage and bike lane striping.</p> <p>c) Installation of safety elements per the Pedestrian Master Plan (such as cross walk striping, curb ramps, count-down signals, bulb outs, etc.) to encourage convenient and safe crossing at arterials, in addition to safety elements required to address safety impacts of the project.</p> <p>d) Installation of amenities such as lighting, street trees, trash receptacles per the Pedestrian Master Plan and any applicable streetscape plan.</p> <p>e) Construction and development of transit stops/shelters, pedestrian access, way finding signage, and lighting around transit stops per transit agency plans or negotiated improvements.</p> <p>f) Direct on-site sales of transit passes purchased and sold at a bulk group rate (through programs such as AC Transit Easy Pass or a similar program through another transit agency).</p> <p>g) Provision of a transit subsidy to employees or residents, determined by the project sponsor and subject to review by the City, if the employees or residents use transit or commute by other alternative modes.</p> <p>h) Provision of an ongoing contribution to AC Transit service to the area between the development and nearest mass transit station prioritized as follows: 1) Contribution to AC Transit bus service; 2) Contribution to an existing area shuttle or streetcar service; and 3) Establishment of new shuttle or streetcar service. The amount of contribution (for any of the above scenarios) would be based upon the cost of establishing new shuttle service (Scenario3).</p> <p>i) Guaranteed ride home program for employees, either through 511.org or through separate program.</p> <p>j) Pre-tax commuter benefits (commuter checks) for employees.</p> <p>k) Free designated parking spaces for on-site car-sharing program (such as City Car Share, Zip Car, etc.) and/or car-share membership for employees or tenants.</p> |  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts   | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)  | Level of Significance With MM, SCA or Recommendation |
|---|----------------------------------|---|--|
| SCA TRA-1 <i>Continued</i>  |                                  | <ul style="list-style-type: none"> <li>l) Onsite carpooling and/or vanpooling program that includes preferential (discounted or free) parking for carpools and vanpools.</li> <li>m) Distribution of information concerning alternative transportation options.</li> <li>n) Parking spaces sold/leased separately for residential units. Charge employees for parking, or provide a cash incentive or transit pass alternative to a free parking space in commercial properties.</li> <li>o) Parking management strategies; including attendant/valet parking and shared parking spaces.</li> <li>p) Requiring tenants to provide opportunities and the ability to work off-site.</li> <li>q) Allow employees or residents to adjust their work schedule in order to complete the basic work requirement of five eight-hour workdays by adjusting their schedule to reduce vehicle trips to the worksite (e.g., working four, ten-hour days; allowing employees to work from home two days per week).</li> <li>r) Provide or require tenants to provide employees with staggered work hours involving a shift in the set work hours of all employees at the workplace or flexible work hours involving individually determined work hours.</li> </ul>   |  |
| <i>No significant construction-related transportation and circulation impacts would occur with implementation of the City Standard Conditions of Approval listed in this table.</i> | LTS                              | <p><b>SCA TRA-2: Construction Traffic and Parking.</b> <i>Prior to issuance of a demolition, grading, or building permit.</i></p> <p>The project applicant and construction contractor shall meet with appropriate City of Oakland agencies to determine traffic management strategies to reduce, to the maximum extent feasible, traffic congestion and the effects of parking demand by construction workers during construction of this project and other nearby projects that could be simultaneously under construction. The project applicant shall develop a construction management plan for review and approval by the Planning and Zoning Division, the Building Services Division, and the Transportation Services Division. The plan shall include at least the following items and requirements:</p> <ul style="list-style-type: none"> <li>a) A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak traffic hours, detour signs if required, lane closure procedures, signs, cones for drivers, and designated construction access routes.</li> <li>b) Notification procedures for adjacent property owners and public safety personnel regarding when major deliveries, detours, and lane closures will occur.</li> <li>c) Location of construction staging areas for materials, equipment, and vehicles at an approved location.</li> </ul> | LTS  |



**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts      | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|----------------------------|----------------------------------|--|--|
| SCA TRA-2 <i>Continued</i> |                                  | <ul style="list-style-type: none"> <li>d) A process for responding to, and tracking, complaints pertaining to construction activity, including identification of an onsite complaint manager. The manager shall determine the cause of the complaints and shall take prompt action to correct the problem. Planning and Zoning shall be informed who the Manager is prior to the issuance of the first permit issued by Building Services.</li> <li>e) Provision for accommodation of pedestrian flow.</li> <li>f) Provision for parking management and spaces for all construction workers to ensure that construction workers do not park in on-street spaces.</li> <li>g) Any damage to the street caused by heavy equipment, or as a result of this construction, shall be repaired, at the project sponsor's expense, within one week of the occurrence of the damage (or excessive wear), unless further damage/excessive wear may continue; in such case, repair shall occur prior to issuance of a final inspection of the building permit. All damage that is a threat to public health or safety shall be repaired immediately. The street shall be restored to its condition prior to the new construction as established by the City Building Inspector and/or photo documentation, at the project sponsor's expense, before the issuance of a Certificate of Occupancy.</li> <li>h) Any heavy equipment brought to the construction site shall be transported by truck, where feasible.</li> <li>i) No materials or equipment shall be stored on the traveled roadway at any time.</li> <li>j) Prior to construction, a portable toilet facility and a debris box shall be installed on the site, and properly maintained through project completion.</li> <li>k) All equipment shall be equipped with mufflers.</li> <li>l) Prior to the end of each work day during construction, the contractor or contractors shall pick up and properly dispose of all litter resulting from or related to the project, whether located on the property, within the public rights-of-way, or properties of adjacent or nearby neighbors.</li> <li>m) A set of comprehensive traffic control measures for motor vehicles, transit, bicycle, and pedestrian access and circulation during each phase of construction.</li> <li>n) A construction period parking management plan to ensure that parking demands for construction workers, site employees, and patients/visitors are accommodated during each phase of construction.</li> <li>o) Limit construction truck traffic to the streets identified in Figure IV.D-25 as part of the contract for project construction.</li> </ul> |  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts  | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|--|----------------------------------|--|--|
| <b>NON CEQA REQUIRED RECOMMENDED PROJECT SPECIFIC CONDITIONS</b> |                                  | <p><b>Recommendation TRA-1:</b> As part of relocating the Main Garage driveway to Martin Luther King Jr. Way in Phase 1 of the CHRCO project, coordinate with City of Oakland to implement the following:</p> <ul style="list-style-type: none"> <li>Relocate the gate between the Main Garage and OPC-2 about 20 feet to the south to provide about 40 feet (corresponding to about two passenger vehicle) queuing space for vehicles exiting the Main Garage to 52<sup>nd</sup> Street.</li> <li>Two months after the relocation of the Main Garage driveway, conduct field observations and evaluate the safety and operations of U-turns at on northbound Martin Luther King Jr. Way at 54<sup>th</sup> Street (intersection #5). If excessive queuing is observed, consider either providing a 100-foot left-turn lane on northbound Martin Luther King Jr. Way at 54<sup>th</sup> Street (intersection #5) or prohibiting U-turns and left-turns at this location. If a new left-turn lane is provided at this location, the median on Martin Luther King Jr. Way should also be modified to provide a median nose to improve pedestrian safety.</li> <li>Provide signage at the proposed Garage exit on Martin Luther King Jr. Way to direct motorists traveling south to make U-turns at 54<sup>th</sup> and/or 55<sup>th</sup> Streets.</li> </ul>  | LTS  |
|  |                                  | <p><b>Recommendation TRA-2:</b> As part of Phase 2 of the CHRCO project, coordinate with City of Oakland to implement the following in order to improve safety at the Dover Street-Hospital Driveway/52<sup>nd</sup> Street intersection (#12):</p> <ul style="list-style-type: none"> <li>Provide marked crosswalks with directional curb ramps on all four approaches of intersection.</li> <li>Two months after the main hospital and the new garage have been issued a Certificate of Occupancy, conduct field observations to evaluate traffic volumes using Dover Street to access the main hospital, and pedestrian activity crossing 52<sup>nd</sup> Street at Dover Street. If either of the following two conditions are satisfied: 1) the average vehicle delay for either Dover Street or Hospital Driveway intersection approach exceeds 35 seconds per vehicle (approach level of service degrades to LOS E) or 2) safety challenges for vehicles and/or pedestrians are observed due to the offset intersection, lack of left-turn pockets or other reasons, consider one of the following options to reduce traffic volumes at the intersection: <ul style="list-style-type: none"> <li>Close Dover Street to automobile traffic just south of 53<sup>rd</sup> Street, which would convert Dover Street between 52<sup>nd</sup> and 53<sup>rd</sup> Streets to a cul-de-sac; or</li> <li>Prohibit left-turns from southbound Dover Street to eastbound 52<sup>nd</sup> Street and/or, except for hospital delivery vehicles, prohibit left-turns from eastbound 52<sup>nd</sup> Street to northbound Dover Street during peak congestion periods.</li> </ul> </li> </ul> | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|-----------------------|----------------------------------|--|--|
|                       |                                  | <b>Recommendation TRA-3:</b> Widen the through pedestrian zone to a minimum of 8-feet on the sidewalk along Martin Luther King Jr. Way fronting OPC-2 and Main Garage to be consistent with the City of Oakland's <i>Pedestrian Master Plan</i> .  | LTS  |
|                       |                                  | <b>Recommendation TRA-4:</b> As part of Phase 2 of the CHRCO project, coordinate with City of Oakland to implement a bikeway on 52 <sup>nd</sup> Street between Market Street and Shattuck Avenue as shown on Figure IV.D-24 and consisting of the following: <ul style="list-style-type: none"> <li>• Provide a Class 3B bicycle boulevard on 52<sup>nd</sup> Street between Market and West Streets within the current street right-of-way. In addition, consider installing physical traffic calming measures as appropriate on this segment of 52<sup>nd</sup> Street to reduce automobile speeds and potential for cut-through traffic.</li> <li>• Provide Class 2 bike lanes (with buffers where feasible) between West and Dover Streets, and a combination of Class 2 bike lanes (with buffers where feasible) and Class 3A arterial bicycle routes on 52<sup>nd</sup> Street between Dover Street and Shattuck Avenue, which will require following street modifications: <ul style="list-style-type: none"> <li>○ Reduce eastbound 52<sup>nd</sup> Street to one travel lane between West Street and SR 24 Ramps.</li> <li>○ Reduce westbound 52<sup>nd</sup> Street to one travel lane between SR 24 Ramps and the existing Garage Driveway.</li> <li>○ Reconfigure westbound 52<sup>nd</sup> Street at SR 24 On-Ramp to provide two right-turn lanes, one bicycle lane, and one through lane.</li> <li>○ Adjust signal timing at the Martin Luther King Jr. Way/52<sup>nd</sup> Street (#10) and Garage Driveway/52<sup>nd</sup> Street (#11) intersections.</li> </ul> </li> <li>• Provide bulbouts on the northeast and southeast corners of the Garage Driveway/52<sup>nd</sup> Street intersection (#11)</li> <li>• Create a refuge on the south crosswalk at Martin Luther King Jr. Way/52<sup>nd</sup> Street intersection by installing a median nose.</li> <li>• Provide median pedestrian push-buttons for the north and south crosswalks at the Martin Luther King Jr. Way/52<sup>nd</sup> Street intersection.</li> <li>• Install directional curb ramps at the northwest and southwest corners of the Martin Luther King Jr. Way/52<sup>nd</sup> Street intersection.</li> <li>• To the extent feasible, maintain or widen sidewalk widths on both sides of 52<sup>nd</sup> Street between Martin Luther King Jr. Way and Dover Street.</li> <li>• Consider providing pedestrian-scale lighting on 52<sup>nd</sup> Street along project frontage and under the freeway underpass.</li> </ul> | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)  | Level of Significance With MM, SCA or Recommendation |
|-----------------------|----------------------------------|---|--|
|                       |                                  | <p><b><u>Recommendation TRA-5:</u></b> As part of Phase 1 of the CHRCO project, coordinate with AC Transit to implement the following:</p> <ul style="list-style-type: none"> <li>Move the northbound Route 18 bus stop from mid-block between 52<sup>nd</sup> and 53<sup>rd</sup> Streets to just north of 52<sup>nd</sup> Street.</li> <li>Ensure that the new bus stop location would have adequate space for a shelter, bench, and trash receptacle, and maintain a pedestrian passage zone on the adjacent sidewalk. Also, provide pedestrian-scale lighting at the bus stop.</li> </ul>   | LTS  |
|                       |                                  | <p><b><u>Recommendation TRA-6:</u></b> As part of Phase 2 of the CHRCO project, consider providing shuttle stops at the following locations:</p> <ul style="list-style-type: none"> <li>Either along eastbound 52<sup>nd</sup> Street just east of the signalized pedestrian crossing to primarily serve OPC-1 and OPC-2 or within the reconfigured plaza at the southeast corner of the Martin Luther King Jr. Way/52<sup>nd</sup> Street intersection.</li> <li>In the new entrance area for the hospital that can be accessed through the extension of Dover Street to primarily serve the main hospital.</li> </ul>   | LTS  |
|                       |                                  | <p><b><u>Recommendation TRA-7:</u></b> Although not required to address an adverse environmental impact, the following should be considered in regards to bicycle parking as part of the TDM program required by SCA TRA-1:</p> <ul style="list-style-type: none"> <li>Consistent with the Oakland Bicycle Parking Ordinance, consider providing a total of 110 long-term and 20 short-term bicycle parking spaces at end of Phase 1 and a total of 119 long-term and 26 short-term bicycle parking spaces at the end of Phase 2 .</li> <li>Monitor the usage of long-term and short-term bicycle parking spaces and if necessary provide additional bicycle parking spaces.</li> </ul>   | LTS  |
|                       |                                  | <p><b><u>Recommendation TRA-8:</u></b> Although not required to address an adverse environmental impact, the following strategies, should be considered as part of the TDM program required by SCA TRA-1, to reduce parking demand and better manage the available parking supply:</p> <ul style="list-style-type: none"> <li>Install an automated parking counting system including variable message signs to inform motorists approaching CHRCO of the number of unoccupied parking spaces in the two garages in order to reduce potential traffic circulation. In addition, provide a variable message sign at the entrance to the Main Garage basement that shows the number of unoccupied parking spaces in the basement.</li> <li>Continue to restrict parking in the basement of the existing garage to parking for physicians and hospital senior management only.</li> </ul> | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts   | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|---|----------------------------------|--|--|
|   |                                  | <p>Recommendation TRA-8 <i>Continued</i></p> <ul style="list-style-type: none"> <li>Continue to provide attendant parking at the West Lot and consider providing attendant parking at the existing and/or proposed garage during peak parking demand periods if necessary.</li> <li>Install parking meters at all on-street parking spaces on 52<sup>nd</sup> Street between Martin Luther King Jr. Way and SR 24 Ramps and on segments of Martin Luther King Jr. Way within two blocks of the project site with non-residential frontage.</li> <li>Limit parking on 52<sup>nd</sup> Street along project frontage to 30 minutes.</li> </ul>   |  |
| <b>E. AIR QUALITY</b>   |                                  |  |  |
| <p><i>No significant construction-related air quality impacts would occur with implementation of the City Standard Conditions of Approval listed in this table.</i></p> | LTS                              | <p><b>SCA AIR-1: Construction-Related Air Pollution Controls (Dust and Equipment Emissions).</b> <i>Ongoing throughout demolition, grading, and/or construction.</i></p> <p>During construction, the project applicant shall require the construction contractor to implement all of the following applicable measures recommended by the Bay Area Air Quality Management District (BAAQMD):</p> <ol style="list-style-type: none"> <li>Water all exposed surfaces of active construction areas at least twice daily (using reclaimed water if possible). Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible.</li> <li>Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).</li> <li>All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.</li> <li>Pave all roadways, driveways, sidewalks, etc. as soon as feasible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.</li> <li>Enclose, cover, water twice daily or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.).</li> <li>Limit vehicle speeds on unpaved roads to 15 miles per hour.</li> </ol> | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts      | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)  | Level of Significance With MM, SCA or Recommendation |
|----------------------------|----------------------------------|---|--|
| SCA AIR-1 <i>Continued</i> |                                  | <ul style="list-style-type: none"> <li>g) Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485, of the California Code of Regulations. Clear signage to this effect shall be provided for construction workers at all access points.</li> <li>h) All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.</li> <li>i) Post a publicly visible sign that includes the contractor's name and telephone number to contact regarding dust complaints. When contacted, the contractor shall respond and take corrective action within 48 hours. The telephone numbers of contacts at the City and the BAAQMD shall also be visible. This information may be posted on other required on-site signage.</li> <li>j) All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.</li> <li>k) All excavation, grading, and demolition activities shall be suspended when average wind speeds exceed 20 mph.</li> <li>l) Install sandbags or other erosion control measures to prevent silt runoff to public roadways.</li> <li>m) Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for one month or more).</li> <li>n) Designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress.</li> <li>o) Install appropriate wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of the construction site to minimize wind-blown dust. Wind breaks must have a maximum 50 percent air porosity.</li> <li>p) Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.</li> </ul> |  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts      | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|----------------------------|----------------------------------|--|--|
| SCA AIR-1 <i>Continued</i> |                                  | <ul style="list-style-type: none"> <li>q) The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.</li> <li>r) All trucks and equipment, including tires, shall be washed off prior to leaving the site.</li> <li>s) Site accesses to a distance of 100 feet from the paved road shall be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel.</li> <li>t) Minimize the idling time of diesel-powered construction equipment to two minutes.</li> <li>u) The project applicant shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate matter (PM) reduction compared to the most recent California Air Resources Board (ARB) fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as they become available.</li> <li>v) Use low VOC (e.g., ROG) coatings beyond the local requirements (e.g., BAAQMD Regulation 8, Rule 3: Architectural Coatings).</li> <li>w) All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NOx and PM.</li> <li>x) Off-road heavy diesel engines shall meet the ARB's most recent certification standard.</li> </ul> |  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts   | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)  | Level of Significance With MM, SCA or Recommendation |
|---|----------------------------------|---|--|
| <i>No significant operation-related air quality impacts associated with toxic air contaminants (particulate matter) would occur with implementation of the City Standard Conditions of Approval listed in this table.</i> | LTS                              | <p><b>SCA AIR-2: Exposure to Air Pollution (Toxic Air Contaminants: Particulate Matter).</b> Prior to issuance of a demolition, grading, or building permit</p> <p>A. Indoor Air Quality: In accordance with the recommendations of the California Air Resources Board (ARB) and the Bay Area Air Quality Management District, appropriate measures shall be incorporated into the project design in order to reduce the potential health risk due to exposure to diesel particulate matter to achieve an acceptable interior air quality level for sensitive receptors. The appropriate measures shall include one of the following methods:</p> <ol style="list-style-type: none"> <li>1. The project applicant shall retain a qualified air quality consultant to prepare a health risk assessment (HRA) in accordance with the ARB and the Office of Environmental Health and Hazard Assessment requirements to determine the exposure of project residents/occupants/users to air pollutants prior to issuance of a demolition, grading, or building permit. The HRA shall be submitted to the Planning and Zoning Division for review and approval. The applicant shall implement the approved HRA recommendations, if any. If the HRA concludes that the air quality risks from nearby sources are at or below acceptable levels, then additional measures are not required.</li> <li>2. The applicant shall implement all of the following features that have been found to reduce the air quality risk to sensitive receptors and shall be included in the project construction plans. These features shall be submitted to the Planning and Zoning Division and the Building Services Division for review and approval prior to the issuance of a demolition, grading, or building permit and shall be maintained on an ongoing basis during operation of the project. <ol style="list-style-type: none"> <li>a) Redesign the site layout to locate sensitive receptors as far as possible from any freeways, major roadways, or other sources of air pollution (e.g., loading docks, parking lots).</li> <li>b) Do not locate sensitive receptors near distribution center's entry and exit points.</li> <li>c) Incorporate tiered plantings of trees (redwood, deodar cedar, live oak, and/or oleander) to the maximum extent feasible between the sources of pollution and the sensitive receptors.</li> </ol> </li> </ol> | LTS  |



**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts      | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)  | Level of Significance With MM, SCA or Recommendation |
|----------------------------|----------------------------------|---|--|
| SCA AIR-2 <i>Continued</i> |                                  | <p>d) Install, operate and maintain in good working order a central heating and ventilation (HV) system or other air take system in the building, or in each individual residential unit, that meets or exceeds an efficiency standard of MERV 13. The HV system shall include the following features: Installation of a high efficiency filter and/or carbon filter to filter particulates and other chemical matter from entering the building. Either HEPA filters or ASHRAE 85 percent supply filters shall be used.</p> <p>e) Retain a qualified HV consultant or HERS rater during the design phase of the project to locate the HV system based on exposure modeling from the pollutant sources.</p> <p>f) Install indoor air quality monitoring units in buildings.</p> <p>g) Project applicant shall maintain, repair and/or replace HV system on an ongoing and as needed basis or shall prepare an operation and maintenance manual for the HV system and the filter. The manual shall include the operating instructions and the maintenance and replacement schedule. This manual shall be included in the CC&amp;Rs for residential projects and distributed to the building maintenance staff. In addition, the applicant shall prepare a separate homeowners manual. The manual shall contain the operating instructions and the maintenance and replacement schedule for the HV system and the filters.</p> <p>B. Outdoor Air Quality: To the maximum extent practicable, individual and common exterior open space, including playgrounds, patios, and decks, shall either be shielded from the source of air pollution by buildings or otherwise buffered to further reduce air pollution for project occupants.</p> |  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts   | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)  | Level of Significance With MM, SCA or Recommendation |
|---|----------------------------------|---|--|
| <p><i>No significant operation-related air quality impacts associated with toxic air contaminants (gaseous emissions) would occur with implementation of the City Standard Conditions of Approval listed in this table.</i></p> | <p>LTS</p>                       | <p><b>SCA AIR-3: Exposure to Air Pollution (Toxic Air Contaminants: Gaseous Emissions).</b> Prior to issuance of a demolition, grading, or building permit</p> <p>A. Indoor Air Quality: In accordance with the recommendations of the California Air Resources Board (ARB) and the Bay Area Air Quality Management District, appropriate measures shall be incorporated into the project design in order to reduce the potential risk due to exposure to toxic air contaminants to achieve an acceptable interior air quality level for sensitive receptors. The project applicant shall retain a qualified air quality consultant to prepare a health risk assessment (HRA) in accordance with the ARB and the Office of Environmental Health and Hazard Assessment requirements to determine the exposure of project residents/occupants/users to air pollutants prior to issuance of a demolition, grading, or building permit. The HRA shall be submitted to the Planning and Zoning Division for review and approval. The applicant shall implement the approved HRA recommendations, if any. If the HRA concludes that the air quality risks from nearby sources are at or below acceptable levels, then additional measures are not required.</p> <p>B. Exterior Air Quality: To the maximum extent practicable, individual and common exterior open space, including playgrounds, patios, and decks, shall either be shielded from the source of air pollution by buildings or otherwise buffered to further reduce air pollution for project occupants.</p> | <p>LTS</p>   |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

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|--|----------------------------------|--|--|
| <b>F. GREENHOUSE GAS EMISSIONS</b>   |                                  |  |  |
| <i>No significant impacts associated with greenhouse gas emissions would occur with implementation of the City Standard Conditions of Approval listed in this table.</i> | LTS                              | <p><b>For OPC2, Clinical Support Building and Family Residence Building:</b><br/> <b>SCA GHG-1a: Compliance with the Green Building Ordinance, OMC Chapter 18.02.</b></p> <p><i>Prior to issuance of a demolition, grading, or building permit</i></p> <p>The applicant shall comply with the requirements of the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the Green Building Ordinance, OMC Chapter 18.02.</p> <p>a) The following information shall be submitted to the Building Services Division for review and approval with the application for a building permit:</p> <ol style="list-style-type: none"> <li>Documentation showing compliance with Title 24 of the 2008 California Building Energy Efficiency Standards.</li> <li>Completed copy of the final green building checklist approved during the review of the Planning and Zoning permit.</li> <li>Permit plans that show, in general notes, detailed design drawings, and specifications as necessary, compliance with the items listed in subsection (b) below.</li> <li>Copy of the signed statement by the Green Building Certifier approved during the review of the Planning and Zoning permit that the project complied with the requirements of the Green Building Ordinance.</li> <li>Signed statement by the Green Building Certifier that the project still complies with the requirements of the Green Building Ordinance, unless an Unreasonable Hardship Exemption was granted during the review of the Planning and Zoning permit.</li> <li>Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.</li> </ol> | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

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|-----------------------------|----------------------------------|---|--|
| SCA GHG-1a <i>Continued</i> |                                  | <p>b) The set of plans in subsection (a) shall demonstrate compliance with the following:</p> <ul style="list-style-type: none"> <li>i. CALGreen mandatory measures.</li> <li>ii. All pre-requisites per LEED for the OPC2 and the Clinical Support Building and GreenPoint Rated checklist for the Family Residence Building approved during the review of the Planning and Zoning permit, or if applicable.</li> <li>iii. LEED Silver for the OPC2 and the Clinical Support Building and 25 GreenPoint Rated points per the appropriate checklist approved during the Planning entitlement process.</li> <li>iv. All green building points identified on the checklist approved during review of the Planning and Zoning permit, unless a Request for Revision Plan-check application is submitted and approved by the Planning and Zoning Division that shows the previously approved points that will be eliminated or substituted.</li> <li>v. The required green building point minimums in the appropriate credit categories.</li> </ul> <p><i>During construction</i></p> <p>The applicant shall comply with the applicable requirements CALGreen and the Green Building Ordinance, Chapter 18.02.</p> <p>a) The following information shall be submitted to the Building Inspections Division of the Building Services Division for review and approval:</p> <ul style="list-style-type: none"> <li>i. Completed copies of the green building checklists approved during the review of the Planning and Zoning permit and during the review of the building permit.</li> <li>ii. Signed statement(s) by the Green Building Certifier during all relevant phases of construction that the project complies with the requirements of the Green Building Ordinance.</li> <li>iii. Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.</li> </ul> |  |

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|--|----------------------------------|---|--|
| SCA GHG-1a <i>Continued</i>  |                                  | <p><i>After construction, as specified below</i></p> <p>Within sixty (60) days of the final inspection of the building permit for the project, the Green Building Certifier shall submit the appropriate documentation to Build It Green for the Family Residence Building and GBCI for the OPC2 and the Clinical Support Building and attain the minimum certification/point level identified in subsection (a) above. Within one year of the final inspection of the building permit for the project, the applicant shall submit to the Planning and Zoning Division the Certificate from the organization listed above demonstrating certification and compliance with the minimum point/certification level noted above.</p>  |  |
| <i>No significant impacts associated with greenhouse gas emissions would occur with implementation of the City Standard Conditions of Approval listed in this table.</i> | LTS                              | <p><b>For OPC1 renovations, B/C Wing, and Landscaping:</b><br/> <b>SCA GHG-1b: Compliance with the Green Building Ordinance, OMC Chapter 18.02, for Building and Landscape Projects Using the StopWaste.Org Small Commercial and the Bay Friendly Basic Landscape Checklist.</b></p> <p><i>Prior to issuance of a building permit</i></p> <p>The applicant shall comply with the requirements of the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the Green Building Ordinance, (OMC Chapter 18.02.) for projects using the StopWaste.Org Small Commercial or Bay Friendly Basic Landscape Checklist.</p> <p><i>Prior to issuance of a demolition, grading, or building permit</i></p> <p>The applicant shall comply with the requirements of the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the Green Building Ordinance, OMC Chapter 18.02.</p> <p>a) The following information shall be submitted to the Building Services Division for review and approval with the application for a Building permit:</p> <ol style="list-style-type: none"> <li>Documentation showing compliance with the most recent Title 24 California Building Energy Efficiency Standards.</li> <li>Completed copy of the final green building checklist approved during the review of the Planning and Zoning permit.</li> <li>Permit plans that show in general notes, detailed design drawings, and specifications as necessary, compliance with the items listed in subsection (b) below.</li> <li>Other documentation to prove compliance.</li> </ol> | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts  | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|--|----------------------------------|--|--|
| SCA GHG-1b <i>Continued</i>  |                                  | <p>b) The set of plans in subsection (a) shall demonstrate compliance with the following:</p> <ul style="list-style-type: none"> <li>i. CALGreen mandatory measures.</li> <li>ii. All applicable green building measures identified on the StopWaste.Org checklist and Bay Friendly Basic Landscape Checklist approved during the review of a Planning and Zoning permit, or submittal of a Request for Revision Plan-check application that shows the previously approved points that will be eliminated or substituted.</li> </ul> <p><i>During construction</i></p> <p>The applicant shall comply with the applicable requirements of CALGreen and Green Building Ordinance, Chapter 18.02 for projects using the StopWaste.Org Small Commercial and Bay Friendly Basic Landscape Checklist.</p> <p>a) The following information shall be submitted to the Building Inspections Division for review and approval:</p> <ul style="list-style-type: none"> <li>i. Completed copy of the green building checklists approved during review of the Planning and Zoning permit and during the review of the Building permit.</li> <li>ii. Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.</li> </ul> |  |
| <i>No significant impacts associated with greenhouse gas emissions would occur with implementation of the City Standard Conditions of Approval listed in this table.</i> | LTS                              | <p><b>SCA GHG-2: Waste Reduction and Recycling.</b> The project applicant will submit a Construction &amp; Demolition Waste Reduction and Recycling Plan (WRRP) and an Operational Diversion Plan (ODP) for review and approval by the Public Works Agency.</p> <p><i>Prior to issuance of demolition, grading, or building permit</i></p> <p>Chapter 15.34 of the Oakland Municipal Code outlines requirements for reducing waste and optimizing construction and demolition (C&amp;D) recycling. Affected projects include all new construction, renovations/alterations/modifications with construction values of \$50,000 or more (except R-3), and all demolition (including soft demo). The WRRP must specify the methods by which the development will divert C&amp;D debris waste generated by the proposed project from landfill disposal in accordance with current City requirements. Current standards, FAQs, and forms are available at <a href="http://www.oaklandpw.com/Page39.aspx">www.oaklandpw.com/Page39.aspx</a> or in the Green Building Resource Center. After approval of the plan, the project applicant shall implement the plan.</p>  | LTS  |

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|--|----------------------------------|---|--|
| SCA GHG-2 <i>Continued</i>   |                                  | <p><i>Ongoing</i></p> <p>The ODP will identify how the project complies with the Recycling Space Allocation Ordinance, (Chapter 17.118 of the Oakland Municipal Code), including capacity calculations, and specify the methods by which the development will meet the current diversion of solid waste generated by operation of the proposed project from landfill disposal in accordance with current City requirements. The proposed program shall be implemented and maintained for the duration of the proposed activity or facility. Changes to the plan may be re-submitted to the Environmental Services Division of the Public Works Agency for review and approval. Any incentive programs shall remain fully operational as long as residents and businesses exist at the project site.</p>   |  |
| <i>No significant impacts associated with greenhouse gas emissions would occur with implementation of the City Standard Conditions of Approval listed in this table.</i> | LTS                              | <p><b>SCA GHG-3: Greenhouse Gas (GHG) Reduction Plan.</b></p> <p><i>Prior to issuance of a construction-related permit and ongoing as specified</i></p> <p>The project applicant shall retain a qualified air quality consultant to develop a Greenhouse Gas (GHG) Reduction Plan for City review and approval. The applicant shall implement the approved GHG Reduction Plan.</p> <p>The goal of the GHG Reduction Plan shall be to increase energy efficiency and reduce GHG emissions to below <u>at least one</u> of the Bay Area Quality Management District's (BAAQMD's) CEQA Thresholds of Significance (1,100 metric tons of CO<sub>2</sub>e per year or 4.6 metric tons of CO<sub>2</sub>e per year per service population) to help achieve the City's goal of reducing GHG emissions. The GHG Reduction Plan shall include, at a minimum, (a) a detailed GHG emissions inventory for the project under a "business-as-usual" scenario with no consideration of project design features, or other energy efficiencies, (b) an "adjusted" baseline GHG emissions inventory for the project, taking into consideration energy efficiencies included as part of the project (including the City's Standard Conditions of Approval, proposed mitigation measures, project design features, and other City requirements), (c) a comprehensive set of quantified <u>additional</u> GHG reduction measures available to further reduce GHG emissions beyond the adjusted GHG emissions, and (d) requirements for ongoing monitoring and reporting to demonstrate that the additional GHG reduction measures are being implemented. If the project is to be constructed in phases, the GHG Reduction Plan shall provide GHG emission scenarios by phase.</p> | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

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|----------------------------|----------------------------------|---|--|
| SCA GHG-3 <i>Continued</i> |                                  | <p>Specifically, the applicant/sponsor shall adhere to the following:</p> <p>a) <b>GHG Reduction Measures Program.</b> Prepare and submit to the City Planning Director or his/her designee for review and approval a GHG Reduction Plan that specifies and quantifies GHG reduction measures that the project will implement by phase.</p> <p>Potential GHG reduction measures to be considered include, but are not be limited to, measures recommended in BAAQMD's latest CEQA Air Quality Guidelines, the California Air Resources Board Scoping Plan (December 2008, as may be revised), the California Air Pollution Control Officers Association (CAPCOA) Quantifying Greenhouse Gas Mitigation Measures Document (August 2010, as may be revised), the California Attorney General's website, and Reference Guides on Leadership in Energy and Environmental Design (LEED) published by the U.S. Green Building Council.</p> <p>The proposed GHG reduction measures must be reviewed and approved by the City Planning Director or his/her designee. The types of allowable GHG reduction measures include the following (listed in order of City preference): (1) physical design features; (2) operational features; and (3) the payment of fees to fund GHG-reducing programs (i.e., the purchase of "offset carbon credits," pursuant to item "b" below).</p> <p>The allowable locations of the GHG reduction measures include the following (listed in order of City preference): (1) the project site; (2) off-site within the City of Oakland; (3) off-site within the San Francisco Bay Area Air Basin; (4) off-site within the State of California; then (5) elsewhere in the United States.</p> |  |



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| SCA GHG-3 <i>Continued</i> |                                  | <p>b) <b>Offset Carbon Credits Guidelines.</b> For GHG reduction measures involving the purchase of offset carbon credits, evidence of the payment/purchase shall be submitted to the City Planning Director or his/her designee for review and approval prior to completion of the project (or prior to completion of the project phase, if the project includes more one phase).</p> <p>As with preferred locations for the implementation of all GHG reductions measures, the preference for offset carbon credit purchases include those that can be achieved as follows (listed in order of City preference): (1) within the City of Oakland; (2) within the San Francisco Bay Area Air Basin; (3) within the State of California; then (4) elsewhere in the United States. The cost of offset carbon credit purchases shall be based on current market value at the time purchased and shall be based on the Project's operational emissions estimated in the GHG Reduction Plan or subsequent approved emissions inventory, which may result in emissions that are higher or lower than those estimated in the GHG Reduction Plan.</p> <p>c) <b>Plan Implementation and Documentation.</b> For physical GHG reduction measures to be incorporated into the design of the project, the measures shall be included on the drawings submitted for construction-related permits. For operational GHG reduction measures to be incorporated into the project, the measures shall be implemented on an indefinite and ongoing basis beginning at the time of project completion (or at the completion of the project phase for phased projects).</p> <p>For physical GHG reduction measures to be incorporated into off-site projects, the measures shall be included on drawings and submitted to the City Planning Director or his/her designee for review and approval and then installed prior to completion of the subject project (or prior to completion of the project phase for phased projects). For operational GHG reduction measures to be incorporated into off-site projects, the measures shall be implemented on an indefinite and ongoing basis beginning at the time of completion of the subject project (or at the completion of the project phase for phased projects).</p> |  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

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| SCA GHG-3 <i>Continued</i> |                                  | <p>d) <b>Compliance, Monitoring and Reporting.</b> Upon City review and approval of the GHG Reduction Plan program by phase, the applicant/sponsor shall satisfy the following requirements for ongoing monitoring and reporting to demonstrate that the additional GHG reduction measures are being implemented. The GHG Reduction Plan requires regular periodic evaluation over the life of the Project (generally estimated to be at least 40 years) to determine how the Plan is achieving required GHG emissions reductions over time, as well as the efficacy of the specific additional GHG reduction measures identified in the Plan.</p> <p>Implementation of the GHG reduction measures and related requirements shall be ensured through the project applicant/sponsor's compliance with Conditions of Approval adopted for the project. Generally, starting two years after the City issues the first Certificate of Occupancy for the project, the project applicant/sponsor shall prepare each year of the useful life of the project an Annual GHG Emissions Reduction Report (Annual Report), subject to the City Planning Director or his/her designee for review and approval. The Annual Report shall be submitted to an independent reviewer of the City Planning Director's or his/her designee's choosing, to be paid for by the project applicant/sponsor (see Funding, below), within two months of the anniversary of the Certificate of Occupancy.</p> <p>The Annual Report shall summarize the project's implementation of GHG reduction measures over the preceding year, intended upcoming changes, compliance with the conditions of the Plan, and include a brief summary of the previous year's Annual Report results (starting the second year). The Annual Report shall include a comparison of annual project emissions to the baseline emissions reported in the GHG Plan.</p> <p>The GHG Reduction Plan shall be considered fully attained when project emissions are less than either applicable numeric BAAQMD CEQA Thresholds, as confirmed by the City Planning Director or his/her designee through an established monitoring program. Monitoring and reporting activities will continue at the City's discretion, as discussed below.</p> |  |

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| SCA GHG-3 <i>Continued</i> |                                  | <p>e) <b>Funding.</b> Within two months after the Certificate of Occupancy, the project applicant/sponsor shall fund an escrow-type account or endowment fund to be used exclusively for preparation of Annual Reports and review and evaluation by the City Planning Director or his/her designee, or its selected peer reviewers. The escrow-type account shall be initially funded by the project applicant/sponsor in an amount determined by the City Planning Director or his/her designee and shall be replenished by the project applicant/sponsor so that the amount does not fall below an amount determined by the City Planning Director or his/her designee. The mechanism of this account shall be mutually agreed upon by the project applicant/sponsor and the City Planning Director or his/her designee, including the ability of the City to access the funds if the project applicant/sponsor is not complying with the GHG Reduction Plan requirements, and/or to reimburse the City for its monitoring and enforcement costs.</p> <p>f) <b>Corrective Procedure.</b> If the third Annual Report, or any report thereafter, indicates that, in spite of the implementation of the GHG Reduction Plan, the project is not achieving the GHG reduction goal, the project applicant/sponsor shall prepare a report for City review and approval, which proposes additional or revised GHG measures to better achieve the GHG emissions reduction goals, including without limitation, a discussion on the feasibility and effectiveness of the menu of other additional measures (Corrective GHG Action Plan). The project applicant/sponsor shall then implement the approved Corrective GHG Action Plan.</p> <p>If, one year after the Corrective GHG Action Plan is implemented, the required GHG emissions reduction target is still not being achieved, or if the project applicant/owner fails to submit a report at the times described above, or if the reports do not meet City requirements outlined above, the City Planning Director or his/her designee may, in addition to its other remedies, (a) assess the project applicant/sponsor a financial penalty based upon actual percentage reduction in GHG emissions as compared to the percent reduction in GHG emissions established in the</p> |  |

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| SCA GHG-3 <i>Continued</i> |                                  | <p>GHG Reduction Plan; or (b) refer the matter to the City Planning Commission for scheduling of a compliance hearing to determine whether the project's approvals should be revoked, altered or additional conditions of approval imposed.</p> <p>The penalty as described in (a) above shall be determined by the City Planning Director or his/her designee and be commensurate with the percentage GHG emissions reduction not achieved (compared to the applicable numeric significance thresholds) or required percentage reduction from the "adjusted" baseline.</p> <p>In determining whether a financial penalty or other remedy is appropriate, the City shall not impose a penalty if the project applicant/sponsor has made a good faith effort to comply with the GHG Reduction Plan.</p> <p>The City would only have the ability to impose a monetary penalty after a reasonable cure period and in accordance with the enforcement process outlined in Planning Code Chapter 17.152. If a financial penalty is imposed, such penalty sums shall be used by the City solely toward the implementation of the GHG Reduction Plan.</p> <p>g) <b>Timeline Discretion and Summary.</b> The City Planning Director or his/her designee shall have the discretion to reasonably modify the timing of reporting, with reasonable notice and opportunity to comment by the applicant, to coincide with other related monitoring and reporting required for the project.</p> <ul style="list-style-type: none"> <li>o <i>Fund Escrow-type Account for City Review:</i> Certificate of Occupancy plus 2 months.</li> <li>o <i>Submit Baseline Inventory of "Actual Adjusted Emissions":</i> Certificate of Occupancy plus 1 year.</li> <li>o <i>Submit Annual Report #1:</i> Certificate of Occupancy plus 2 years.</li> <li>o <i>Submit Corrective GHG Action Plan</i> (if needed): Certificate of Occupancy plus 4 years (based on findings of Annual Report #3).</li> <li>o <i>Post Attainment Annual Reports:</i> Minimum every 3 years and at the City Planning Director's or his/her designee's reasonable discretion.</li> </ul> |  |

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|--|----------------------------------|---|--|
| <b>G. NOISE</b><br><i>No significant construction period noise or vibration impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA NOI-1: Days/Hours of Construction Operation.</b> <i>Ongoing throughout demolition, grading, and/or construction.</i></p> <p>The project applicant shall require construction contractors to limit standard construction activities as follows:</p> <ul style="list-style-type: none"> <li>a) Construction activities are limited to between 7:00 a.m. and 7:00 p.m. Monday through Saturday, except that pile driving and/or other extreme noise generating activities greater than 90 dBA shall be limited to between 8:00 a.m. and 4:00 p.m. Monday through Friday.</li> <li>b) Any construction activity proposed to occur outside of the standard hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case by case basis, with criteria including the proximity of residential uses and a consideration of resident's preferences for whether the activity is acceptable if the overall duration of construction is shortened and such construction activities shall only be allowed with the prior written authorization of the Building Services Division.</li> <li>c) Construction activity shall not occur on Saturdays, with the following possible exceptions: <ul style="list-style-type: none"> <li>i. Prior to the building being enclosed, requests for Saturday construction for special activities (such as concrete pouring which may require more continuous amounts of time), shall be evaluated on a case by case basis, with criteria including the proximity of residential uses and a consideration of resident's preferences for whether the activity is acceptable if the overall duration of construction is shortened. Such construction activities shall only be allowed on Saturdays with the prior written authorization of the Building Services Division.</li> <li>ii. After the building is enclosed, requests for Saturday construction activities shall only be allowed on Saturdays with the prior written authorization of the Building Services Division, and only then within the interior of the building with the doors and windows closed.</li> </ul> </li> </ul> | LTS  |

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|---|----------------------------------|--|--|
| SCA NOI-1 <i>Continued</i>  |                                  | <ul style="list-style-type: none"> <li>d) No extreme noise generating activities (greater than 90 dBA) shall be allowed on Saturdays, with no exceptions.</li> <li>e) No construction activity shall take place on Sundays or Federal holidays.</li> <li>f) Construction activities include but are not limited to: truck idling, moving equipment (including trucks, elevators, etc.) or materials, deliveries, and construction meetings held on-site in a non-enclosed area.</li> <li>g) Applicant shall use temporary power poles instead of generators where feasible.</li> </ul>   |  |
| <i>No significant construction period noise or vibration impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA NOI-2: Noise Control.</b> <i>Ongoing throughout demolition, grading, and/or construction.</i></p> <p>To reduce noise impacts due to construction, the project applicant shall require construction contractors to implement a site-specific noise reduction program, subject to the Planning and Zoning Division and the Building Services Division review and approval, which includes the following measures:</p> <ul style="list-style-type: none"> <li>a) Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible).</li> <li>b) Except as provided herein, Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are commercially available and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.</li> <li>c) Stationary noise sources shall be located as far from adjacent receptors as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the City to provide equivalent noise reduction.</li> </ul> | LTS  |

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|---|----------------------------------|--|--|
| SCA NOI-2 <i>Continued</i>  |                                  | <p>d) The noisiest phases of construction shall be limited to less than 10 days at a time. Exceptions may be allowed if the City determines an extension is necessary and all available noise reduction controls are implemented.</p> <p>e) <b>Temporary Noise Barrier.</b> To further implement SCA NOI-2, during all construction activities, a 15-foot-high temporary noise barrier shall be placed between the proposed construction site and receptor locations. The noise barrier shall require a maximum 10-foot return on each end and be oriented 45 degrees into the construction site. The temporary noise barrier could be constructed of a sound blanket system hung on scaffolding to achieve a minimum height and to allow the system to be moved or adjusted if necessary. An alternative temporary noise barrier design could consist of plywood installed on top of a portable concrete K-Rail system that also allows the ability to move or adjust the wall location.</p>  |  |
| <i>No significant construction period noise or vibration impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA NOI-3: Noise Complaint Procedures.</b> <i>Ongoing throughout demolition, grading, and/or construction.</i></p> <p>Prior to the issuance of each building permit, along with the submission of construction documents, the project applicant shall submit to the Building Services Division a list of measures to respond to and track complaints pertaining to construction noise. These measures shall include:</p> <p>a) A procedure and phone numbers for notifying the Building Services Division staff and Oakland Police Department; (during regular construction hours and off-hours);</p> <p>b) A sign posted on-site pertaining with permitted construction days and hours and complaint procedures and who to notify in the event of a problem. The sign shall also include a listing of both the City and construction contractor's telephone numbers (during regular construction hours and off-hours);</p> <p>c) The designation of an on-site construction complaint and enforcement manager for the project;</p> <p>d) Notification of neighbors and occupants within 300 feet of the project construction area at least 30 days in advance of extreme noise generating activities about the estimated duration of the activity; and</p> <p>e) A preconstruction meeting shall be held with the job inspectors and the general contractor/on-site project manager to confirm that noise measures and practices (including construction hours, neighborhood notification, posted signs, etc.) are completed.</p> | LTS  |

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| Environmental Impacts   | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)  | Level of Significance With MM, SCA or Recommendation |
|---|----------------------------------|---|--|
| <i>No significant interior noise impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA NOI-4: Interior Noise.</b> <i>Prior to issuance of a building permit and Certificate of Occupancy.</i></p> <p>If necessary to comply with the interior noise requirements of the City of Oakland's General Plan Noise Element and achieve an acceptable interior noise level, noise reduction in the form of sound-rated assemblies (i.e., windows, exterior doors, and walls), and/or other appropriate features/measures, shall be incorporated into project building design, based upon recommendations of a qualified acoustical engineer and submitted to the Building Services Division for review and approval prior to issuance of building permit. Final recommendations for sound-rated assemblies, and/or other appropriate features/measures, will depend on the specific building designs and layout of buildings on the site and shall be determined during the design phases. Written confirmation by the acoustical consultant, HVAC or HERS specialist, shall be submitted for City review and approval, prior to Certificate of Occupancy (or equivalent) that:</p> <ul style="list-style-type: none"> <li>a) Quality control was exercised during construction to ensure all air-gaps and penetrations of the building shell are controlled and sealed; and</li> <li>b) Demonstrates compliance with interior noise standards based upon performance testing of a sample unit.</li> <li>c) Inclusion of a Statement of Disclosure Notice in the CC&amp;Rs on the lease or title to all new tenants or owners of the units acknowledging the noise generating activity and the single event noise occurrences. Potential features/measures to reduce interior noise could include, but are not limited to, the following: <ul style="list-style-type: none"> <li>i. Installation of an alternative form of ventilation in all units identified in the acoustical analysis as not being able to meet the interior noise requirements due to adjacency to a noise generating activity, filtration of ambient make-up air in each unit and analysis of ventilation noise if ventilation is included in the recommendations by the acoustical analysis.</li> <li>ii. Prohibition of Z-duct construction.</li> </ul> </li> </ul> | LTS  |



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|--|----------------------------------|---|--|
| <i>No significant operational noise impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA NOI-5: Operational Noise-General.</b> <i>Ongoing.</i></p> <p>Noise levels from the activity, property, or any mechanical equipment on site shall comply with the performance standards of Section 17.120 of the Oakland Planning Code and Section 8.18 of the Oakland Municipal Code. If noise levels exceed these standards, the activity causing the noise shall be abated until appropriate noise reduction measures have been installed and compliance verified by the Planning and Zoning Division and Building Services.</p>  | LTS  |
| <i>No significant extreme noise impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i>     | LTS                              | <p><b>SCA NOI-6: Pile Driving and Other Extreme Noise Generators.</b> <i>Ongoing throughout demolition, grading, and/or construction.</i></p> <p>To further reduce potential pier drilling, pile driving and/or other extreme noise generating construction impacts greater than 90 dBA, a set of site-specific noise attenuation measures shall be completed under the supervision of a qualified acoustical consultant. Prior to commencing construction, a plan for such measures shall be submitted for review and approval by the Planning and Zoning Division and the Building Services Division to ensure that maximum feasible noise attenuation will be achieved. This plan shall be based on the final design of the project. A third-party peer review, paid for by the project applicant, may be required to assist the City in evaluating the feasibility and effectiveness of the noise reduction plan submitted by the project applicant. The criterion for approving the plan shall be a determination that maximum feasible noise attenuation will be achieved. A special inspection deposit is required to ensure compliance with the noise reduction plan. The amount of the deposit shall be determined by the Building Official, and the deposit shall be submitted by the project applicant concurrent with submittal of the noise reduction plan. The noise reduction plan shall include, but not be limited to, an evaluation of implementing the following measures. These attenuation measures shall include as many of the following control strategies as applicable to the site and construction activity:</p> | LTS  |

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|--|----------------------------------|--|--|
| SCA NOI-6 <i>Continued</i>   |                                  | <ul style="list-style-type: none"> <li>a) Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings;</li> <li>b) Implement “quiet” pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions;</li> <li>c) Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site;</li> <li>d) Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example and implement such measure if such measures are feasible and would noticeably reduce noise impacts; and</li> <li>e) Monitor the effectiveness of noise attenuation measures by taking noise measurements.</li> </ul>  |  |
| <i>No significant vibration impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA NOI-7: Vibration Impacts on Adjacent Historic Structures or Vibration-Sensitive Activities.</b> <i>Vibration analysis required prior to issuance of a demolition, grading or building permit</i></p> <p>The project applicant shall submit a Vibration Analysis prepared by an acoustical and/or structural engineer or other appropriate qualified professional for City review and approval that establishes pre-construction baseline conditions and threshold levels of vibration that could damage the structure and/or substantially interfere with activities located at hospital and A/B Wing. The Vibration Analysis shall identify design means and methods of construction that shall be used in order to not exceed the thresholds. The applicant shall implement the recommendations during construction.</p> <p>To further implement Standard Condition of Approval NOI-7:</p> <ul style="list-style-type: none"> <li>a) The FTA’s established groundborne vibration impact criteria for Category I and Category II land uses for infrequent events should not be exceeded.</li> </ul> | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts      | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|----------------------------|----------------------------------|--|--|
| SCA NOI-7 <i>Continued</i> |                                  | <p>b) The applicant shall retain an historic preservation architect (who meets the Secretary of the Interior’s Standards and Guidelines for Historic Preservation Professional Qualifications) and a structural engineer (Monitoring Team), who shall undertake an Existing Conditions Study (Study) of the A/B Wing. The purpose of the Study is to establish the baseline condition of the building prior to construction of the Project, including but not limited to the location and extent of any visible cracks or spalls on the building. The Study shall be reviewed and approved by the City of Oakland’s Deputy Director and Building Official.</p> <p>c) Initial construction activities shall be monitored by the Monitoring Team and if vibrations are above threshold levels, appropriate measures shall be taken to reduce vibrations to below established levels. The Monitoring Team shall continue to regularly monitor the buildings during construction and report any changes to the existing conditions, including but not limited to, expansion of cracks, new spalls, or other exterior deterioration. If there are such changes, appropriate corrective measures shall be taken to reduce vibrations to below established levels, or other measures taken to prevent damage to the building.</p> <p>d) Written monitoring reports shall be submitted to the City’s Deputy Director and Building Official on a periodic basis as determined by the Monitoring Team. The structural engineer shall consult with the historic preservation architect, especially if any problems with character defining features of a historic resource are discovered. If in the opinion of the structural engineer, in consultation with the historic preservation architect, substantial adverse impacts to historic resources related to construction activities are found during construction, the Monitoring Team shall immediately inform, both orally and in writing, the project sponsor and/or the project sponsor’s designated representative responsible for construction activities and the City Planning and Zoning Division. The project sponsor shall follow the Monitoring Team’s recommendations for corrective measures, including halting construction activities in situations where further construction work would damage historic resources, or taking other measures to protect the building. The historic preservation architect shall establish the frequency of monitoring and reporting prior to the issuance of a demolition, grading, or building permit.</p> |  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts  | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|--|----------------------------------|--|--|
| SCA NOI-7 <i>Continued</i>                                       |                                  | e) The historic preservation architect shall establish a training program for construction workers involved in the project that emphasizes the importance of protecting historic resources. The program shall include directions on how to exercise care when working around and operating equipment near historic structures, including storage of materials away from historic buildings. A provision for establishing this training program shall be included in the construction contract, and the contract provisions shall be reviewed and approved by the City of Oakland.  |  |
| <b>NON CEQA REQUIRED RECOMMENDED PROJECT SPECIFIC CONDITIONS</b> |                                  | <p><b>Recommendation NOI-1:</b> The following multipart measure is recommended for implementation by CHRCO prior to operation of the replacement helistop under Phase 2 of the project:</p> <ul style="list-style-type: none"> <li>• CHRCO shall offer to provide forced air ventilation or an air conditioning unit and sound-insulating windows for the residence located at 720 52<sup>nd</sup> Street so that windows may remain closed for prolonged periods.</li> <li>• A log of helicopter activity shall be maintained which shall include a detailed record of the date and time of arrival and departure.</li> <li>• CHRCO shall develop a protocol to respond to noise complaints about helicopter over flight and submit that protocol to City staff prior to certification of the helistop.</li> <li>• CHRCO shall coordinate with FAA to request a waiver to allow mufflers or other sound reducing equipment on helicopters.</li> </ul> | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

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|---|----------------------------------|--|--|
| <b>H. GEOLOGY AND SOILS</b>   |                                  |  |  |
| No significant soil, geology, and seismicity impacts would occur with implementation of the City Standard Condition of Approval listed in this table. | LTS                              | <p><b>SCA GEO-1: Erosion and Sedimentation Control Plan.</b> <i>Applies to all projects requiring a Grading Permit. Prior to any grading activities:</i></p> <ul style="list-style-type: none"> <li>The project applicant shall obtain a grading permit. The grading permit application shall include an erosion and sedimentation control plan for review and approval by the Building Services Division. The erosion and sedimentation control plan shall include all necessary measures to be taken to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to lands of adjacent property owners, public streets, or to creeks as a result of conditions created by grading operations. The plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and stormwater retention basins. Off-site work by the project applicant may be necessary. The project applicant shall obtain permission or easements necessary for off-site work. There shall be a clear notation that the plan is subject to changes as changing conditions occur. Calculations of anticipated stormwater runoff and sediment volumes shall be included, if required by the Director of Development or designee. The plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the project applicant shall clear the system of any debris or sediment.</li> </ul> <p><i>Ongoing throughout grading and construction activities:</i></p> <p>The project applicant shall implement the approved erosion and sedimentation plan. No grading shall occur during the wet weather season (October 15 through April 15) unless specifically authorized in writing by the Building Services Division.</p> | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts   | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)  | Level of Significance With MM, SCA or Recommendation |
|---|----------------------------------|---|--|
| <p><i>No significant soil, geology, and seismicity impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i></p> | <p>LTS</p>                       | <p><b>SCA GEO-2: Soils Report.</b> Required as part of the submittal of a Tentative Tract or Tentative Parcel Map.</p> <p>A preliminary soils report for each construction site within the project area shall be required as part of this project and submitted for review and approval by the Building Services Division. The soils reports shall be based, at least in part, on information obtained from on-site testing. Specifically the minimum contents of the report should include:</p> <ul style="list-style-type: none"> <li>• Logs of borings and/or profiles of test pits and trenches: <ul style="list-style-type: none"> <li>○ The minimum number of borings acceptable, when not used in combination with test pits or trenches, shall be two (2), when in the opinion of the Soils Engineer such borings shall be sufficient to establish a soils profile suitable for the design of all the footings, foundations, and retaining structures.</li> <li>○ The depth of each boring shall be sufficient to provide adequate design criteria for all proposed structures.</li> <li>○ All boring logs shall be included in the soils report.</li> </ul> </li> <li>• Test pits and trenches <ul style="list-style-type: none"> <li>○ Test pits and trenches shall be of sufficient length and depth to establish a suitable soils profile for the design of all proposed structures.</li> <li>○ Soils profiles of all test pits and trenches shall be included in the soils report.</li> </ul> </li> <li>• A plat shall be included which shows the relationship of all the borings, test pits, and trenches to the exterior boundary of the site. The plat shall also show the location of all proposed site improvements. All proposed improvements shall be labeled.</li> <li>• Copies of all data generated by the field and/or laboratory testing to determine allowable soil bearing pressures, sheer strength, active and passive pressures, maximum allowable slopes where applicable and any other information which may be required for the proper design of foundations, retaining walls, and other structures to be erected subsequent to or concurrent with work done under the grading permit.</li> </ul> | <p>LTS</p>   |

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| Environmental Impacts      | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|----------------------------|----------------------------------|--|--|
| SCA GEO-2 <i>Continued</i> |                                  | <ul style="list-style-type: none"> <li>• Soils Report. A written report shall be submitted which shall include, but is not limited to, the following: <ul style="list-style-type: none"> <li>○ Site description;</li> <li>○ Local and site geology;</li> <li>○ Review of previous field and laboratory investigations for the site;</li> <li>○ Review of information on or in the vicinity of the site on file at the Information Counter, City of Oakland, Office of Planning and Building;</li> <li>○ Site stability shall be addressed with particular attention to existing conditions and proposed corrective actions at locations where land stability problems exist;</li> <li>○ Conclusions and recommendations for foundations and retaining structures, resistance to lateral loading, slopes, and specifications, for fills, and pavement design as required;</li> <li>○ Conclusions and recommendations for temporary and permanent erosion control and drainage. If not provided in a separate report they shall be appended to the required soils report;</li> <li>○ All other items which a Soils Engineer deems necessary;</li> <li>○ The signature and registration number of the Civil Engineer preparing the report.</li> </ul> </li> <li>• The Director of Planning and Building may reject a report that she/he believes is not sufficient. The Director of Planning and Building may refuse to accept a soils report if the certification date of the responsible soils engineer on said document is more than three years old. In this instance , the Director may be require that the old soils report be recertified, that an addendum to the soils report be submitted, or that a new soils report be provided.</li> </ul> |  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts   | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|---|----------------------------------|--|--|
| <p><i>No significant soil, geology, and seismicity impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i></p> | <p>LTS</p>                       | <p><b>SCA GEO-3: Geotechnical Report.</b> <i>Required as part of the submittal of a tentative Tract Map or tentative Parcel Map.</i></p> <ul style="list-style-type: none"> <li>A site-specific, design level, landslide or liquefaction geotechnical investigation for each construction site within the project area shall be required as part of this project and submitted for review and approval to the Building Services Division. Specifically: <ul style="list-style-type: none"> <li>Each investigation shall include an analysis of expected ground motions at the site from identified faults. The analyses shall be accordance with applicable City ordinances and polices, and consistent with the most recent version of the California Building Code, which requires structural design that can accommodate ground accelerations expected from identified faults.</li> <li>The investigations shall determine final design parameters for the walls, foundations, foundation slabs, surrounding related improvements, and infrastructure (utilities, roadways, parking lots, and sidewalks).</li> <li>The investigations shall be reviewed and approved by a registered geotechnical engineer. All recommendations by the project engineer, geotechnical engineer, shall be included in the final design, as approved by the City of Oakland.</li> <li>The geotechnical report shall include a map prepared by a land surveyor or civil engineer that shows all field work and location of the “No Build” zone. The map shall include a statement that the locations and limitations of the geologic features are accurate representations of said features as they exist on the ground, were placed on this map by the surveyor, the civil engineer or under their supervision, and are accurate to the best of their knowledge.</li> <li>Recommendations that are applicable to foundation design, earthwork, and site preparation that were prepared prior to or during the project’s design phase, shall be incorporated in the project.</li> <li>Final seismic considerations for the site shall be submitted to and approved by the City of Oakland Building Services Division prior to commencement of the project.</li> <li>A peer review is required for the Geotechnical Report. Personnel reviewing the geologic report shall approve the report, reject it, or withhold approval pending the submission by the applicant or subdivider of further geologic and engineering studies to more adequately define active fault traces.</li> </ul> </li> </ul> | <p>LTS</p>   |



**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts   | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|---|----------------------------------|--|--|
| <b>I. HYDROLOGY AND WATER QUALITY</b>   |                                  |  |  |
| <i>No significant construction-period hydrology or water quality impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA HYD-1: Stormwater Pollution Prevention Plan (SWPPP).</b> <i>Prior to and ongoing throughout demolition, grading, and/or construction activities.</i></p> <p>The project applicant must obtain coverage under the General Construction Activity Storm Water Permit issued by the SWRCB. The project applicant must file a notice of intent (NOI) with the SWRCB. The project applicant will be required to prepare a stormwater pollution prevention plan (SWPPP) and submit the plan for review and approval by the Planning and Zoning Division and the Building Services Division. At a minimum, the SWPPP shall include: a description of construction materials, practices, and equipment storage and maintenance; a list of pollutants likely to contact stormwater; site-specific erosion and sedimentation control practices; a list of provisions to eliminate or reduce discharge of materials to stormwater; Best Management Practices (BMPs), and an inspection and monitoring program. Prior to the issuance of any construction-related permits, the project applicant shall submit a copy of the SWPPP and evidence of approval of the SWPPP by the SWRCB to the Building Services Division. Implementation of the SWPPP shall start with the commencement of construction and continue through the completion of the project. After construction is completed, the project applicant shall submit a notice of termination to the SWRCB.</p> | LTS  |
| <i>No significant operation-period hydrology or water quality impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i>    | LTS                              | <p><b>SCA HYD-2: Post-Construction Stormwater Pollution Management Plan.</b> <i>Prior to issuance of building permit (or other construction-related permit).</i></p> <p>The applicant shall comply with the requirements of Provision C.3 of the National Pollutant Discharge Elimination System (NPDES) permit issued to the Alameda Countywide Clean Water Program. The applicant shall submit with the application for a building permit (or other construction-related permit) a completed Construction-Permit-Phase Stormwater Supplemental Form to the Building Services Division. The project drawings submitted for the building permit (or other construction-related permit) shall contain a stormwater management plan, for review and approval by the City, to manage stormwater run-off and to limit the discharge of pollutants in stormwater after construction of the project to the maximum extent practicable.</p> <ul style="list-style-type: none"> <li>The post-construction stormwater management plan shall include and identify the following: <ul style="list-style-type: none"> <li>All proposed impervious surface on the site;</li> <li>Anticipated directional flows of on-site stormwater runoff; and</li> </ul> </li> </ul>   | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

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|----------------------------|----------------------------------|--|--|
| SCA HYD-2 <i>Continued</i> |                                  | <ul style="list-style-type: none"> <li>○ Site design measures to reduce the amount of impervious surface area and directly connected impervious surfaces; and</li> <li>○ Source control measures to limit the potential for stormwater pollution; and</li> <li>○ Stormwater treatment measures to remove pollutants from stormwater runoff.</li> <li>• The following additional information shall be submitted with the post-construction stormwater pollution management plan:               <ul style="list-style-type: none"> <li>○ Detailed hydraulic sizing calculations for each stormwater treatment measure proposed; and</li> <li>○ Pollutant removal information demonstrating that any proposed manufactured/mechanical (i.e., non-landscape-based) stormwater treatment measure, when not used in combination with a landscape-based treatment measure, is capable of removing the range of pollutants typically removed by landscape-based treatment measures.</li> </ul> </li> </ul> <p>All proposed stormwater treatment measures shall incorporate appropriate planting materials for stormwater treatment (for landscape-based treatment measures) and shall be designed with considerations for vector/mosquito control. Proposed planting materials for all proposed landscape-based stormwater treatment measures shall be included on the landscape and irrigation plan for the project. The applicant is not required to include on-site stormwater treatment measures in the post-construction stormwater pollution management plan if he or she secures approval from Planning and Zoning of a proposal that demonstrates compliance with the requirements of the City's Alternative Compliance Program.</p> <p>Prior to final permit inspection, the applicant shall implement the approved stormwater pollution management plan.</p> |  |

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| Environmental Impacts   | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)  | Level of Significance With MM, SCA or Recommendation |
|---|----------------------------------|---|--|
| <i>No significant hydrology or water quality impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i>   | LTS                              | <p><b>SCA HYD-3: Maintenance Agreement for Stormwater Treatment Measures.</b> <i>Prior to final zoning inspection.</i></p> <p>For projects incorporating stormwater treatment measures, the applicant shall enter into the “Standard City of Oakland Stormwater Treatment Measures Maintenance Agreement,” in accordance with Provision C.3.e of the NPDES permit, which provides, in part, for the following:</p> <ul style="list-style-type: none"> <li>• The applicant accepting responsibility for the adequate installation/construction, operation, maintenance, inspection, and reporting of any on-site stormwater treatment measures being incorporated into the project until the responsibility is legally transferred to another entity; and</li> <li>• Legal access to the on-site stormwater treatment measures for representatives of the City, the local vector control district, and staff of the Regional Water Quality Control Board, San Francisco Region, for the purpose of verifying the implementation, operation, and maintenance of the on-site stormwater treatment measures and to take corrective action if necessary. The agreement shall be recorded at the County Recorder’s Office at the applicant’s expense.</li> </ul>      | LTS  |
| <i>No significant hydrology or water quality impacts related to stormwater or sewer capacity would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA HYD-4: Stormwater and Sewer.</b> <i>Prior to completing the final design for the project’s sewer service.</i></p> <p>Confirmation of the capacity of the City’s surrounding stormwater and sanitary sewer system and state of repair shall be completed by a qualified civil engineer with funding from the project applicant. The project applicant shall be responsible for the necessary stormwater and sanitary sewer infrastructure improvements to accommodate the proposed project. In addition, the applicant shall be required to pay additional fees to improve sanitary sewer infrastructure if required by the Sewer and Stormwater Division. Improvements to the existing sanitary sewer collection system shall specifically include, but are not limited to, mechanisms to control or minimize increases in infiltration/inflow to offset sanitary sewer increases associated with the proposed project. To the maximum extent practicable, the applicant will be required to implement Best Management Practices to reduce the peak stormwater runoff from the project site. Additionally, the project applicant shall be responsible for payment of the required installation or hook-up fees to the affected service providers.</p> | LTS  |

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| <b>J. HAZARDS AND HAZARDOUS MATERIALS</b>   |                                  |   |  |
| <i>No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA HAZ-1: Hazards Best Management Practices.</b> <i>Prior to commencement of demolition, grading, or construction.</i> The project applicant and construction contractor shall ensure that construction of Best Management Practices (BMPs) are implemented as part of construction to minimize the potential negative effects to groundwater and soils. These shall include the following:</p> <ul style="list-style-type: none"> <li>Follow manufacturer's recommendations on use, storage, and disposal of chemical products used in construction;</li> <li>Avoid overtopping construction equipment fuel gas tanks;</li> <li>During routine maintenance of construction equipment, properly contain and remove grease and oils;</li> <li>Properly dispose of discarded containers of fuels and other chemicals.</li> <li>Ensure that construction would not have a significant impact on the environment or pose a substantial health risk to construction workers and the occupants of the proposed development. Soil sampling and chemical analyses of samples shall be performed to determine the extent of potential contamination beneath all USTs, elevator shafts, clarifiers, and subsurface hydraulic lifts when on-site demolition, or construction activities would potentially affect a particular development or building.</li> <li>If soil, groundwater or other environmental medium with suspected contamination is encountered unexpectedly during construction activities (e.g., identified by odor or visual staining, or if any underground storage tanks, abandoned drums or other hazardous materials or wastes are encountered), the applicant shall cease work in the vicinity of the suspect material, the area shall be secured as necessary, and the applicant shall take all appropriate measures to protect human health and the environment. Appropriate measures shall include notification of regulatory agency(ies) and implementation of the actions described in Standard Conditions of Approval, as necessary, to identify the nature and extent of contamination. Work shall not resume in the area(s) affected until the measures have been implemented under the oversight of the City or regulatory agency, as appropriate.</li> </ul> | LTS  |

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|---|----------------------------------|--|--|
| <i>No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA HAZ-2: Conformance with Other Requirements.</b> Prior to the issuance of a demolition, grading, P-job, or other construction related permit.</p> <p>a) The project applicant shall comply with all other applicable federal, state, regional and/or local laws/codes, requirements, regulations, and guidelines, including but not limited to those imposed by the City's Building Services Division, the City's Fire Marshal, and the City's Public Works Agency. Compliance with other applicable requirements may require changes to the approved use and/or plans.</p> <p>b) The applicant shall submit approved building plans for project-specific needs related to fire protection to the Fire Services Division for review and approval, including, but not limited to automatic extinguishing systems, water supply improvements and hydrants, fire department access, and vegetation management for preventing fires and soil erosion.</p> | LTS  |
| <i>No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA HAZ-3: Phase I and/or Phase II Reports.</b> <i>Prior to issuance of a demolition, grading, or building permit.</i> Prior to issuance of demolition, grading, or building permits the project applicant shall submit to the Fire Prevention Bureau, Hazardous Materials Unit, a Phase I environmental site assessment report, and a Phase II report if warranted by the Phase I report for the project site. The reports shall make recommendations for remedial action, if appropriate, and should be signed by a Registered Environmental Assessor, Professional Geologist, or Professional Engineer. The applicant shall implement the approved recommendations.</p>   | LTS  |
| <i>No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA HAZ-4: Lead-Based Paint/Coatings, Asbestos, or PCB Occurrence Assessment.</b> <i>Prior to issuance of any demolition, grading or building permit.</i> The project applicant shall submit a comprehensive assessment report to the Fire Prevention Bureau, Hazardous Materials Unit, signed by a qualified environmental professional, documenting the presence or lack thereof of asbestos-containing materials (ACM), lead-based paint, and any other building materials or stored materials classified as hazardous waste by state or federal law for review and approval.</p>   | LTS  |

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|---|----------------------------------|---|--|
| <i>No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA HAZ-5: Environmental Site Assessment Reports Remediation.</b> <i>Prior to issuance of a demolition, grading, or building permit.</i> If the environmental site assessment reports recommend remedial action, the project applicant shall:</p> <ul style="list-style-type: none"> <li>Consult with the appropriate local, state, and federal environmental regulatory agencies to ensure sufficient minimization of risk to human health and environmental resources, both during and after construction, posed by soil contamination, groundwater contamination, or other surface hazards including, but not limited to, underground storage tanks, fuel distribution lines, waste pits and sumps.</li> <li>Obtain and submit written evidence of approval for any remedial action if required by a local, state, or federal environmental regulatory agency.</li> <li>Submit a copy of all applicable documentation required by local, state, and federal environmental regulatory agencies, including but not limited to: permit applications, Phase I and II environmental site assessments, human health and ecological risk assessments, remedial action plans, risk management plans, soil management plans, and groundwater management plans.</li> </ul> | LTS  |
| <i>No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA HAZ-6: Lead-based Paint Remediation.</b> <i>Prior to issuance of any demolition, grading or building permit.</i> If lead-based paint is present, the project applicant shall submit specifications to the Fire Prevention Bureau, Hazardous Materials Unit signed by a certified Lead Supervisor, Project Monitor, or Project Designer for the stabilization and/or removal of the identified lead paint in accordance with all applicable laws and regulations, including but not necessarily limited to: Cal/OSHA's Construction Lead Standard, 8 CCR1532.1 and DHS regulation 17 CCR Sections 35001 through 36100, as may be amended.</p>  | LTS  |
| <i>No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA HAZ-7: Other Materials Classified as Hazardous Waste.</b> <i>Prior to issuance of any demolition, grading or building permit.</i> If other materials classified as hazardous waste by state or federal law are present, the project applicant shall submit written confirmation to Fire Prevention Bureau, Hazardous Materials Unit that all state and federal laws and regulations shall be followed when profiling, handling, treating, transporting and/or disposing of such materials.</p>  | LTS  |
| <i>No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA HAZ-8: Health and Safety Plan per Assessment.</b> <i>Prior to issuance of any demolition, grading or building permit.</i> If the required lead-based paint/coatings, asbestos, or PCB assessment finds presence of such materials, the project applicant shall create and implement a health and safety plan to protect workers from risks associated with hazardous materials during demolition, renovation of affected structures, and transport and disposal. The applicant shall implement the approved plan.</p>   | LTS  |

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| Environmental Impacts   | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)  | Level of Significance With MM, SCA or Recommendation |
|---|----------------------------------|---|--|
| <i>No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA HAZ-9: Best Management Practices for Soil and Groundwater Hazards.</b> <i>Ongoing throughout demolition, grading, and construction activities.</i> The project applicant shall implement all of the following Best Management Practices (BMPs) regarding potential soil and groundwater hazards.</p> <ul style="list-style-type: none"> <li>• Soil generated by construction activities shall be stockpiled onsite in a secure and safe manner. All contaminated soils determined to be hazardous or non-hazardous waste must be adequately profiled (sampled) prior to acceptable reuse or disposal at an appropriate off-site facility. Specific sampling and handling and transport procedures for reuse or disposal shall be in accordance with applicable local, state and federal agencies laws, in particular, the Regional Water Quality Control Board (RWQCB) and/or the Alameda County Department of Environmental Health (ACDEH) and policies of the City of Oakland.</li> <li>• Groundwater pumped from the subsurface shall be contained onsite in a secure and safe manner, prior to treatment and disposal, to ensure environmental and health issues are resolved pursuant to applicable laws and policies of the City of Oakland, the RWQCB and/or the ACDEH. Engineering controls shall be utilized, which include impermeable barriers to prohibit groundwater and vapor intrusion into the building (pursuant to the Standard Condition of Approval regarding Radon or Vapor Intrusion from Soil and Groundwater Sources.</li> <li>• Prior to issuance of any demolition, grading, or building permit, the applicant shall submit for review and approval by the City of Oakland, written verification that the appropriate federal, state or county oversight authorities, including but not limited to the RWQCB and/or the ACDEH, have granted all required clearances and confirmed that the all applicable standards, regulations and conditions for all previous contamination at the site. The applicant also shall provide evidence from the City's Fire Department, Office of Emergency Services, indicating compliance with the Standard Condition of Approval requiring a Site Review by the Fire Services Division pursuant to City Ordinance No. 12323, and compliance with the Standard Condition of Approval requiring a Phase I and/or Phase II Reports.</li> </ul> | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts   | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|---|----------------------------------|--|--|
| <i>No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <b>SCA HAZ-10: Radon or Vapor Intrusion from Soil or Groundwater Sources.</b> <i>Ongoing.</i> The project applicant shall submit documentation to determine whether radon or vapor intrusion from the groundwater and soil is located on-site as part of the Phase I documents. The Phase I analysis shall be submitted to the Fire Prevention Bureau, Hazardous Materials Unit, for review and approval, along with a Phase II report if warranted by the Phase I report for the project site. The reports shall make recommendations for remedial action, if appropriate, and should be signed by a Registered Environmental Assessor, Professional Geologist, or Professional Engineer. Applicant shall implement the approved recommendations.   | LTS  |
| <i>No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <b>SCA HAZ-11: Hazardous Materials Business Plan.</b> <i>Prior to issuance of a business license.</i> The project applicant shall submit a Hazardous Materials Business Plan for review and approval by Fire Prevention Bureau, Hazardous Materials Unit. Once approved this plan shall be kept on file with the City and will be updated as applicable. The purpose of the Hazardous Materials Business Plan is to ensure that employees are adequately trained to handle the materials and provides information to the Fire Services Division should emergency response be required. The Hazardous Materials Business Plan shall include the following: <ul style="list-style-type: none"> <li>The types of hazardous materials or chemicals stored and/or used on site, such as petroleum fuel products, lubricants, solvents, and cleaning fluids.</li> <li>The location of such hazardous materials.</li> <li>An emergency response plan including employee training information</li> <li>A plan that describes the manner in which these materials are handled, transported and disposed.</li> </ul> | LTS  |
| <i>No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <b>SCA HAZ-12: Fire Safety Phase Plan.</b> <i>Prior to issuance of a demolition, grading, and/or construction and concurrent with any p-job submittal permit.</i> The project applicant shall submit a separate fire safety phasing plan to the Planning and Zoning Division and Fire Services Division for their review and approval. The fire safety plan shall include all of the fire safety features incorporated into the project and the schedule for implementation of the features. Fire Services Division may require changes to the plan or may reject the plan if it does not adequately address fire hazards associated with the project as a whole or the individual phase.  | LTS  |
| <i>No significant public health or hazards impacts would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <b>SCA HAZ-13: Site Review by the Fire Services Division.</b> <i>Prior to the issuance of demolition, grading, or building permit.</i> The project applicant shall submit plans for site review and approval to the Fire Prevention Bureau Hazardous Materials Unit. Property owner may be required to obtain or perform a Phase II hazard assessment.   | LTS  |



**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts   | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)  | Level of Significance With MM, SCA or Recommendation |
|---|----------------------------------|---|--|
| <b>K. UTILITIES</b>   |                                  |   |  |
| <i>No significant impacts would occur to utilities or infrastructure with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA UTL-1: Waste Reduction and Recycling.</b> The project applicant will submit a Construction &amp; Demolition Waste Reduction and Recycling Plan (WRRP) and an Operational Diversion Plan (ODP) for review and approval by the Public Works Agency.</p> <p><i>Prior to issuance of demolition, grading, or building permit</i></p> <p>Chapter 15.34 of the Oakland Municipal Code outlines requirements for reducing waste and optimizing construction and demolition (C&amp;D) recycling. Affected projects include all new construction, renovations/alterations/modifications with construction values of \$50,000 or more (except R-3), and all demolition (including soft demo). The WRRP must specify the methods by which the development will divert C&amp;D debris waste generated by the proposed project from landfill disposal in accordance with current City requirements. Current standards, FAQs, and forms are available at <a href="http://www.oaklandpw.com/Page39.aspx">www.oaklandpw.com/Page39.aspx</a> or in the Green Building Resource Center. After approval of the plan, the project applicant shall implement the plan.</p> <p><i>Ongoing</i></p> <p>The ODP will identify how the project complies with the Recycling Space Allocation Ordinance, (Chapter 17.118 of the Oakland Municipal Code), including capacity calculations, and specify the methods by which the development will meet the current diversion of solid waste generated by operation of the proposed project from landfill disposal in accordance with current City requirements. The proposed program shall be implemented and maintained for the duration of the proposed activity or facility. Changes to the plan may be re-submitted to the Environmental Services Division of the Public Works Agency for review and approval. Any incentive programs shall remain fully operational as long as residents and businesses exist at the project site.</p> | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts   | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|---|----------------------------------|--|--|
| <i>No significant impacts would occur to utilities or infrastructure with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA UTL-2: Underground Utilities.</b> <i>Prior to issuance of a building permit</i></p> <p>The project applicant shall submit plans for review and approval by the Building Services Division and the Public Works Agency, and other relevant agencies as appropriate, that show all new electric and telephone facilities; fire alarm conduits; street light wiring; and other wiring, conduits, and similar facilities placed underground. The new facilities shall be placed underground along the project applicant's street frontage and from the project applicant's structures to the point of service. The plans shall show all electric, telephone, water service, fire water service, cable, and fire alarm facilities installed in accordance with standard specifications of the serving utilities.</p>  | LTS  |
| <i>No significant impacts would occur to utilities or infrastructure with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA UTL-3: Improvements in the Public Right-of-Way (General).</b> <i>Approved prior to the issuance of a P-job or building permit</i></p> <p>a) The project applicant shall submit Public Improvement Plans to Building Services Division for adjacent public rights-of-way (ROW) showing all proposed improvements and compliance with the conditions and/or mitigations and City requirements including but not limited to curbs, gutters, sewer laterals, storm drains, street trees, paving details, locations of transformers and other above ground utility structures, the design specifications and locations of facilities required by the East Bay Municipal Utility District (EBMUD), street lighting, on-street parking and accessibility improvements compliant with applicable standards and any other improvements or requirements for the project as provided for in this Approval. Encroachment permits shall be obtained as necessary for any applicable improvements- located within the public ROW.</p> <p>b) Review and confirmation of the street trees by the City's Tree Services Division is required as part of this condition and/or mitigations.</p> <p>c) The Planning and Zoning Division and the Public Works Agency will review and approve designs and specifications for the improvements. Improvements shall be completed prior to the issuance of the final building permit.</p> <p>d) The Fire Services Division will review and approve fire crew and apparatus access, water supply availability and distribution to current codes and standards. New flow tests or hydraulic simulations will be conducted by EBMUD to verify availability of adequate water supplies and distribution infrastructure to maintain minimum fire flow standards and to serve the new structures (which may require more than the minimum due to the size of the proposed buildings). In addition, the Fire Services Division will review the final site plans and fire flow testing to be conducted at the site to confirm that adequate firefighting infrastructure is installed at the site prior to approval of final construction plans.</p> | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts   | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)  | Level of Significance With MM, SCA or Recommendation |
|---|----------------------------------|---|--|
| <i>No significant impacts would occur to utilities or infrastructure with implementation of the City Standard Condition of Approval listed in this table.</i>         | LTS                              | <p><b>SCA UTL-4: Improvements in the Public Right-of Way (Specific).</b> <i>Approved prior to the issuance of a grading or building permit</i></p> <p>Final building and public improvement plans submitted to the Building Services Division shall include the following components: Examples include:</p> <ul style="list-style-type: none"> <li>a) Install additional standard City of Oakland streetlights.</li> <li>b) Remove and replace any existing driveway that will not be used for access to the property with new concrete sidewalk, curb and gutter.</li> <li>c) Reconstruct drainage facility to current City standard.</li> <li>d) Provide separation between sanitary sewer and water lines to comply with current City of Oakland and Alameda Health Department standards.</li> <li>e) Construct wheelchair ramps that comply with Americans with Disability Act requirements and current City Standards.</li> <li>f) Remove and replace deficient concrete sidewalk, curb and gutter within property frontage.</li> <li>g) Provide adequate fire department access and water supply, including, but not limited to currently adopted fire codes and standards.</li> </ul>                      | LTS  |
| <i>No significant impacts would occur to utilities or infrastructure with implementation of the City Standard Condition of Approval listed in this table.</i>         | LTS                              | <p><b>SCA UTL-5: Payment for Public Improvements.</b> <i>Prior to issuance of a final inspection of the building permit</i></p> <p>The project applicant shall pay for and install public improvements made necessary by the project including damage caused by construction activity.</p>  | LTS  |
| <b>BIOLOGICAL RESOURCES (Included in Chapter VI)</b>  |                                  |   |  |
| <i>No significant impacts to nesting raptors on the project site would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA BIO-1: Tree Removal During Breeding Season.</b> <i>Prior to issuance of a tree removal permit.</i> To the extent feasible, removal of any tree and/or other vegetation suitable for nesting birds shall not occur during the breeding season of March 15 to August 15. If tree removal must occur during the breeding season, all sites shall be surveyed by a qualified biologist to verify the presence or absence of nesting birds. Pre-removal surveys shall be conducted within 15 days prior to the start of work from March 15 through May 31, and within 30 days prior to the start of work from June 1 through August 15. The pre-removal surveys shall be submitted to the Planning and Zoning Division and the Tree Services Division of the Public Works Agency. If the survey indicates the potential presence of nesting birds, the biologist shall determine an appropriately sized buffer around the nest in which no work will be allowed until the young have successfully fledged. The size of the nest buffer will be determined by the biologist in consultation with the CDFW, and will be based to a large extent on the nesting species and its sensitivity to disturbance.</p> | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts  | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|--|----------------------------------|--|--|
| No significant impacts to trees on the project site would occur with implementation of the City Standard Condition of Approval listed in this table. | LTS                              | <b>SCA BIO-2: Tree Removal Permit.</b> Prior to issuance of a demolition, grading, or building permit. Prior to removal of any protected trees, per the Protected Tree Ordinance, located on the project site or in the public right-of-way adjacent to the project, the project applicant shall secure a tree removal permit from the Tree Division of the Public Works Agency, and abide by the conditions of that permit.   | LTS  |
| No significant impacts to trees on the project site would occur with implementation of the City Standard Condition of Approval listed in this table. | LTS                              | <p><b>SCA BIO-3: Tree Replacement Plantings.</b> Prior to issuance of a final inspection of the building permit. Replacement plantings shall be required for erosion control, groundwater replenishment, visual screening and wildlife habitat, and in order to prevent excessive loss of shade, in accordance with the following criteria:</p> <ul style="list-style-type: none"> <li>No tree replacement shall be required for the removal of non-native species, for the removal of trees which is required for the benefit of remaining trees, or where insufficient planting area exists for a mature tree of the species being considered.</li> <li>Replacement tree species shall consist of <i>Sequoia sempervirens</i> (Coast Redwood), <i>Quercus agrifolia</i> (Coast Live Oak), <i>Arbutus menziesii</i> (Madrone), <i>Aesculus californica</i> (California Buckeye) or <i>Umbellularia californica</i> (California Bay Laurel) or other tree species acceptable to the Tree Services Division.</li> <li>Replacement trees shall be at least of twenty-four (24) inch box size, except that three fifteen (15) gallon size trees may be substituted for each twenty-four (24) inch box size tree where appropriate.</li> <li>Minimum planting areas must be available on site as follows: <ul style="list-style-type: none"> <li>For <i>Sequoia sempervirens</i>, three hundred fifteen square feet per tree;</li> <li>For all other species listed in #2 above, seven hundred (700) square feet per tree.</li> </ul> </li> <li>In the event that replacement trees are required but cannot be planted due to site constraints, an in lieu fee as determined by the master fee schedule of the city may be substituted for required replacement plantings, with all such revenues applied toward tree planting in city parks, streets and medians.</li> <li>Plantings shall be installed prior to the issuance of a final inspection of building permit, subject to seasonal constraints, and shall be maintained by the project applicant until established. The Tree Reviewer of the Tree Division of the Public Works Agency may require a landscape plan showing the replacement planting and the method of irrigation. Any replacement planting which fails to become established within one year of planting shall be replanted at the project applicant's expense.</li> </ul> | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts   | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)   | Level of Significance With MM, SCA or Recommendation |
|---|----------------------------------|--|--|
| <i>No significant impacts to trees on the project site would occur with implementation of the City Standard Condition of Approval listed in this table.</i> | LTS                              | <p><b>SCA BIO-4: Tree Protection During Construction.</b> <i>Prior to issuance of a demolition, grading, or building permit.</i> Adequate protection shall be provided during the construction period for any trees which are to remain standing, including the following, plus any recommendations of an arborist:</p> <ul style="list-style-type: none"> <li>• Before the start of any clearing, excavation, construction or other work on the site, every protected tree deemed to be potentially endangered by said site work shall be securely fenced off at a distance from the base of the tree to be determined by the City Tree Reviewer. Such fences shall remain in place for duration of all such work. All trees to be removed shall be clearly marked. A scheme shall be established for the removal and disposal of logs, brush, earth and other debris which will avoid injury to any protected tree.</li> <li>• Where proposed development or other site work is to encroach upon the protected perimeter of any protected tree, special measures shall be incorporated to allow the roots to breathe and obtain water and nutrients. Any excavation, cutting, filing, or compaction of the existing ground surface within the protected perimeter shall be minimized. No change in existing ground level shall occur within a distance to be determined by the City Tree Reviewer from the base of any protected tree at any time. No burning or use of equipment with an open flame shall occur near or within the protected perimeter of any protected tree.</li> <li>• No storage or dumping of oil, gas, chemicals, or other substances that may be harmful to trees shall occur within the distance to be determined by the Tree Reviewer from the base of any protected trees, or any other location on the site from which such substances might enter the protected perimeter. No heavy construction equipment or construction materials shall be operated or stored within a distance from the base of any protected trees to be determined by the tree reviewer. Wires, ropes, or other devices shall not be attached to any protected tree, except as needed for support of the tree. No sign, other than a tag showing the botanical classification, shall be attached to any protected tree.</li> <li>• Periodically during construction, the leaves of protected trees shall be thoroughly sprayed with water to prevent buildup of dust and other pollution that would inhibit leaf transpiration.</li> </ul> | LTS  |

**Table II-1: Summary of Impacts, Standard Conditions of Approval (SCA), Mitigation Measures (MM) and Recommendations**

| Environmental Impacts      | Level of Significance Without MM | Standard Conditions of Approval (SCA)/Mitigation Measures (MM)  | Level of Significance With MM, SCA or Recommendation |
|----------------------------|----------------------------------|---|--|
| SCA BIO-4 <i>Continued</i> |                                  | <ul style="list-style-type: none"> <li>If any damage to a protected tree should occur during or as a result of work on the site, the project applicant shall immediately notify the Public Works Agency of such damage. If, in the professional opinion of the Tree Reviewer, such tree cannot be preserved in a healthy state, the Tree Reviewer shall require replacement of any tree removed with another tree or trees on the same site deemed adequate by the Tree Reviewer to compensate for the loss of the tree that is removed.</li> <li>All debris created as a result of any tree removal work shall be removed by the project applicant from the property within two weeks of debris creation, and such debris shall be properly disposed of by the project applicant in accordance with all applicable laws, ordinances, and regulations.</li> </ul> |  |

Source: LSA Associates, Inc., 2014.

### III. PROJECT DESCRIPTION

This chapter describes the proposed Children's Hospital & Research Center Oakland (CHRCO) Campus Master Plan Project (project) that is evaluated in this Environmental Impact Report (EIR). An overview of the project site, project background, and project objectives is followed by a description of the proposed development and a summary of requested approvals and entitlements. The project sponsor is the Children's Hospital & Research Center Oakland. The City of Oakland is the Lead Agency for this EIR.

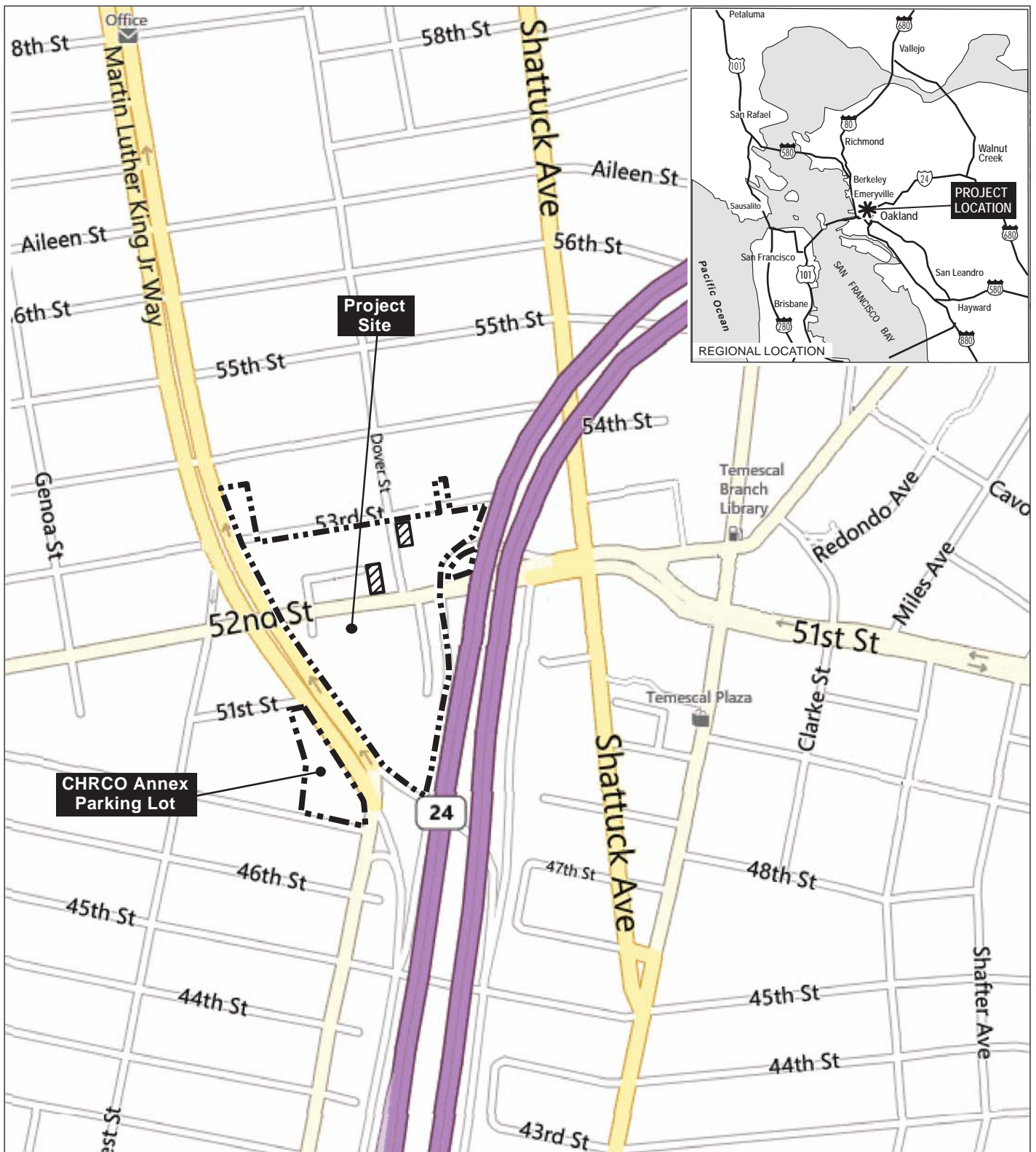
#### A. PROJECT LOCATION AND SITE CHARACTERISTICS

The following section describes the project's local and regional context, surrounding land uses, site characteristics, and CHRCO services.

##### 1. Project Location and Access

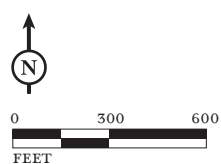
The approximately 11-acre CHRCO campus is located at 747 52<sup>nd</sup> Street, in the northern portion of Oakland, in Alameda County. As shown in **Figure III-1**, the CHRCO campus is generally bounded by 53<sup>rd</sup> Street to the north, State Route 24 (SR 24) to the east, and Martin Luther King Jr. Way and the elevated BART tracks to the south and west. **Figure III-2** shows an aerial photograph of the campus and surrounding areas. The CHRCO campus, within the project site, consists of 31 parcels. In addition, the project site includes an area of California Department of Transportation (Caltrans) Right of Way which the hospital proposes to acquire and improve in connection with the project, and 2 parcels not owned by the hospital (and for which the hospital has no current plans for acquisition). Parcel numbers (as well as uses and structures) are shown in **Figure III-3** and listed in **Table III-1**. The locations of the main hospital, the outpatient center, and other CHRCO Oakland clinics and facilities are shown in **Figure III-4**.

Regional vehicular access to the campuses is via Interstate 580 (I 580) and State Routes 13 and 24 (SR 13 and SR 24). The nearest access point to SR 24 is located immediately south of the CHRCO campus, at the intersection of the SR 24 ramp and Martin Luther King Jr. Way, in the vicinity of 47<sup>th</sup> Street. Local roadways providing access to the campus include Martin Luther King Jr. Way, 52<sup>nd</sup> Street, and Dover Street. The Alameda-Contra Costa Transit District (AC Transit) provides bus services to the campuses via Martin Luther King Jr. Way. The nearest Bay Area Rapid Transit (BART) Station is the MacArthur Station, approximately 0.6 miles south of the CHRCO campus. Children's Hospital operates a free shuttle service between the MacArthur BART Station and the campus.



LSA

FIGURE III-1



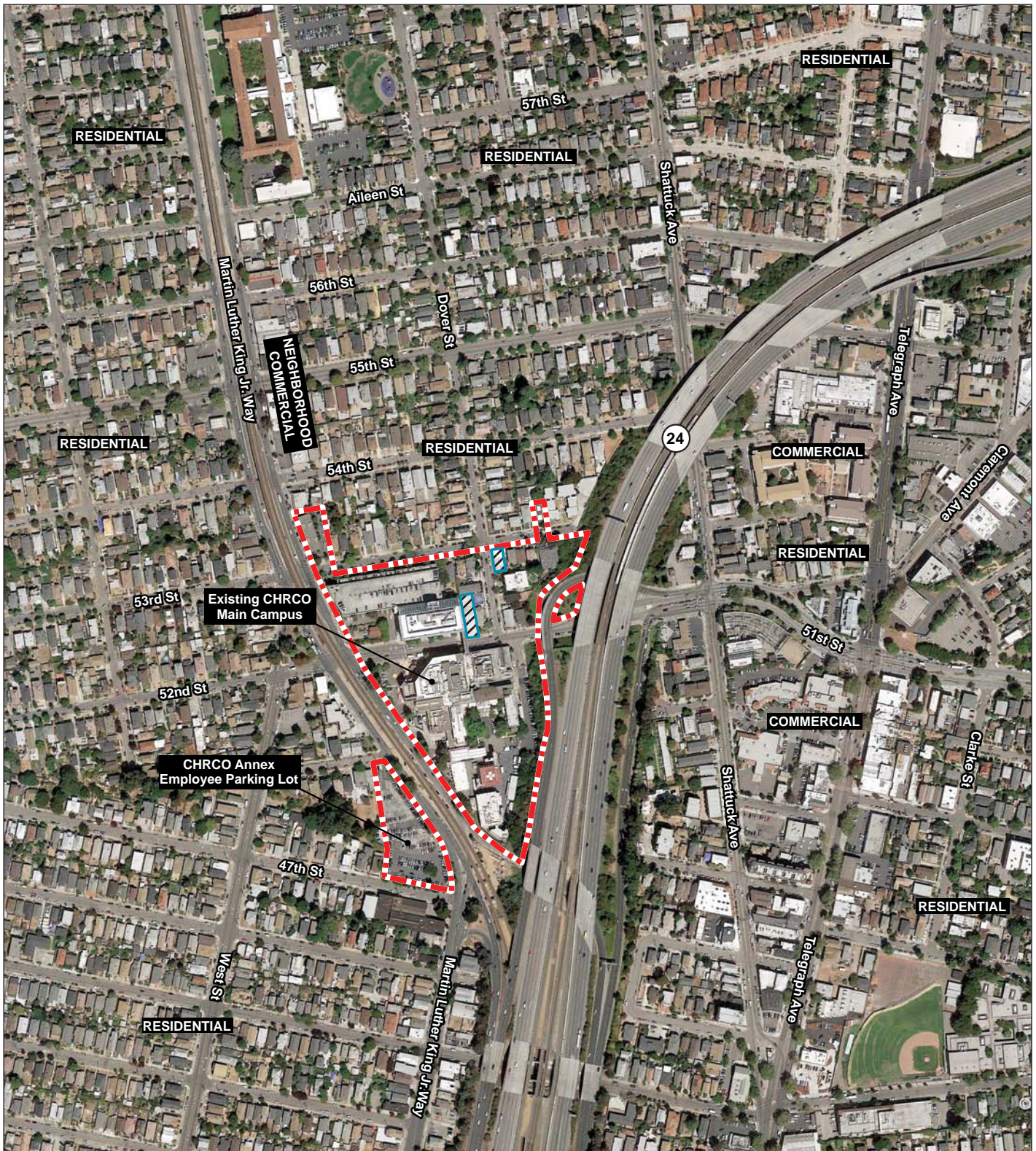
- Project Sites
- Private Residence, Parcel Not Owned by CHRCO

SOURCES: BING MAPS; LSA ASSOCIATES, INC., 2013.

I:\CHR1201 Childrens Hospital\figures\Fig\_III.1.ai (5/14/14)

CHRCO Campus Master Plan Project EIR  
Project Vicinity and Regional Location





LSA

FIGURE III-2



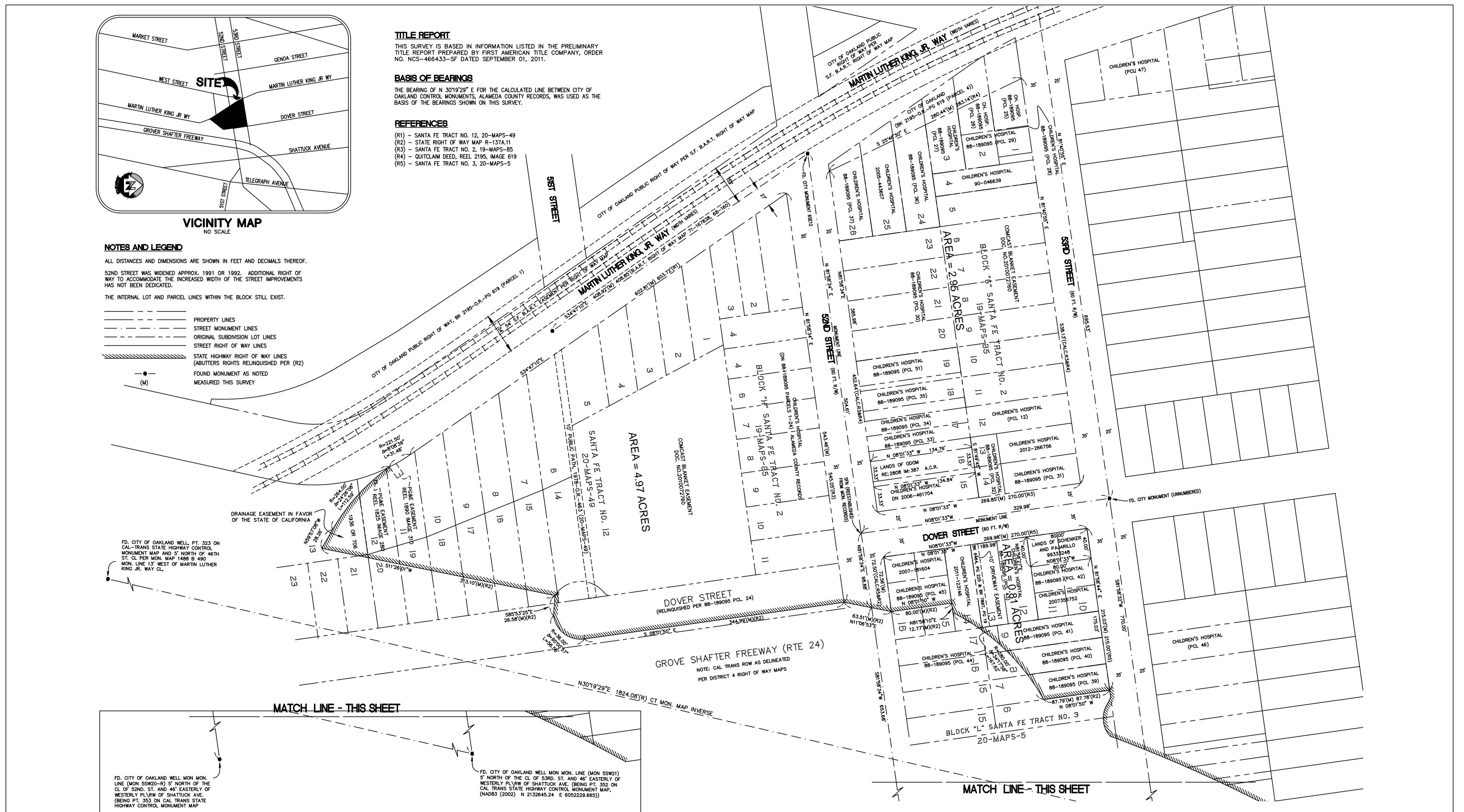
*CHRCO Campus Master Plan Project EIR*  
*Aerial of CHRCO Campus and*  
*Surrounding Land Uses*

SOURCES: GOOGLE EARTH, 8/12; LSA ASSOCIATES, INC., 2013.

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LSA

FIGURE III-4

NOT TO SCALE

SOURCE: CHRCO, MAY 2013.

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CHRCO Campus Master Plan Project EIR  
Existing CHRCO Clinics and Facilities Map

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## 2. Area Characteristics

As shown in **Figure III-2**, the CHRCO campus is generally surrounded by residential areas to the north and west and SR 24 to the east. Residential uses are located north of the CHRCO campus and consist of predominantly 1- and 2-story single-family homes with neighborhood-serving commercial uses along Martin Luther King Jr. Way to the northwest. Residential and commercial uses are located beyond SR 24, east of the CHRCO campus and consist of single family and multi-family residential buildings with neighborhood-serving commercial uses along the east side of Shattuck Avenue.

The majority of the existing CHRCO campus is designated as Institutional per the City's Land Use and Transportation Element of the City's General Plan; the northeastern corner of the campus is designated as Mixed Housing Type Residential (**Figure III-5**). The majority of the campus is zoned Medical Center (S-1) on the City's zoning map; the northeastern corner of the campus is zoned Mixed Housing Type Residential (RM-2) (**Figure III-5**).<sup>1</sup> The Caltrans right-of-way adjacent to the main CHRCO campus has the same General Plan designation and zoning as the majority of the campus (i.e., designated under the General Plan as Institutional and zoned S-1). The residential area north of 53<sup>rd</sup> Street is designated Mixed Use Type Residential under the General Plan and zoned Mixed Housing Type Residential (RM-2), while the neighborhood-serving commercial uses along Martin Luther King Jr. Way are designated Neighborhood Center Mixed Use in the General Plan and zoned Neighborhood Commercial (CN-3). The residential and commercial areas east of SR 24 are designated as Urban Residential and Neighborhood Center Mixed Use in the General Plan and zoned Urban Residential Zone (RU-1) and Neighborhood Commercial Zones (CN-3 and CN-4). Residential uses are located south of the CHRCO campus and consist of predominantly 1- and 2-story single-family homes and are designated as Urban Residential per the City's General Plan and zoned Urban Residential (RU-4 and RU-5). The primarily residential uses located west of Martin Luther King Jr. Way consist of both single-family and multi-family homes and are designated as Mixed Use Type Residential per the General Plan and zoned Mixed Housing Type Residential (RM-2).

## 3. Project Site Existing Characteristics

The following section describes existing characteristics, including existing buildings and use; open space and landscaping; circulation and parking; and patients, visitors and staff at the CHRCO campus. The existing buildings and structures on the CHRCO campus are shown in **Figures III-6, III-7a, and III-7b**, and the characteristics of each are summarized in **Table III-1**.

**a. Existing Buildings and Uses.** The CHRCO campus is generally oriented on a north-south axis. The campus is an existing hospital facility that contains a complex of medical buildings on a triangular site. Buildings and structures located in the northern area (north of 52<sup>nd</sup> Street) of the CHRCO campus include the 5-story, 115,559-square-foot Outpatient Center Building 1 (OPC1), 5-story parking garage structure, several CHRCO-owned residential buildings and 2 private residences.

Buildings and structures in the southern area of the site (generally bounded on three sides by 52<sup>nd</sup> Street on the north, SR 24 on the east, and Martin Luther King Jr. Way on the west) comprise the main hospital facilities and include seven 2- to 5-story buildings or building additions, which include the 1982 Patient Tower (1982 Tower), Ford Diagnostic and Treatment Center (D&T Building) and Cardiac Catheterization Lab, B/C Wing, A/B Wing, Cafeteria, the Western Addition, and the Central

<sup>1</sup> Oakland, City of, 2011. Community and Economic Development Agency, Planning and Zoning Division. City of Oakland General Plan Designations Map. April 14.

Utility Plant.<sup>2</sup> These buildings are located in the central area of the campus and total approximately 257,727 square feet of floor area.

Other buildings and structures located south of 52<sup>nd</sup> Street include the 36-foot-tall helistop structure, 2-story Bruce Lyon Memorial Research Laboratory Building, the Bruce Lyon addition (Hem/Onc administrative offices) and five temporary trailers that house office and administrative uses.

In 2013, 559 helicopters utilized the CHRCO helistop. Each landing/takeoff is counted as an aircraft operation, meaning that a total of 1,118 helicopter operations occurred at the existing helistop during this time period. The time and date of those landings vary greatly as they are necessitated by medical emergencies.<sup>3</sup> Helicopter arrivals/departures are expected to increase approximately 1 percent per year through 2025 with or without the proposed project.<sup>4</sup> In 2025, the projected number of helistop operations is 1,260. These estimates are based on CHRCO's projected growth model.<sup>5, 6</sup> CHRCO does not own a helicopter. Rather, patients are brought from all over the Bay Area by EMS operators and include REACH Air Medical Services, CALSTAR and Stanford Life Flight. While helicopters are bringing patients from different directions, pilots want to land into the wind. Typically, prevailing winds are out of the west, therefore most approaches would be from the east and most departures would be toward the west.

**b. Open Space and Landscaping.** The highly developed CHRCO campus has limited open space between its buildings. However, there is an approximately 1,600-square-foot courtyard between the A/B Wing and B/C Wing. Within the courtyard there is a magnolia tree. The diameter at breast height is approximately 70 inches. It is approximately 60 feet high and the canopy is approximately 70 feet in diameter. This tree was planted in about 1860 prior to the establishment of the hospital and adjacent to the McElrath mansion, which was demolished in 1946 to accommodate construction of the B/C Wing. Adjacent to the courtyard there is an 800-square-foot play area with climbing structure; this area is open at all times, and is used intermittently, primarily by siblings of patients, and on occasion, by patients. The play area is provided in accordance with California Building Code 1224.30.3.1 which requires a play area for the pediatric nursing unit.<sup>7</sup> Street trees are generally located along the perimeter of the campus. Also adjacent to the courtyard is the Butterfly Garden which was constructed in approximately 1997 and spearheaded by the former School Program Coordinator. The space was created as a living lab for the students, as well as a welcoming place for patients, families and staff to have some solace.

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<sup>2</sup> **Table III-1** identifies and describes terms referring to existing buildings and structures.

<sup>3</sup> Heliplanners, 2014. Children's Hospital and Research Center Oakland Helicopter Landing Analysis. May 29.

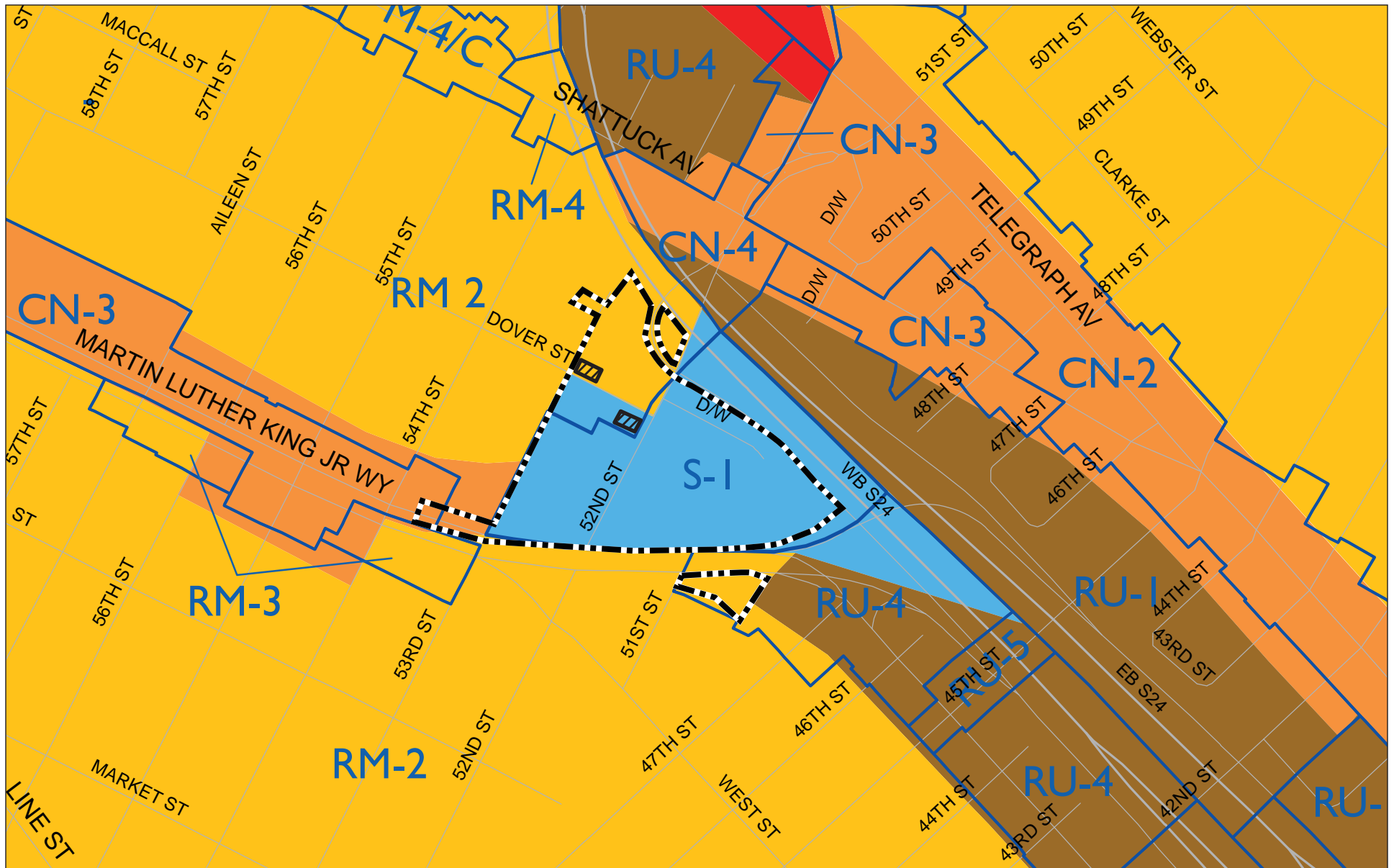
<sup>4</sup> The actual number of helicopter landings, and their timing, is a function of medical emergencies, which can vary daily and seasonally. Furthermore, landings can increase or decrease over time with changes in population, added or reduced medical specialties at CHRCO, and the availability of competing services at other hospitals.

<sup>5</sup> Due to uncertainties regarding the availability of other future Level 1 trauma centers, market factors, and the future state of health care technology, growth projections beyond 2025 are difficult to determine and would be too speculative and unreliable.

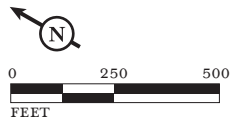
<sup>6</sup> The demolition, construction and renovation proposed as part of Phase 1 or Phase 2 are not anticipated to directly result in an increase in capacity at the Emergency Department or other facilities related to emergency medicine. As such, implementation of the Master Plan would not give reason for an increase in helistop beyond the 1 percent.


<sup>7</sup> A pediatric nursing unit is defined as a hospital that has eight or more licensed pediatric beds.










LSA



-  Project Sites
-  Private Residence, Parcel Not Owned by CHRCO

#### GENERAL PLAN LAND USE DESIGNATIONS

-  Mixed Housing Type Residential
-  Urban Residential
-  Neighborhood Center Mixed Use
-  Community Commercial
-  Institutional

#### RESIDENTIAL ZONING

- Mixed Housing [RM]
- Urban [RU]

#### COMMERCIAL ZONING

- Neighborhood Center [CN]

#### SPECIAL & COMBINING ZONING

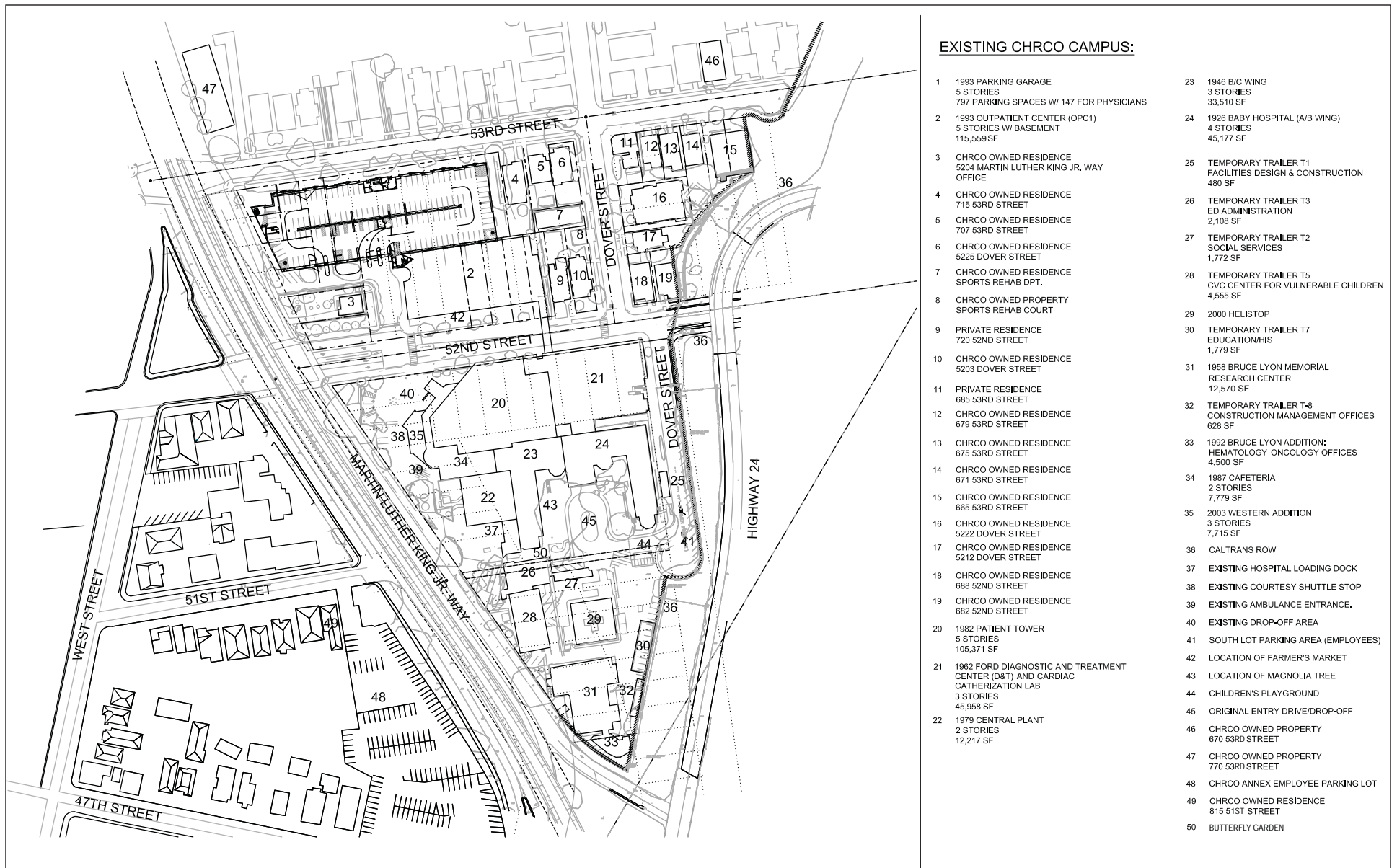
- Medical Center [S1]

FIGURE III-5

*CHRCO Campus Master Plan Project EIR*  
Existing General Plan and  
Zoning Map in Project Area

SOURCE: CITY OF OAKLAND, COMMUNITY & ECONOMIC DEVELOPMENT AGENCY, APRIL 2011.

I:\CHR1201 Childrens Hospital\figures\Fig\_III5.ai (7/29/14)



LSA

NOT TO SCALE



FIGURE III-6

SOURCE: HDR/TAYLOR, 2013.

I:\CHR1201 Childrens Hospital\figures\Fig\_III6.ai (4/1/14)

CHRCO Campus Master Plan Project EIR  
Existing CHRCO Campus Site Plan





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T3 TEMPORARY TRAILER  
ED ADMINISTRATION



T2 TEMPORARY TRAILER  
SOCIAL SERVICES



T5 TEMPORARY TRAILER  
CVC CENTER FOR VULNERABLE CHILDREN



HELISTOP



T7 TEMPORARY TRAILER  
EDUCATION/HIS



BRUCE LYON MEMORIAL RESEARCH CENTER



T7 TEMPORARY TRAILER  
HEMATOLOGY ONCOLOGY OFFICES



HEMATOLOGY/ONCOLOGY BUILDING



HOSPITAL CAFETERIA



HOSPITAL WESTERN ADDITION



CALTRANS ROW



HOSPITAL LOADING DOCK



COURTESY SHUTTLE STOP



AMBULANCE ENTRY



DROP OFF AND HOSPITAL MAIN ENTRANCE



SOUTH PARKING LOT



FARMER'S MARKET



SOUTHERN MAGNOLIA TREE



CHILDREN'S PLAYGROUND



ORIGINAL ENTRY DRIVE/DROP-OFF



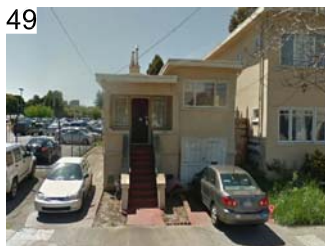
CHRCO OWNED  
670 53RD STREET



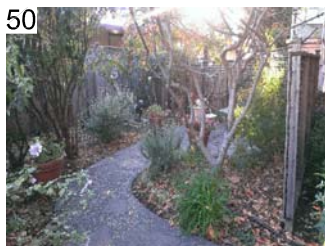
HUMAN RESOURCES AND PSYCHIATRIC OFFICES  
770 53RD STREET



CHRCO ANNEX EMPLOYEE PARKING LOT



CHRCO OWNED  
815 51ST STREET



BUTTERFLY GARDEN

LSA

FIGURE III-7b

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Table III-1: Existing Buildings and Structures

| Number on Figure III-6 <sup>a</sup> | Parcel No. <sup>b</sup> | Street Address <sup>c</sup>     | Building/Structure  | Construction Date  | Number of Stories      | Area (sq. ft.)     | Current Use or Service   |
|-------------------------------------|-------------------------|---------------------------------|---|--------------------|------------------------|--------------------|--|
| 1                                   | 14-1206-26-1            | 744 52 <sup>nd</sup> Street     | Parking Garage Structure  | 1993               | 5 stories              | 240,000            | 797 parking spaces   |
| 2                                   | 14-1206-26-1            | 744 52 <sup>nd</sup> Street     | Outpatient Center (OPC1)<br>(including pedestrian bridge over 52 <sup>nd</sup> Street ) | 1993               | 5 stories w/basement   | 115,559            | <div><div><ul style="list-style-type: none"><li>• Clinics</li><li>• Outpatient Surgery</li><li>• Infusion Clinic</li></ul></div><div><ul style="list-style-type: none"><li>• Health Information Systems</li><li>• Conference Rooms</li><li>• A 600 kW standby diesel generator (located at the service yard, outdoors)</li></ul></div></div>   |
| 3                                   | 14-1206-14-2            | 5204 Martin Luther King Jr. Way | CHRCO-owned residence   | 1920s              | 2 stories              | 1,041 <sup>d</sup> | Office   |
| 4                                   | 14-1206-27              | 715 53 <sup>rd</sup> Street     | CHRCO-owned residence   | ca. 1906           | 1 story                | 1,530 <sup>d</sup> | Office   |
| 5                                   | 14-1206-28              | 707 53 <sup>rd</sup> Street     | CHRCO-owned residence   | 1907               | 2 stories              | 1,923 <sup>d</sup> | Residential  |
| 6                                   | 14-1206-26-1            | 5225 Dover Street               | CHRCO-owned residence   | 1908               | 2 stories              | 2,000 <sup>e</sup> | Office   |
| 7, 8                                | 14-1206-26-1            | 744 52 <sup>nd</sup> Street     | Sports Rehabilitation Facility (CHRCO-owned residence)                                  | 1990s              | 1 story                | 1,600 <sup>e</sup> |  |
| 9                                   | 14-1206-4               | 720 52 <sup>nd</sup> Street     | Private residence   | 1907               | 1 story                | 1,141 <sup>d</sup> |  |
| 10                                  | 14-1206-3               | 5203 Dover Street               | CHRCO-owned residence   | ca. 1905           | 1 story                | 1,477 <sup>d</sup> | Office   |
| 11                                  | 14-1215-24              | 685 53 <sup>rd</sup> Street     | Private residence   | ca. 1914           | 1 story                | 1,600 <sup>e</sup> |  |
| 12                                  | 14-1215-25              | 679 53 <sup>rd</sup> Street     | CHRCO-owned residence   | 1921               | 2 stories              | 2,106 <sup>d</sup> | Office   |
| 13                                  | 14-1215-26              | 675 53 <sup>rd</sup> Street     | CHRCO-owned residence   | ca. 1911           | 1 story                | 1,277 <sup>d</sup> | Office   |
| 14                                  | 14-1215-27-2            | 671 53 <sup>rd</sup> Street     | CHRCO-owned residence   | 1906               | 1 story                | 1,030 <sup>d</sup> | Office   |
| 15                                  | 14-1215-28-3            | 665 53 <sup>rd</sup> Street     | CHRCO-owned residence   | 1900s <sup>f</sup> | 1 story                | 2,800 <sup>e</sup> | Office   |
| 16                                  | 14-1215-23-1            | 5222 Dover Street               | The Family House<br>(CHRCO-owned residence)   | 1988               | 2 stories over parking | 12,622             | 16 Residential units with 9 off-street parking spaces  |
| 17                                  | 14-1215-21-2            | 5212 Dover Street               | CHRCO-owned residence   | 1910               | 2 stories              | 2,253 <sup>d</sup> | Vacant   |
| 18                                  | 14-1215-20              | 688 52 <sup>nd</sup> Street     | CHRCO-owned residence   | 1922               | 1 story                | 1,472 <sup>d</sup> | Office   |
| 19                                  | 14-1215-19              | 682 52 <sup>nd</sup> Street     | CHRCO-owned residence   | 1922               | 1 story                | 1,400 <sup>e</sup> | Office   |
| 20                                  | 14-1205-19-1            | 747 52 <sup>nd</sup> Street     | Patient Tower   | 1982               | 5 stories              | 105,371            | <div><div><ul style="list-style-type: none"><li>• Registration</li><li>• Gift Shop</li><li>• Outpatient Pharmacy</li><li>• Emergency</li><li>• Dental Clinic</li><li>• Radiology</li><li>• Cardiology Clinic</li></ul></div><div><ul style="list-style-type: none"><li>• Catheterization Laboratory</li><li>• Surgery</li><li>• Neonatal Intensive Care Unit (NICU)</li><li>• Central Sterile Processing</li><li>• Medical Surgical</li><li>• Rehabilitation Unit</li><li>• Bone Marrow Patient Unit</li></ul></div></div>   |
| 21                                  | 14-1205-19-1            | 747 52 <sup>nd</sup> Street     | Ford Diagnostic and Treatment Center (D&T Building) and Cardiac Catheterization Lab     | 1962               | 3 stories              | 45,958             | <div><div><ul style="list-style-type: none"><li>• Center for Child Protection</li><li>• Neurology Clinic</li><li>• Endocrinology Clinic</li><li>• EVS</li><li>• Housekeeping</li><li>• Engineering</li><li>• Laboratory</li></ul></div><div><ul style="list-style-type: none"><li>• Laboratory Offices</li><li>• Miscellaneous Offices</li><li>• Pathology Offices</li><li>• Hematology/Oncology Offices</li><li>• Switch Room</li><li>• Neonatal Intensive Care Unit (NICU)</li><li>• Pediatric Intensive Care Unit (PICU)</li></ul></div></div>  |
| 22                                  | 14-1205-19-1            | 747 52 <sup>nd</sup> Street     | Central Utility Plant   | 1979               | 2 stories              | 12,217             | <div><div><ul style="list-style-type: none"><li>• Chiller plant</li><li>• High temperature water boiler plant</li><li>• Heating water heat exchanges and associated pumps</li><li>• Steam generators and deaerators</li><li>• Main electrical switchgear</li><li>• Medical vacuum pumps</li><li>• Medical air compressors</li><li>• Domestic hot water heaters</li><li>• Two 1,500 kW standby diesel generators</li></ul></div><div>Two existing heating water boilers and one newer air cooled chiller are located at the roof penthouse of the D&amp;T Building. One other air cooled chiller is located at the roof of the Cafeteria.</div></div> |

Table III-1: Existing Buildings and Structures

| Number on Figure III-6 <sup>a</sup> | Parcel No. <sup>b</sup> | Street Address <sup>c</sup> | Building/Structure                                     | Construction Date | Number of Stories | Area (sq. ft.)      | Current Use or Service   |
|-------------------------------------|-------------------------|-----------------------------|--|-------------------|-------------------|---------------------|--|
| 23                                  | 14-1205-19-1            | 747 52 <sup>nd</sup> Street | B/C Wing   | 1946              | 3 stories         | 33,510              | <div><div><ul style="list-style-type: none"><li>• Morgue</li><li>• Gift Shop</li><li>• Biomedical</li><li>• Engineering</li><li>• Housekeeping</li><li>• Electrical Main Switch</li><li>• Mail/Copy</li><li>• Physical Plant</li><li>• Materials Management</li><li>• Rehabilitation (Physical, Occupational and Speech Therapy)</li><li>• Medical Staff</li></ul></div><div><ul style="list-style-type: none"><li>• Family Resource Center</li><li>• Laboratory Storage</li><li>• Center for Child Protection (CCP) Office</li><li>• Dietary Office</li><li>• Central Sterile Processing</li><li>• Pharmacy</li><li>• Surgical/Orthopedics Telemetry</li><li>• Orthopedics</li><li>• Rehabilitation Therapy Storage</li><li>• School Program</li><li>• Staff Lockers and Lounge</li></ul></div></div> |
| 24                                  | 14-1205-19-1            | 747 52 <sup>nd</sup> Street | A/B Wing   | 1926              | 4 stories         | 45,177              | <div><div><ul style="list-style-type: none"><li>• Office</li><li>• Storage</li><li>• Employee Health</li><li>• Medical Records</li><li>• Housekeeping</li><li>• Physical Plant</li><li>• Administration</li><li>• Medical Staff</li><li>• Chapel</li></ul></div><div><ul style="list-style-type: none"><li>• Hematology Office</li><li>• Clinical Dietician</li><li>• Materials Management</li><li>• Miscellaneous Storage and Offices</li><li>• Resident Lounge</li><li>• Volunteer</li><li>• Respiratory Therapy Storage</li><li>• Pharmacy Office</li><li>• Education Classroom/Offices</li><li>• Sleep Rooms</li></ul></div></div>   |
| 25                                  | 14-1205-19-1            | 747 52 <sup>nd</sup> Street | Temporary Trailer (Facilities Design and Construction) | –                 | 1 story           | 480                 | Office   |
| 26                                  | 14-1204-14-5            |                             | Temporary Trailer (Ed Administration)                  | –                 | 1 story           | 2,108               | Emergency Department Administration Offices  |
| 27                                  | 14-1204-14-5            |                             | Temporary Trailer (Social Services)                    | –                 | 1 story           | 1,772               | Child Protective Services  |
| 28                                  | 14-1204-14-5            |                             | Temporary Trailer (CVC Center for Vulnerable Children) | –                 | 1 story           | 4,555               | Center for Vulnerable Children   |
| 29                                  | 14-1204-14-5            |                             | Helistop Structure                                     | 2000              | 36 feet tall      | –                   | Landing for transport helicopters  |
| 30                                  | 14-1204-14-5            |                             | Temporary Trailer (Education/HIS)                      | –                 | 1 story           | 1,779               | Health Information Systems Training Room   |
| 31                                  | 14-1204-14-5            |                             | Bruce Lyon Memorial Research Laboratory Building       | 1958              | 2 stories         | 12,570              | Clinical and Research Laboratories, includes a 131 kW standby diesel generator, outdoors   |
| 32                                  | 14-1204-14-5            |                             | Temporary Trailer (Offices)                            | –                 | 1 story           | 628                 | Construction Management Offices  |
| 33                                  | 14-1204-14-5            |                             | Bruce Lyon Addition (Hematology Oncology Offices)      | 1992              | 3 stories         | 4,500               | Hematology/Oncology Offices  |
| 34                                  | 14-1205-19-1            | 747 52 <sup>nd</sup> Street | Cafeteria  | 1987              | 2 stories         | 7,779               | Food storage, preparation, and cafeteria   |
| 35                                  | 14-1205-19-1            | 747 52 <sup>nd</sup> Street | Western Addition                                       | 2003              | 3 stories         | 7,715               | <div><ul style="list-style-type: none"><li>• Emergency</li><li>• Radiology</li><li>• Surgery</li></ul></div>   |
| 46                                  | 14-1214-02              | 670 53 <sup>rd</sup> Street | CHRCO-owned property                                   | 1900s             | 2 stories         | 2,412 <sup>e</sup>  | Office   |
| 47                                  | 14-1207-036             | 770 53 <sup>rd</sup> Street | CHRCO-owned property                                   | 1900s             | 3 stories         | 13,795 <sup>e</sup> | Office; Child Psychiatry Clinic  |

<sup>a</sup> Numbers 36 through 45 from **Figure III-5** are features on the campus, such as drop-off areas or building entrances, and as such, they are not included in the table above.

<sup>b</sup> Some parcels include multiple structures

<sup>c</sup> Some structures on the campus do not have an individual site address.

<sup>d</sup> Approximate square footage referenced from www.zillow.com.

<sup>e</sup> Approximate square footage estimated from Google Earth.

<sup>f</sup> The construction date of the CHRCO-owned residence at 665 53<sup>rd</sup> Street is not known. Based on review by Page & Turnbull, it appears to be less than 50 years old.

Source: HDR and Taylor Architects, 2013.



Other landscaping on the CHRCO campus includes street trees around the campus boundary, and planting areas north and west of the parking garage and at the southeast corner of Martin Luther King Jr. Way and 52<sup>nd</sup> Street.

**c. Parking and Circulation.** Currently there are a total of 1,107 parking spaces associated with the CHRCO campus. **Table III-2** provides a summary of existing CHRCO parking facilities. On the CHRCO campus, the parking garage and south parking lot are located in the northern and southern areas of the campus, respectively. The parking garage includes 650 spaces for the public and 147 spaces for physicians and employees of the hospital. The transient rate at the garage is \$1.50 per ½ hour; the daily maximum is \$7.50. For hospital employees, the fee for the parking garage varies; available parking 24 hours a day, seven days a week is \$30 for a two-week period, and nights-only parking is \$20 per two-week period. The south parking lot includes 48 spaces and is reserved for employees.

**Table III-2: Existing CHRCO Parking Facilities**

| Facility  | Number of Spaces |
|---|------------------|
| CHRCO Parking Garage                            | 797 <sup>a</sup> |
| CHRCO South Lot (employee only)                 | 48               |
| CHRCO Annex Employee Parking Lot                | 182              |
| CHRCO Annex Employee Parking Lot – valet spaces | 50 <sup>b</sup>  |
| Other <sup>c</sup>                              | 30               |
| <b>Total</b>                                    | <b>1,107</b>     |

<sup>a</sup> 147 of these spaces are reserved for physicians and employees.

<sup>b</sup> Through the use of a valet, approximately 50 additional vehicles can be accommodated in this lot. Stacked valet parking is used when demand requires it, approximately four days a week (Monday through Thursday), nine months a year (all months except June, July and August).

<sup>c</sup> Includes off-street parking associated with the Family House and former residential buildings currently used as office space.

Source: HDR, Taylor Architects, November, 2013.

The annex parking lot is located across Martin Luther King Jr. Way, southwest of the CHRCO campus, and provides 182 parking spaces for employees only. Approximately 50 additional vehicles can be accommodated at the annex employee lot using stacked valet parking. Stacked valet parking is used when demand requires it, approximately four days a week (Monday through Thursday), nine months a year (all months except June, July and August). The fee for employees for the south parking lot or the annex parking lot is \$16.50 per two-week period.

In addition, the Family House includes 9 underground parking spaces for patient families. Off-street spaces associated with former residential buildings currently used as office space total 21 spaces.

Primary vehicular access to the CHRCO campus is from Martin Luther King Jr. Way and 52<sup>nd</sup> Street. Ambulance access is provided via 52<sup>nd</sup> Street, and access within the CHRCO campus includes Dover Street along the eastern perimeter of the campus.

In addition, Children's Hospital operates a free courtesy shuttle service between the MacArthur BART Station (located approximately 0.6 miles south of the project site) and the CHRCO campus on weekdays approximately every fifteen minutes between 6:00 a.m. and midnight. During the day, the

shuttle seats 24 passengers; in the evening the shuttle seats 8 passengers. There are about 455 riders per day (about 9,100 riders per month).

Alameda County Transit (AC Transit) currently provides service to the Children's Hospital Oakland site vicinity via the following two routes:

- Route 12 connects the CHRCO campus with the MacArthur BART Station and downtown Oakland, operating along Martin Luther King Jr. Way adjacent to the project sites. The nearest stop to the campus is at 52<sup>nd</sup> Street.
- Route 18 connects the CHRCO campus with downtown Berkeley and downtown Oakland. Similar to Route 12, Route 18 operates along Martin Luther King Jr. Way adjacent to the project site, with a stop at 52<sup>nd</sup> Street.

CHRCO has an onsite parking and shuttle manager, and transportation information is provided during new employee orientation. In addition, pre-tax payroll deduction can be used to pay for parking. Pedestrian facilities on and around the CHRCO campus include sidewalks on Martin Luther King Jr. Way, 52<sup>nd</sup> Street, 53<sup>rd</sup> Street and Dover Street. Formal and informal walkways are provided on the campus between buildings and parking lots.

There are currently no City designated existing or proposed bicycle paths, lanes or routes through or adjacent to the CHRCO campus. City bicycle facilities in the project vicinity include a bike lane on West Street, Bicycle Boulevard on Genoa Street, bike lane on 55<sup>th</sup> Street, bike lane on Shattuck Avenue, bike lane on Telegraph Avenue, and an arterial bike route on 51<sup>st</sup> Street (east of the project site).

**d. Patients, Visitors, and Staff.** There are currently approximately 875 patients at the CHRCO campus each weekday. These patients include hospital patients, emergency department patients, patients of the outpatient facilities, and as this facility is a children's hospital, this number also includes parents or other primary caretakers accompanying patients where necessary. In addition, there are approximately 604 visitors to the hospital each weekday, which does not include the number of primary caretakers.<sup>8</sup>

CHRCO has 170 licensed beds at the hospital, and the census (the number of occupied beds) varies on a daily basis. The average daily census for 2013 was 131 beds occupied. CHRCO is licensed for a total of 190 beds, which includes the 170 beds at CHRCO and 20 leased beds at Alta Bates Summit Medical Center. These beds are used during periods of very high census when CHRCO's 170 campus beds are near capacity. The 20 leased beds at Alta Bates Summit Medical Center are medical beds, not intensive care beds.<sup>9</sup>

There are a total of approximately 2,166 hospital employees on campus over a 24-hour period on any given weekday. Approximately 66 percent (1,429 employees) work the morning shift from 7:00 a.m. to 3:00 p.m., and approximately 24 percent (520 employees) work the evening shift from 3:00 p.m. to 11:00 p.m. The remaining 10 percent (217 employees) work the night shift from 11:00 p.m. to 7:00 a.m.

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<sup>8</sup> Vendors and contractors are classified as visitors, as opposed to hospital employees.

<sup>9</sup> For example, NICU and PICU are intensive care (high-acuity) beds, medical beds are for children with lower-acuity needs. As a patient's condition improves they may be moved from a NICU/PICU bed to a medical bed.

## **B. STATE-MANDATED COMPLIANCE WITH SENATE BILL 1953**

California State Senate Bill 1953 (SB 1953) is an amendment to the 1973 Alfred E. Alquist Hospital Seismic Safety Act. The Alquist Act requires that all acute care hospitals in the State of California be designed and constructed to withstand a major earthquake and remain operational immediately after the quake.

In 1994, SB 1953 amended the Alquist Act to require hospitals to evaluate and rate all their general acute care hospital buildings for seismic resistance, and used standards developed by the California Office of Statewide Health Planning and Development (OSHPD) to measure a building's ability to withstand a major earthquake. OSHPD enforces building standards related to construction of acute care health facilities and issues all building and occupancy permits for hospital facilities.

SB 1953 requires that all acute care hospitals in California evaluate and report both the structural and non-structural safety of each of its hospital buildings and requires all hospitals to retrofit, rebuild, or close existing acute care facilities by specific dates if they do not meet current earthquake-resistant standards for hospitals. A seismic evaluation report and compliance plan must be submitted to OSHPD in accordance with these regulations. Additional legislation (Senate Bills 1801, 2006, 1661, 306, 499 and 90) provides compliance criteria and options for qualifying hospitals.

The construction of new hospitals must also comply with California Code of Regulations, Title 24, California Building Standards Code relating to the regulation of hospital buildings in addition to other regulations adopted pursuant to the State Health and Safety Code and all other applicable state laws. Pursuant to SB 1953 and OSHPD requirements, each general acute care hospital facility must be at certain seismic performance category levels for structural and non-structural deficiencies by specified time frames between 2000 and 2030.

The CHRCO hospital buildings located south of 52<sup>nd</sup> Street and comprised of seven buildings or building additions built and renovated in stages from 1928 through 2003 are currently classified as an acute care hospital facility for purposes of OSHPD requirements. These include the 1982 Patient Tower; Ford Diagnostic Treatment Center, Cardiac Catheterization Lab, B/C Wing; A/B Wing; Cafeteria; Central Utility Plant; and Western Addition. The A/B and B/C Wings were constructed prior to 1971 and currently have a Seismic Performance Category (SPC) rating of SPC-1, which is the lowest possible rating of structural performance for hospital buildings that provide general acute care services. Based on their ratings of SPC-1, the A/B and B/C Wings must be retrofitted, replaced or removed from acute care services by December 31, 2019. All other CHRCO hospital buildings are rated eligible to be licensed as acute care patient facilities until 2030 and beyond. All non-structural ratings of CHRCO buildings allows acute care use of the buildings until 2030, providing the hospital corrects non-structural deficiencies while completing internal renovations.

## **C. HOSPITAL AND MASTER PLAN BACKGROUND**

### **1. CHRCO Services**

Founded in 1912 by Mabel Weed and Bertha Wright, CHRCO is an independent major pediatric medical center for Northern California. CHRCO has 190 licensed beds (20 of which are leased beds at Alta Bates Summit Medical Center) and provides advanced pediatric care, research and medical education. CHRCO facilities include a pediatric trauma center, pediatric intensive care unit, an

outpatient center, and one of the largest sickle cell treatment and research centers in the world. CHRCO includes 30 pediatric subspecialties, from adolescent medicine to urology.

The hospital's original building, historically known as the Baby Hospital (now commonly referred to as the A/B Wing), was constructed in 1926. Since that time, six adjoining buildings have been constructed for hospital use. The A/B Wing is one of the earliest purpose-built hospitals for children in the East Bay. Numerous additions have been built adjacent to the A/B Wing and on the campus including the construction of the B/C Wing in 1946 (with additions in 1958 and 1987), the construction of the Bruce Lyon Memorial Research Laboratory Building on the southern portion of the property in 1958 (with an addition in 1972), the Ford Diagnostic and Treatment Center north of the A/B Wing in 1962 (with an addition in 1974), various smaller-scaled additions in the 1970s and construction of the patient tower north of the B/C Wing in 1982, and the Outpatient Center on the north side of 52<sup>nd</sup> Street in 1993. In 2003, work was completed on a renovation for the Emergency and Urgent Care Departments, and adding two new surgical suites, an on-site MRI, a main entrance pavilion and lobby. As shown in **Figure III-4**, in addition to the services provided on the campus, there are clinical services and hospital support functions located elsewhere in the Bay Area.

## **2. Master Plan Process**

Master planning on the campus has been an ongoing process; discussions for the most current plan began in 2010. The Master Plan process incorporates the requirements of SB 1953, described above. Between March 2012 and February 2014, seventeen community meetings were held to create dialogue with community members, provide information and updates on the Master Plan, and address concerns. A website ([www.CHOnext100.org](http://www.CHOnext100.org)) was also launched in April 2012 to provide information and resources about the master plan process. In addition, CHRCO held a community visioning event in July 2012, which was attended by neighbors, CHRCO patients, staff, and donors, and local community leaders. The community visioning event allowed for discussion of ideas, design concepts, and feedback of CHRCO's proposed development.

## **D. PROJECT OBJECTIVES**

The objectives of the proposed project include the following:

- Relocate, replace, and renovate existing acute care and other hospital operational functions at the existing campus in accordance with SB 1953:
  - Re-organize and re-allocate space at the CHRCO campus to improve the efficiency of in-patient and out-patient uses, and provide the maximum number of single-family rooms for patients currently in shared rooms or multi-bed wards on the CHRCO campus.
- Create new seismically compliant acute care facilities for the community that meet the seismic safety requirements of SB 1953 at the earliest practicable date and within mandated state deadlines.
- Construct new and replacement hospital facilities and associated infrastructure with minimal disruption to the community and existing hospital operations.
- Maintain designation as the Bay Area's Level 1 pediatric center with inclusion of emergency helicopters to provide 24-hour emergency service.
- Redesign campus access points and the internal street layout to improve and better organize site access, intermodal circulation, and pedestrian safety within the CHRCO campus and on

abutting City streets, and establish additional parking as necessary in a manner that creates safe and efficient pedestrian circulation within the CHRCO campus area.

- Design a project that:
  - Provides an environment that promotes patient-centered care and safety;
  - Ensures efficient operation of the hospital in a cost effective manner;
  - Provides state of the art energy efficiency, and contributes to Oakland's commitment to environmental stewardship by complying with LEED for Healthcare, CalGreen, Bay-Friendly Landscaping and other sustainable performance standards as appropriate, and to use best practices where compliance is not specifically mandated;
  - Creates a fresh, inviting gateway to a high quality-designed facility which expresses the unique nature of a children's hospital, and recognizes its place in the overall community fabric of Oakland; and
  - Integrates with the existing hospital massing and is sensitive to the lower scales surrounding neighborhood.
- Create better integration of hospital campus facilities to make hospital services more efficient, and to modernize hospital facilities to ensure the Hospital maintains its position as Oakland's pre-eminent children's hospital.
- Develop a Master Plan in partnership with our community. Working with neighbors, staff, physicians and patients of CHRCO, the Master Plan is shaped by direct input through community outreach. Listed below are a few of many design considerations agreed upon during interactive community visioning sessions:
  - Calming garden and quiet spaces;
  - Escape and play spaces;
  - Spaces for families, to enhance family-centered care; and
  - Use of environmental resources in an effort to create a sustainable facility for Oakland's families.

## E. PROPOSED PROJECT CHARACTERISTICS

The project includes a General Plan Amendment for the northeastern corner of the CHRCO site to redesignate the area to Institutional and a rezoning of the site to S-1 (Medical Center), which includes two private residences not owned by CHRCO. A Planned Unit Development (PUD) permit would also be requested, in addition to other land use entitlements.

The proposed project would be developed in two phases. Phase 1 would include the demolition of one residential building (currently owned by the hospital) to accommodate the construction of the 6-story Outpatient Center Building 2 (OPC2). Vehicular access into and out of the existing parking garage for the public and for hospital employees would be moved from 52<sup>nd</sup> Street to Martin Luther King Jr. Way with outbound and emergency access to 52<sup>nd</sup> Street. Phase 1 would include the demolition of rear yard additions on two residential buildings (currently owned by the hospital) to accommodate a new driveway to an existing maintenance area adjacent to the existing parking structure and OPC1 (see **Figure III-8a**). It would also include internal renovations in the OPC1 Building, the 1982 Tower, the D&T Building, and the Cardiac Catheterization Lab Building, as well as an addition to the Central Utility Plant to provide utilities to the renovated areas. Phase 1 would include the temporary displacement of approximately 30 on-site hospital beds during construction (as a result of interior renovations). It would include the net loss of 2 parking spaces. Fifteen new spaces would be

constructed at the new Emergency Department area at the ground floor of the new OPC2. Seventeen parking spaces would be removed within the existing parking garage to accommodate the relocation of the parking garage entrance. As part of Phase 1, approximately 1,541 square feet of use would be demolished, approximately 90,200 square feet would be constructed, and approximately 95,550 square feet would be renovated. Total Phase 1 project construction is anticipated to take approximately 58 months.

Phase 2 would include the demolition of the following structures: one residential building and one modular office building south of 53<sup>rd</sup> Street (currently owned by the hospital), the rear portions (façades would be maintained) of three residential buildings south of 53<sup>rd</sup> Street (owned by the hospital), the B/C Wing, Bruce Lyon Memorial Research Laboratory Building, HemOnc Administrative Building, helistop structure and trailers. Phase 2 would include construction of a Family Residence Building, Clinical Support Building, Link Building with a helistop on the roof, Patient Pavilion, expansion of the Central Utility Plant, and a Parking Structure (see **Figure III-8d**). New buildings constructed as part of Phase 2 would be two- to five- stories. Phase 2 would also include interior renovations to the 1982 Tower. In addition, site and circulation improvements would be constructed. The PG&E underground duct bank that extends east-west across the campus would be rerouted around the southern tip of the campus. Phase 2 would include the acquisition and improvement of a portion of the SR 24 right-of-way adjacent to the hospital on the east side and currently owned by Caltrans. Phase 2 would include an increase of 40 campus hospital beds (for a total of 210 beds from an existing baseline of 170 campus beds) and an increase of approximately 286 parking spaces on the CHRCO campus. As part of Phase 2, approximately 65,041 square feet of use would be demolished, approximately 309,000 square feet would be constructed, and approximately 42,342 square feet would be renovated. Phase 2 project construction is expected to take approximately 60 months.

The elements of Phase 1 and Phase 2 are described in greater detail below. Through the phasing diagrams included in **Figures III-8a through III-8d**, the construction and demolition in each phase is generally described. **Table III-3** provides a summary of the project by phase and total buildout and **Table III-4** provides a more detailed breakout of project construction and demolition.

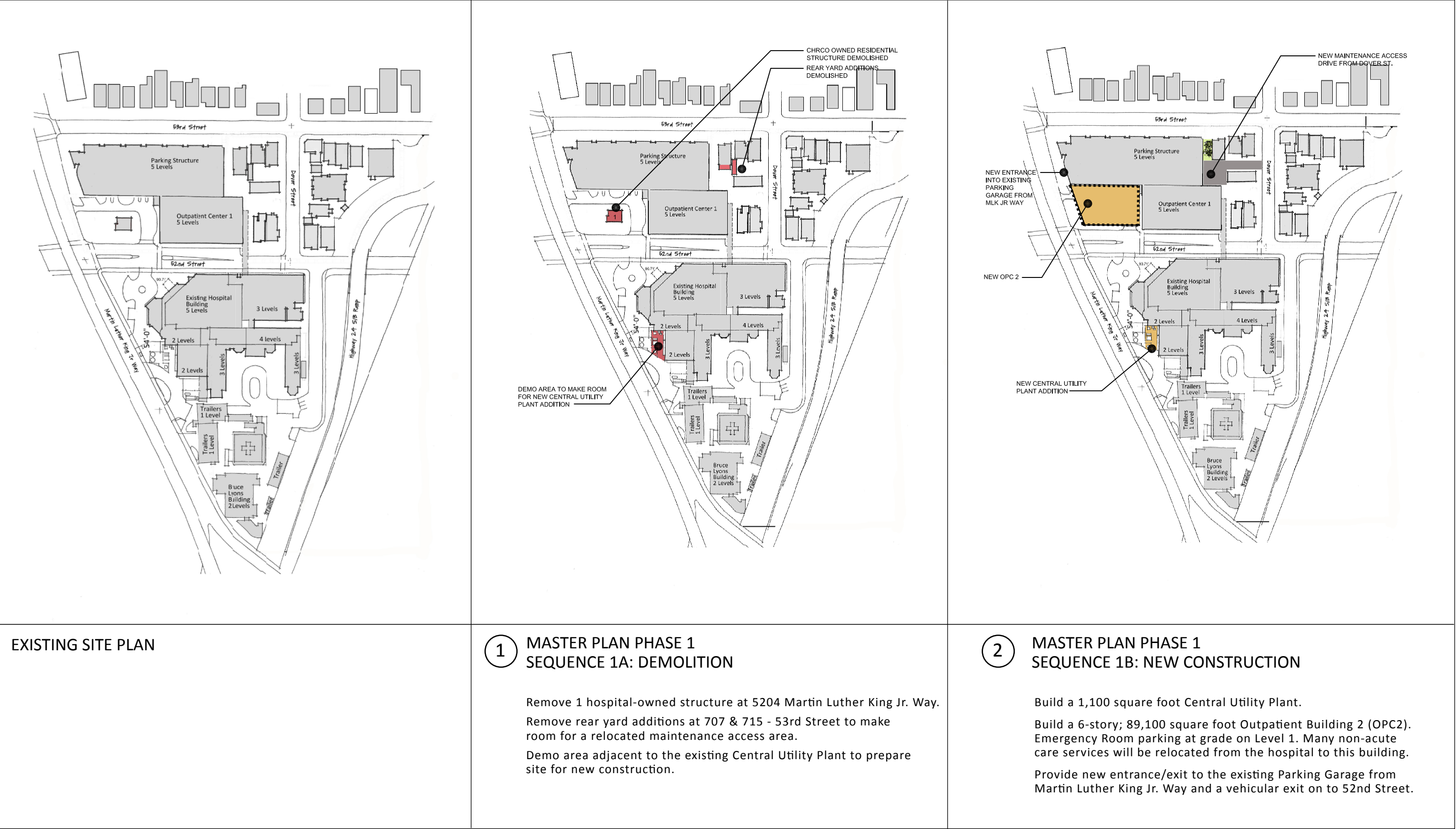
## 1. Phase 1

The elements of Phase 1 are described below. **Figure III-9** shows the proposed site plan and **Figures III-10a through III-10g** show each floor plan of OPC2. **Figure III-11** shows the proposed elevations of OPC2, and **Figure III-12** shows the proposed massing.

**a. Demolition.** A total of approximately 1,541 square feet of use would be demolished as part of Phase 1, including the following:

- The approximately 1,041 square foot residential building at 5204 Martin Luther King Jr. Way would be demolished to accommodate the construction of the 6-story Outpatient Center Building 2 (OPC2). This building is owned by the hospital and used for offices.
- Approximately 500 square feet of rear yard additions on residential buildings at 715 53<sup>rd</sup> Street and 707 53<sup>rd</sup> Street would be demolished to accommodate a new driveway to an existing maintenance area adjacent to the existing parking structure and OPC1. These buildings are owned by the hospital and used for offices.<sup>10</sup>

<sup>10</sup> Neither residence is individually eligible for the California Register; however, both are contributors to the 55<sup>th</sup> and Dover Residential District. Please see Section IV.C. Cultural and Historic Resources for additional discussion of the built environment cultural resources.



LSA

FIGURE III-8a

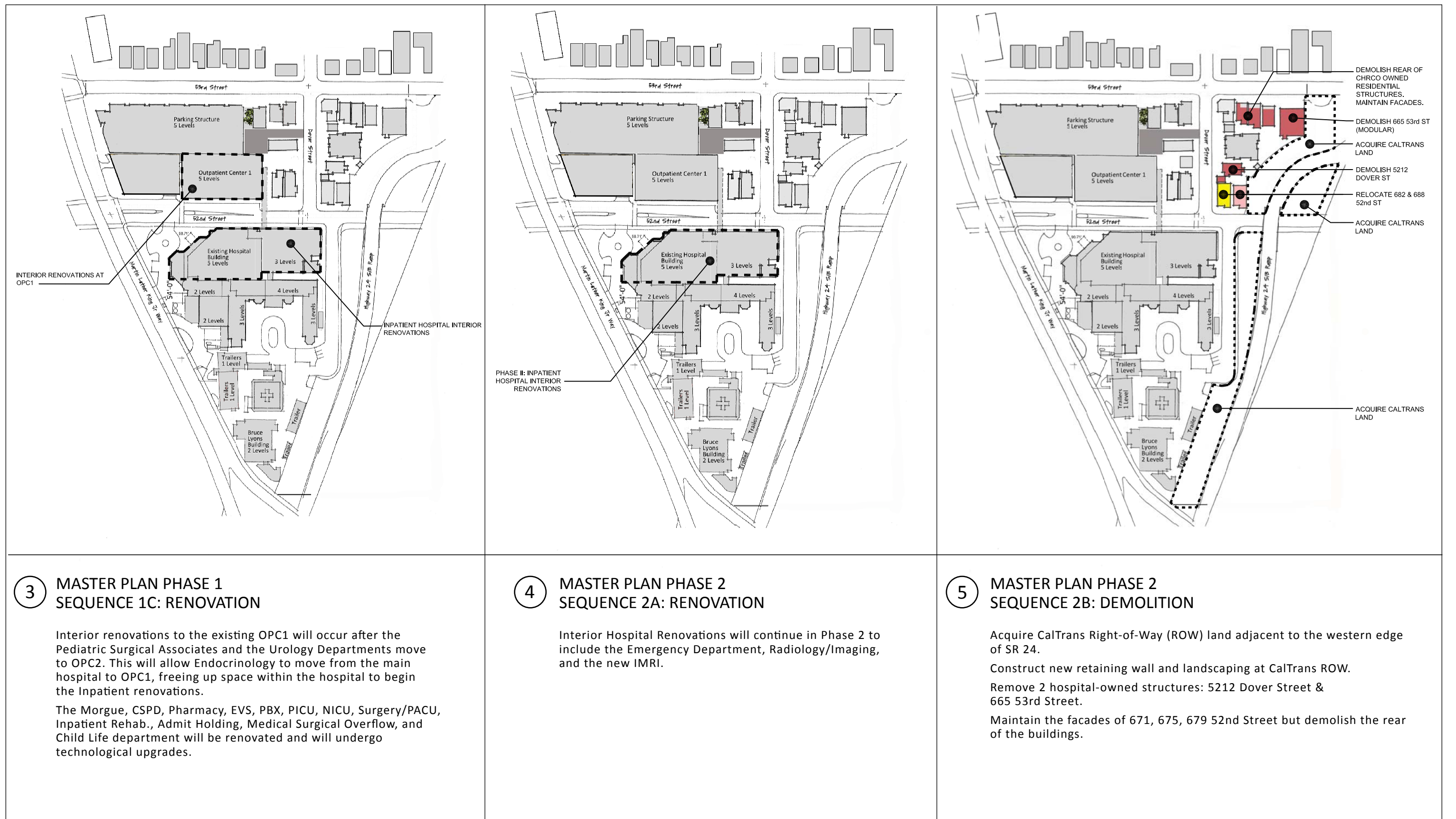
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SOURCE: HDR/TAYLOR, JUNE 2014.

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LSA

FIGURE III-8b

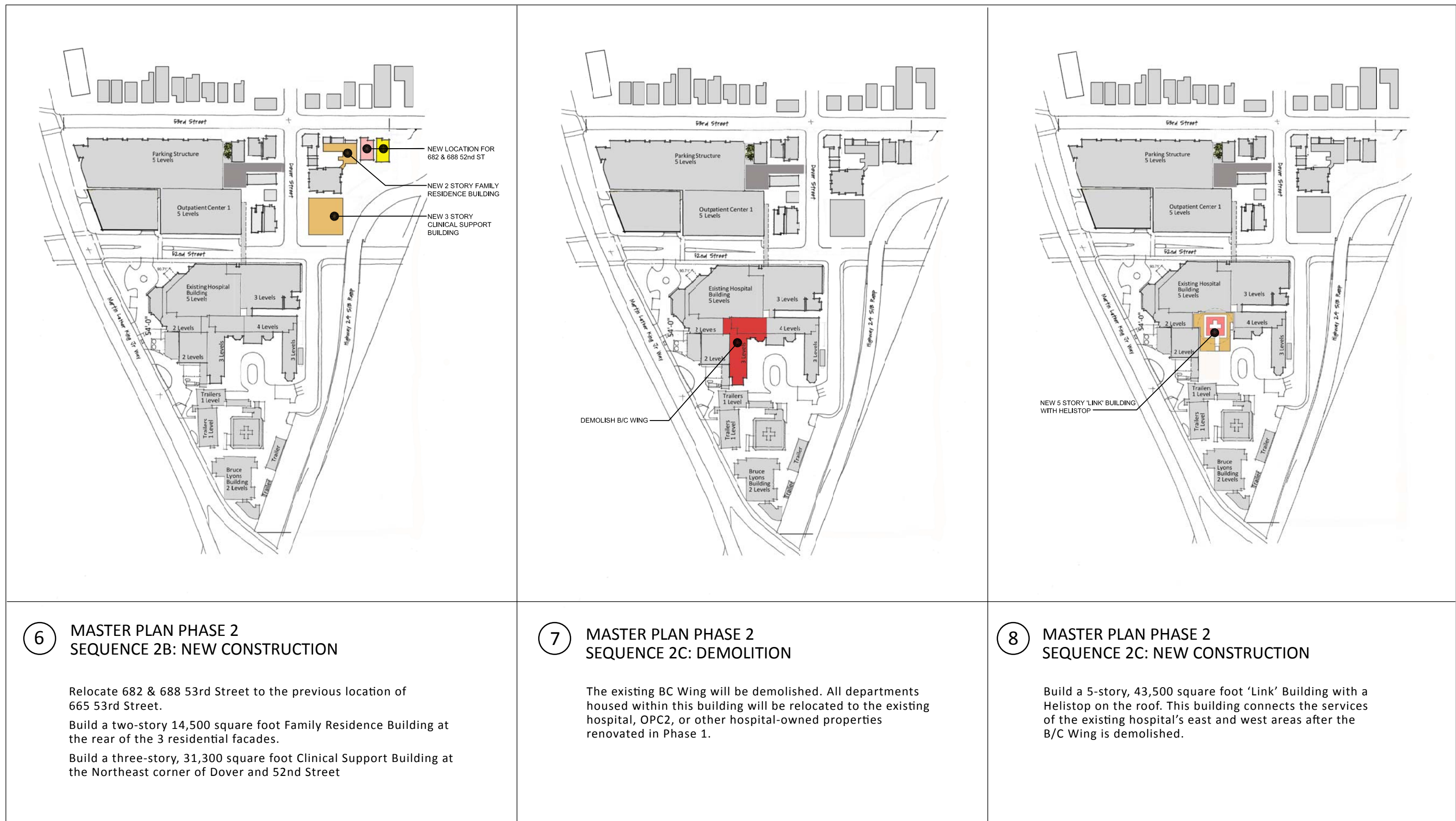
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SOURCE: HDR/TAYLOR, JUNE 2014.

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CHRCO Campus Master Plan Project EIR  
Phasing Diagram - Sequence 1C through 2B

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LSA

FIGURE III-8c

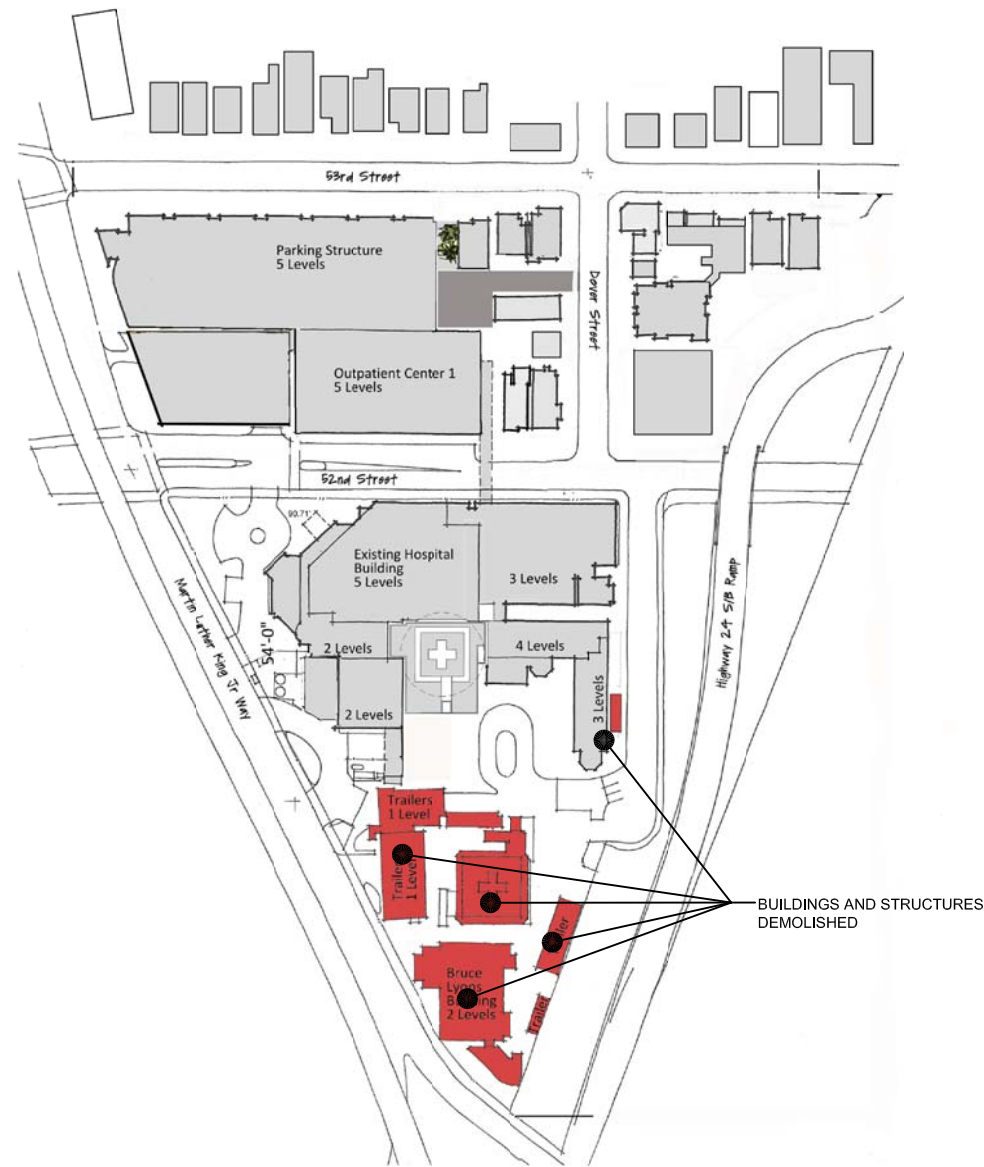
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SOURCE: HDR/TAYLOR, JUNE 2014.

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## 9 MASTER PLAN PHASE 2 SEQUENCE 2D: DEMOLITION

The existing Trailers, Bruce Lyon Memorial Research Center, HemOnc Administration Building, and Helistop structure are demolished.



## 10 MASTER PLAN PHASE 2 SEQUENCE 2E: NEW CONSTRUCTION

Re-route PG&E Utility Easement which currently runs east-west across southern portion of campus to around the southern tip of hospital property.

Build a 4-Level, 114,900 square foot, 334-stall parking structure. This structure will provide parking to support the inpatient population of the campus.

Build a 3,800 square foot Central Utility Plant expansion to the Phase 1 Central Utility Plant. This expansion will provide service to the new Patient Pavilion.

Build a 5-story, 101,000 square foot Patient Pavilion.

Site Improvements south of 52nd Street along with the existing drop-off area, e.g. south side of Dover St.

Convert existing semi-private patient rooms on the fifth floor to single-bed patient rooms.

LSA

FIGURE III-8d

NOT TO SCALE

SOURCE: HDR/TAYLOR, JUNE 2014.

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CHRCO Campus Master Plan Project EIR  
Phasing Diagram - Sequence 2D and 2E

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**Table III-3: Proposed Development by Phase and Total Buildout**

|   | Existing | Proposed Increase Phase 1 <sup>a</sup> | Campus Total with Implementation of Phase 1 (Existing + Phase 1) | Proposed Increase Phase 2 <sup>a</sup> | Proposed Increase Phase 1 + Phase 2 | Campus Total at Buildout (Existing + Phase 1 + Phase 2) |
|---|----------|--|--|--|-------------------------------------|---|
| Site Acres  | 11.0     | –                                      | 11.0   | 1.5                                    | 1.5                                 | 12.5  |
| Demolished Building Area                              |          | (1,541)                                |  | (65,041)                               | (66,582)                            |   |
| New Building Area                                     |          | 90,200                                 |  | 309,000                                | 399,200                             |   |
| Net Building Area (sq. ft.)                           | 692,416  | 88,659                                 | 781,075  | 243,959                                | 332,618                             | 1,025,034   |
| Removed Parking Spaces                                |          | (17)                                   |  | (48)                                   | (67)                                |   |
| New Parking Spaces                                    |          | 15                                     |  | 334                                    | 349                                 |   |
| Net Parking Spaces                                    | 1,107    | (2)                                    | 1,105  | 286                                    | 284                                 | 1,391   |
| On-Site Hospital Beds (#)                             | 170      | (30)                                   | 140  | 70                                     | 40                                  | 210   |
| Off-Site Hospital Beds (#)                            | 20       | 20                                     | 40   | (40)                                   | (20)                                | 0   |
| Patients and Outpatient Visitors <sup>b</sup> (daily) | 875      | 43                                     | 918  | 70                                     | 113                                 | 988   |
| Hospital (Inpatient) Visitors <sup>c</sup> (daily)    | 604      | 0                                      | 604  | 157                                    | 157                                 | 761   |
| Total Staff <sup>d</sup> (daily)                      | 2,166    | 25                                     | 2,191  | 180                                    | 205                                 | 2,371   |

<sup>a</sup> Phase 1 is estimated to be completed in 58 months; Phase 2 is anticipated to begin in 2020 and is estimated to be completed in 60 months.

<sup>b</sup> Includes inpatient census, emergency department patients, and outpatient visitors.

<sup>c</sup> Includes visitors (parents, siblings, vendors, and contractors).

<sup>d</sup> Staff includes Outpatient staff, hospital staff, physicians, scientists and “lease” employees.

Source: HDR, November 2013

**Table III-4: Proposed Construction and Demolition**

|  | Use              | Approximate Square Footage |
|--|------------------|----------------------------|
| <b>PHASE 1</b>   |                  |                            |
| <i>Construction</i>                                      |                  |                            |
| Outpatient Center 2 Building (OPC2)                      | Medical Office   | 82,100                     |
| Outpatient Center 2 Building (OPC2)                      | Parking          | 7,000                      |
| Central Utility Plant                                    | Utility          | 1,100                      |
| <b>Total New Construction</b>                            |                  | <b>90,200</b>              |
| <i>Demolition</i>  |                  |                            |
| 707 53 <sup>rd</sup> Street                              | Residential      | 500                        |
| 5204 Martin Luther King Jr. Way                          | Office           | 1,041                      |
| <b>Total Demolition</b>                                  |                  | <b>1,541</b>               |
| <b>Phase 1 Net New Construction</b>                      |                  | <b>88,659</b>              |
| <b>PHASE 2</b>   |                  |                            |
| <i>Construction</i>                                      |                  |                            |
| Family Residence Building                                | Residential      | 14,500                     |
| Clinical Support Building                                | Office           | 31,300                     |
| Link Building  | Hospital         | 43,500 <sup>a</sup>        |
| Patient Pavilion   | Hospital         | 101,000                    |
| Central Utility Plant                                    | Utility          | 3,800                      |
| Parking Garage   | Parking          | 114,900                    |
| <b>Total New Construction</b>                            |                  | <b>309,000</b>             |
| <i>Demolition</i>  |                  |                            |
| 665 53 <sup>rd</sup> Street                              | Office           | 2,800                      |
| 677-679 53 <sup>rd</sup> Street (front façade to remain) | Office           | 2,106                      |
| 675 53 <sup>rd</sup> Street (front façade to remain)     | Office           | 1,277                      |
| 671 53 <sup>rd</sup> Street (front façade to remain)     | Office           | 1,030                      |
| 5212 Dover Street  | Vacant           | 2,253                      |
| B/C Wing   | Hospital         | 33,510                     |
| Trailer (Facilities Design & Construction)               | Office           | 480                        |
| Trailer (ED Administration)                              | Office           | 2,108                      |
| Trailer (HemOnc)   | Office           | 628                        |
| Trailer (Education/HIS)                                  | Office           | 1,779                      |
| Bruce Lyon Memorial Research Laboratory Building         | R&D/Clinical Lab | 12,570                     |
| Bruce Lyon Addition/HemOnc Office                        | Office           | 4,500                      |
| <b>Total Demolition</b>                                  |                  | <b>65,041</b>              |
| <b>Phase 2 Net New Construction</b>                      |                  | <b>243,959</b>             |
| <b>PROJECT TOTAL</b>                                     |                  | <b>332,618</b>             |

<sup>a</sup> Link Building square footage does not include helistop.



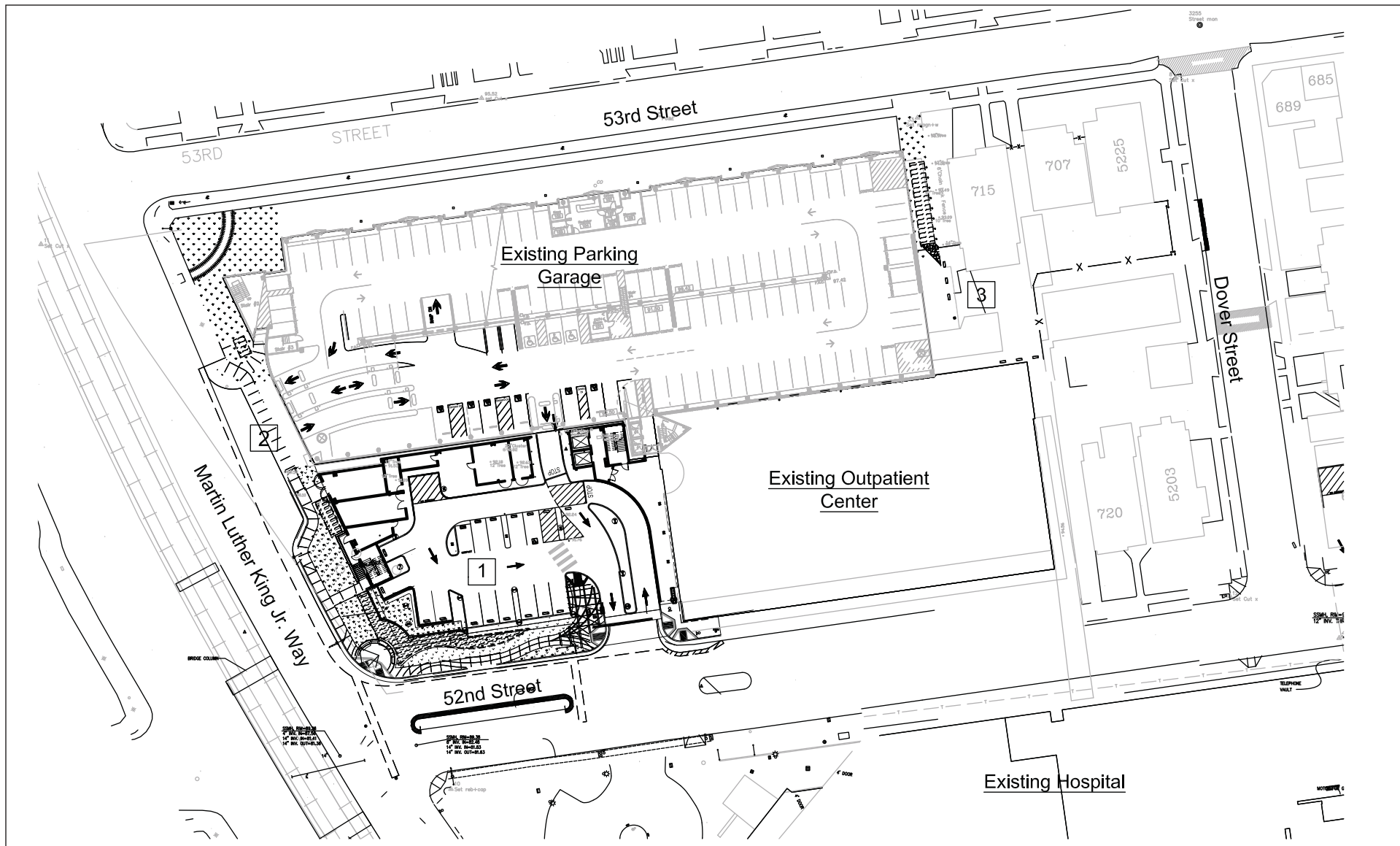


FIGURE III-9

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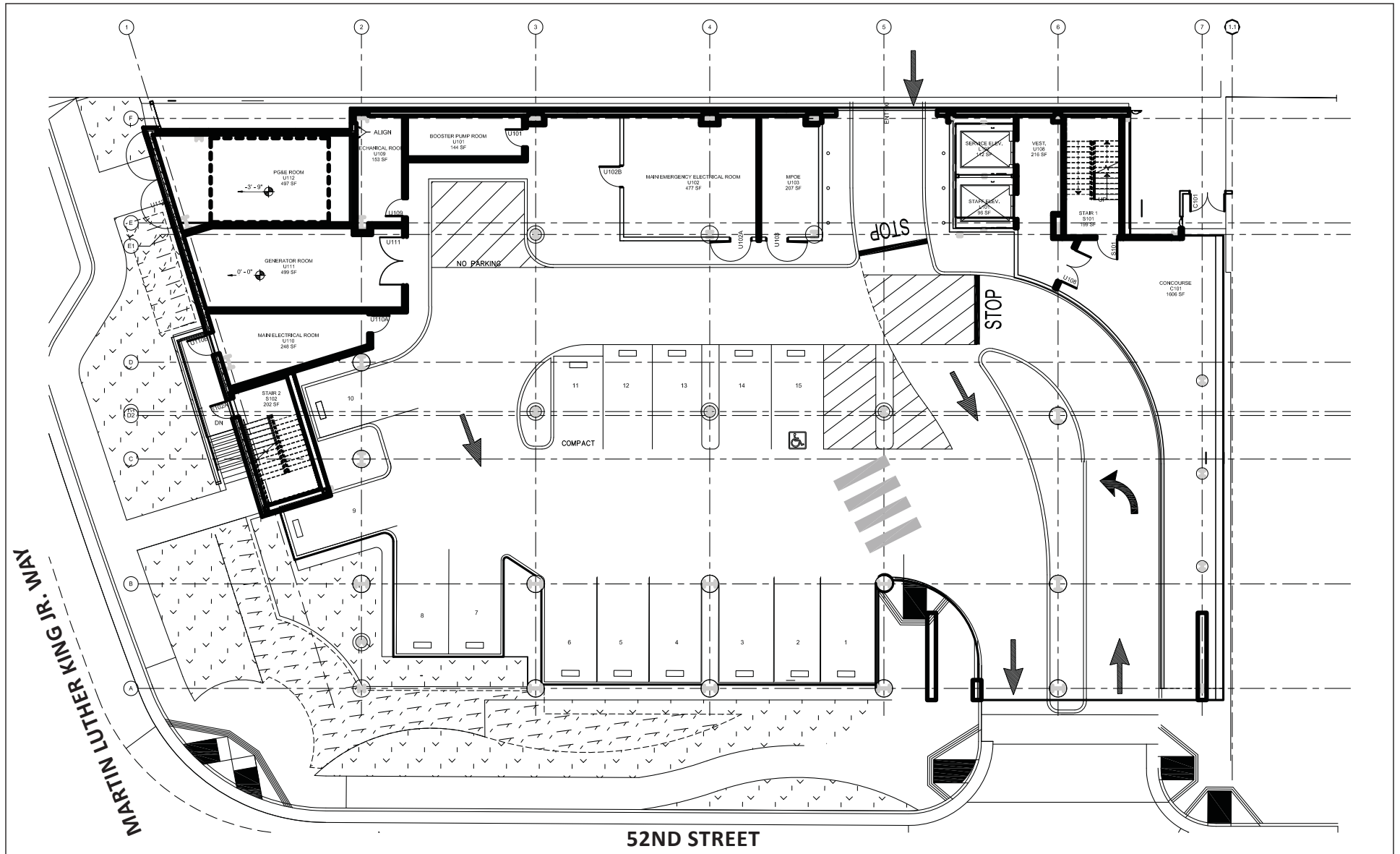
### SCOPE OF WORK

- 1 NEW EMERGENCY DEPARTMENT PARKING WITH OPC 2 ABOVE
- 2 NEW ENTRANCE/EXIT TO EXISTING PARKING GARAGE FROM MLK JR WAY
- 3 NEW MAINTENANCE ACCESS AREA FROM DOVER ST

CHRCO Campus Master Plan Project EIR  
Phase 1  
OPC2 Proposed Site Plan

SOURCE: HDR/TAYLOR, 2014.

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FIGURE III-10a

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SOURCE: HDR/TAYLOR, 2014.

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CHRCO Campus Master Plan Project EIR

Phase 1

Proposed Emergency Department Parking - Level 1



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**Department Legend**

|  |  |
|--|--|
| <span style="color: green;">■</span> Admin Support         | <span style="color: lightblue;">■</span> Patient Care              |
| <span style="color: grey;">■</span> Building Support       | <span style="color: yellow;">■</span> Public                       |
| <span style="color: lightgrey;">■</span> Corridors         | <span style="color: orange;">■</span> Staff Support                |
| <span style="color: yellow;">■</span> Non-Clinical Support | <span style="color: darkgrey;">■</span> Staff Vertical Circulation |

FIGURE III-10b

CHRCO Campus Master Plan Project EIR

Phase 1

Proposed OPC2 Floor Plan - Level 2

SOURCE: HDR/TAYLOR, 2014.

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**Department Legend**

|  |  |
|--|--|
| <span style="color: green;">■</span> Admin Support         | <span style="color: blue;">■</span> Patient Care                   |
| <span style="color: grey;">■</span> Building Support       | <span style="color: yellow;">■</span> Public                       |
| <span style="color: lightgrey;">■</span> Corridors         | <span style="color: orange;">■</span> Staff Support                |
| <span style="color: yellow;">■</span> Non-Clinical Support | <span style="color: darkgrey;">■</span> Staff Vertical Circulation |

FIGURE III-10c

CHRCO Campus Master Plan Project EIR

Phase 1

Proposed OPC2 Floor Plan - Level 3

SOURCE: HDR/TAYLOR, 2014.

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**Department Legend**

|   |  |
|---|--|
| <span style="color: green;">■</span> Admin Support              | <span style="color: blue;">■</span> Patient Care                   |
| <span style="color: grey;">■</span> Building Support            | <span style="color: yellow;">■</span> Public                       |
| <span style="color: lightgrey;">■</span> Corridors              | <span style="color: orange;">■</span> Staff Support                |
| <span style="color: lightyellow;">■</span> Non-Clinical Support | <span style="color: darkgrey;">■</span> Staff Vertical Circulation |

FIGURE III-10d

CHRCO Campus Master Plan Project EIR

Phase 1

Proposed OPC2 Floor Plan - Level 4

SOURCE: HDR/TAYLOR, 2014.

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**Department Legend**

- |   |   |
|---|---|
| <span style="display: inline-block; width: 15px; height: 15px; background-color: #90EE90; border: 1px solid black; margin-right: 5px;"></span> Admin Support        | <span style="display: inline-block; width: 15px; height: 15px; background-color: #ADD8E6; border: 1px solid black; margin-right: 5px;"></span> Patient Care               |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: #A9A9A9; border: 1px solid black; margin-right: 5px;"></span> Building Support     | <span style="display: inline-block; width: 15px; height: 15px; background-color: #FFDAB9; border: 1px solid black; margin-right: 5px;"></span> Public                     |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: #D3D3D3; border: 1px solid black; margin-right: 5px;"></span> Corridors            | <span style="display: inline-block; width: 15px; height: 15px; background-color: #FFA07A; border: 1px solid black; margin-right: 5px;"></span> Staff Support              |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: #FFFFE0; border: 1px solid black; margin-right: 5px;"></span> Non-Clinical Support | <span style="display: inline-block; width: 15px; height: 15px; background-color: #696969; border: 1px solid black; margin-right: 5px;"></span> Staff Vertical Circulation |

FIGURE III-10e

CHRCO Campus Master Plan Project EIR

Phase 1

Proposed OPC2 Floor Plan - Level 5

SOURCE: HDR/TAYLOR, 2014.

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FIGURE III-10f

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NOT TO SCALE



**Department Legend**

|                      |                            |
|----------------------|----------------------------|
| Non-Clinical Support | Staff Support              |
| Building Support     | Staff Vertical Circulation |
| Corridors            |                            |

*CHRCO Campus Master Plan Project EIR*  
Phase 1  
Proposed OPC2 Floor Plan - Level 6

SOURCE: HDR/TAYLOR, 2014.

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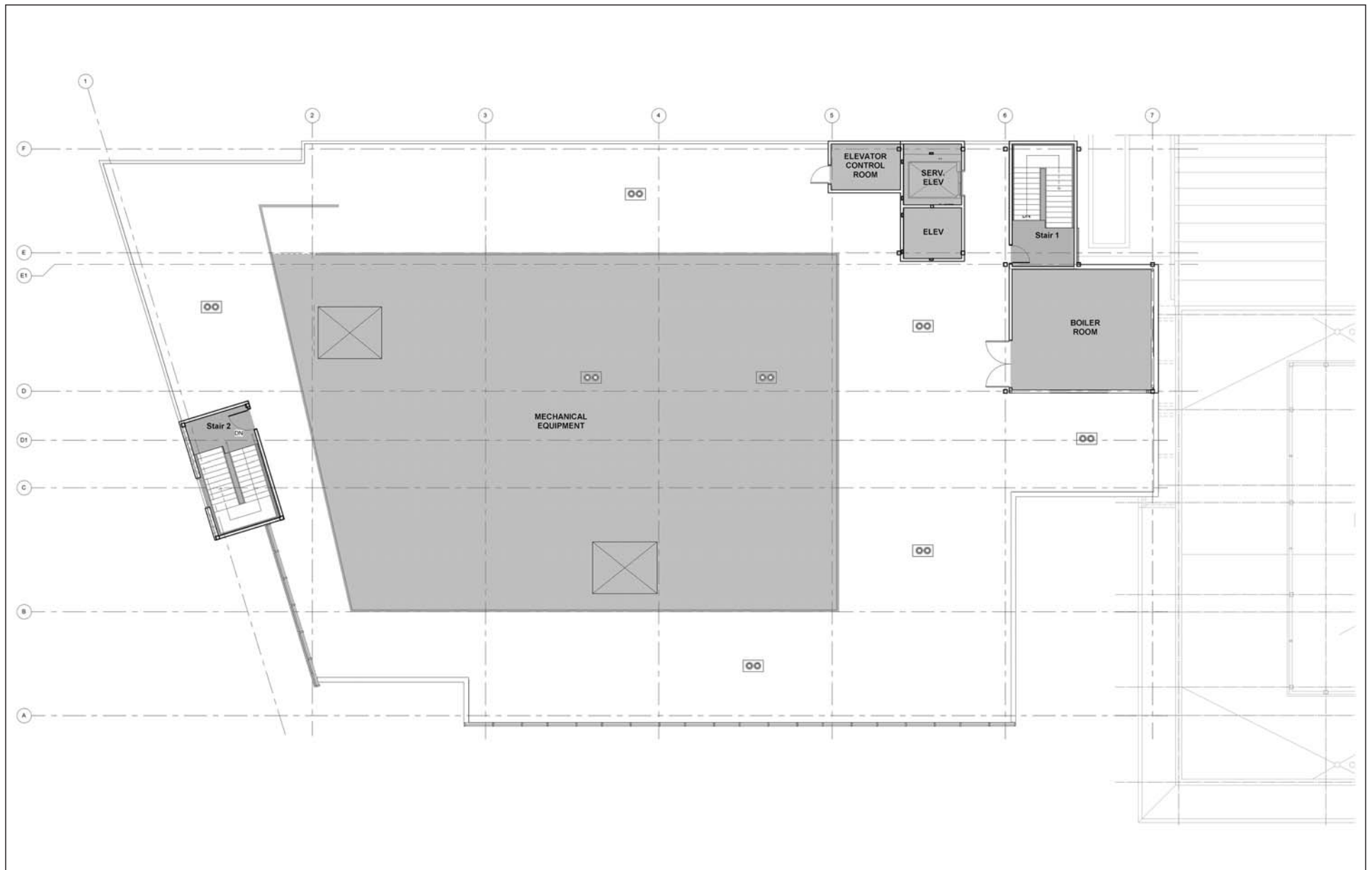


FIGURE III-10g

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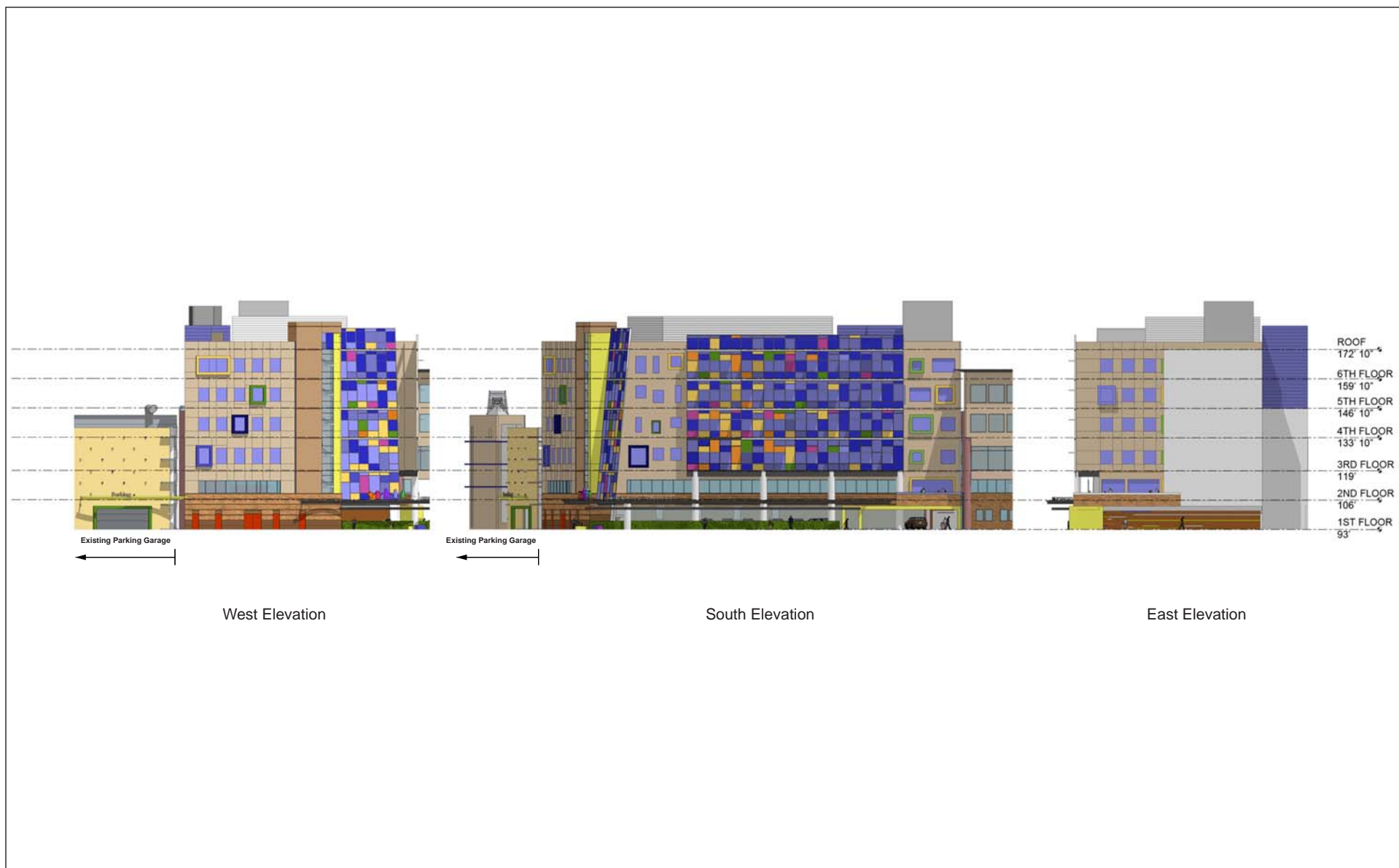
SOURCE: HDR/TAYLOR, 2014.

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CHRCO Campus Master Plan Project EIR  
Phase 1

Proposed OPC2 Floor Plan - Roof Level





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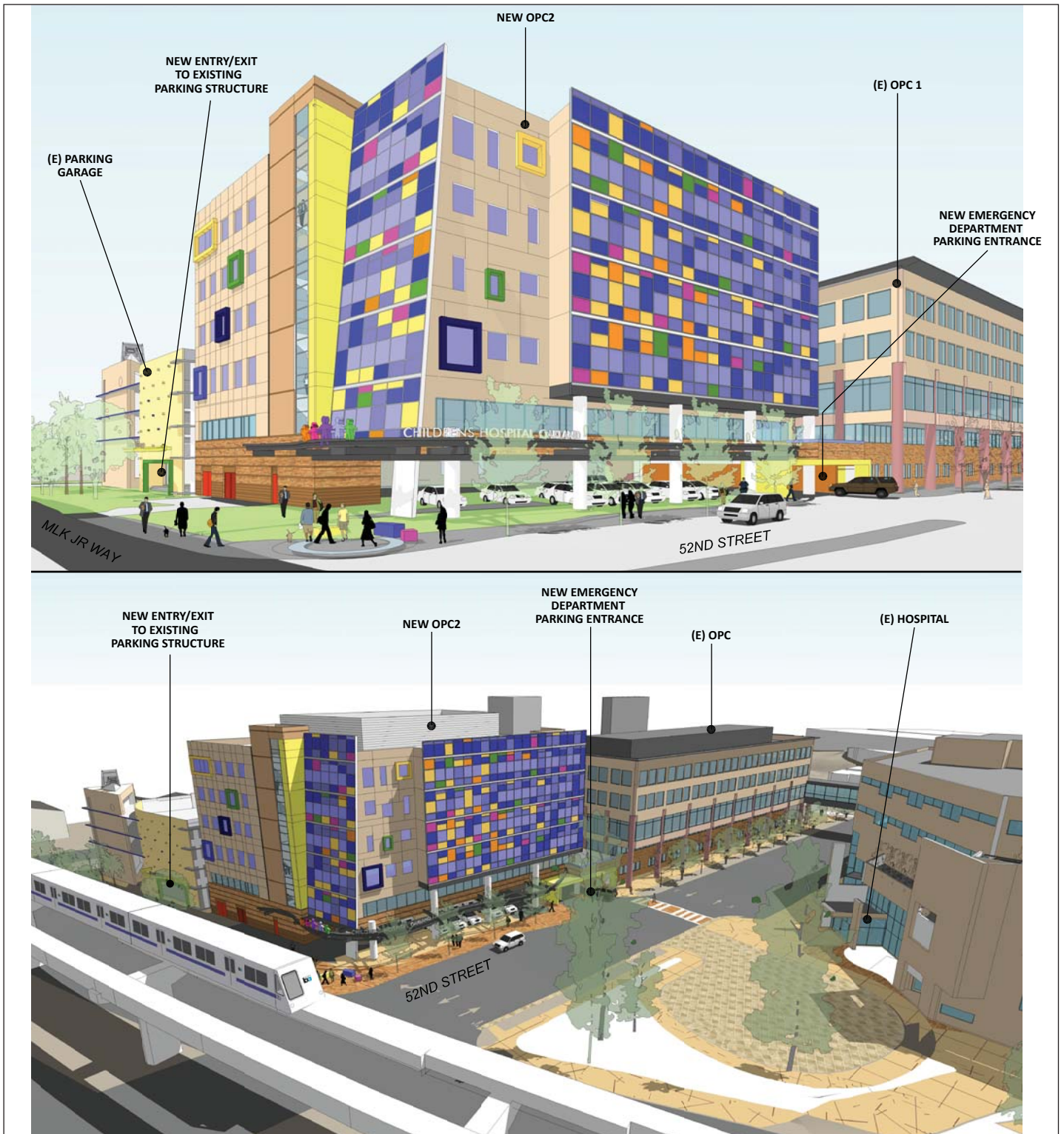
FIGURE III-11

NOT TO SCALE

CHRCO Campus Master Plan Project EIR  
Phase 1  
Proposed OPC2 Elevations

SOURCE: HDR/TAYLOR, 2013. [A1.31]

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LSA

FIGURE III-12

NOT TO SCALE

CHRCO Campus Master Plan Project EIR  
Phase 1  
Proposed OPC2 Massing

SOURCE: HDR/TAYLOR, 2014.

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Approximately 19 trees, as well as site landscaping, would be removed to accommodate the proposed OPC2, the Central Utility Plant, and the expanded access to the maintenance area. An additional 7 trees could be affected during the construction period, such that they may need to be removed if they cannot be adequately protected.

**b. Outpatient Center Building 2.** The OPC2 building would provide space for outpatient clinical visits or treatment that does not require an overnight stay in the hospital; such spaces include outpatient rehabilitation, neurology, neurosurgery, cardiology, and a clinical laboratory. (All of these uses are currently located in the hospital and would be relocated to OPC2.) Phase 1 of the proposed project would include construction of OPC2 west of the existing Outpatient Center Building 1 (OPC1). The approximately 89,100 gross square foot OPC2 would be six stories, approximately 79 feet 6 inches from top of grade to the top of the roof. Each floor would include approximately 14,850 square feet of net space and would be directly connected to OPC1 through pedestrian cross-over bridges or other connectors. OPC2 is proposed functionally as an extension of OPC1. Space in OPC1 currently occupied by the Pediatric Surgical Associates and Urology Department would be vacated to accommodate minor renovations and some cosmetic upgrades to refresh existing examination rooms and to provide space for the Endocrinology Department, which is currently located on the first floor of the D&T Building. During Phase 1 of the project, the Endocrinology Department would be relocated to space on the fourth floor of OPC1 currently occupied by the Pediatric Surgical Associates and Urology Department to collocate it with all other outpatient services, thereby creating better operational efficiencies for the hospital's outpatient services. The Pediatric Surgical Associates and Urology Department would relocate to the fourth floor of the new OPC2 to improve clinical flow within the hospital. In addition, the Neurosurgery Department currently located on the fifth floor of OPC1 will be relocated to the fifth floor of OPC2. OPC2 would include exam rooms, treatment rooms, procedure rooms, occupational therapy rooms, physician offices, cubicles, clinical lab and associated space including waiting rooms, reception areas, conference rooms, and break rooms. **Table III-5** provides a description of the proposed uses in OPC2.

The ground floor of OPC2 would include 15 parking spaces for the emergency department. The parking lot would be signed and utilized for patients only. There would be no fee to park in this lot; it would be monitored 24 hours a day by on-site security to ensure it is used only by emergency department patients. Vehicular access to the emergency department parking lot would be provided from 52<sup>nd</sup> Street. Pedestrian access to OPC2 would be provided adjacent to the vehicular entrance to the parking garage, as well as through OPC1, the main pedestrian entrance of which is on 52<sup>nd</sup> Street. Staff and patients who come to the campus via public transit, bicycle or walking would access OPC2 from 52<sup>nd</sup> Street.

Based on preliminary conceptual designs, the elevation of OPC2 along 52<sup>nd</sup> Street would be designed to work with the original OPC1, to create a sense of harmony and integration. As the building elements get farther from OPC1 and turn along Martin Luther King Jr. Way, its architecture would change. Here, the building would be clad primarily in multi-colored glass on its upper floors. The building's base and stair tower would be faced with brick and portions of the upper floors would be smooth plaster with punched openings, similar to the upper floors of OPC1.

New normal power service for OPC2 would be provided via a PG&E transformer located on the ground floor, with the transformer primary tied into PG&E's underground line on Martin Luther King Jr. Way. A new 600kW standby diesel generator would be located within a generator room on the ground floor of OPC2, to serve OPC2 emergency loads.

**Table III-5: Proposed Uses in Outpatient Center Building 2**

| Department                            | Existing Location          | Existing Area (Square Feet) | Proposed Location | Area of Renovation (Square Feet) | Net New Area (Square Feet) | Existing Exam Rooms | Proposed Exam Rooms | Additional Description   |
|---------------------------------------|----------------------------|-----------------------------|-------------------|----------------------------------|----------------------------|---------------------|---------------------|--|
| Outpatient Rehabilitation             | Hospital BC Wing-2nd Floor | 6,957                       | OPC2-2nd floor    | 0                                | 11,787                     | 4                   | 8                   | The new space in OPC2 would allow the outpatient component to be separated from Inpatient. The space includes an outpatient rehab gym. There is also an outdoor gym area.  |
| Cardiology                            | Hospital-2nd Floor         | 6,166                       | OPC2-3rd floor    | 0                                | 9,620                      | 5                   | 5                   | The Cardiology Department would move from the Main Hospital 2nd floor to create additional space for the renovated PICU department.  |
| Pediatric Surgical Associates         | OPC1-4th Floor             | 2,994                       | OPC2-4th floor    | 0                                | 5,133                      | 3                   | 5                   | The existing Pediatric Surgical Associates & Urology Departments are currently undersized to function efficiently. These departments would move to the new OPC2 to create space in OPC1 for Endocrinology.   |
| Urology                               | OPC1-4th Floor             | 2,095                       | OPC2-4th floor    | 0                                | 3,076                      | 2                   | 3                   |  |
| Neurology                             | Hospital-1st Floor         | 4,208                       | OPC2-5th floor    | 0                                | 5,834                      | 6                   | 6                   | The Neurology Department currently resides in the Main Hospital Level 1. It would move to OPC2 to allow the new CSPD & Morgue renovation.  |
| Neurosurgery                          | OPC1-5th Floor             | 1,529                       | OPC2-5th floor    | 0                                | 3,935                      | 2                   | 4                   | The Neurosurgery Department would be moved to OPC2 Level 5 to stay in close proximity to Neurology and to provide space that is more functional and efficient.   |
| Laboratory                            | Bruce Lyon                 | 7,679                       | OPC2-6th floor    | 0                                | 12,826                     | NA                  | NA                  | The Bruce Lyon building would be demolished to create space for the new Patient Pavilion and existing uses would be relocated to a to-be-determined off-site location. <sup>a</sup>  |
| Facility Design & construction office | Trailer                    | 480                         | OPC2-3rd floor    | 0                                | 541                        | NA                  | NA                  | The Construction & Development trailer would need to be removed to create space for the Phase 2 site improvements.   |
| Endocrinology                         | Hospital-1st Floor         | 3,326                       | OPC1-4th floor    | 5077                             | 0                          | 6                   | 6                   | Relocated into the Pediatric Surgical Associates/ Urology space in OPC1. Office space along the south and the exam rooms to be cosmetically renovated only. The administrative space and the support space at the front of the clinic would be remodeled. Space vacated by Endocrinology would allow for the CSPD & Morgue renovation. |

<sup>a</sup> The Genomics & Stem Cell program may be relocated to an off-site campus location prior to the demolition of the Bruce Lyon Memorial Research Laboratory. This program is a research lab and may not be integrated into the clinical lab functions that would remain on campus. The research program may be relocated to the CHORI campus if space is available. Because research laboratories are highly dependent upon grant funding to operate, it is not possible to predict with any accuracy whether space at CHORI will be available in 2020. If the lab cannot be moved to CHORI then other relocation options would be explored.

Source: HDR, April 2014.

OPC2 would be designed to meet LEED (Leadership in Energy and Environmental Design) Silver certification levels for LEED Healthcare, 2009. Sustainable strategies currently incorporated into the building design include:

- Efficient Active Systems: Efficient mechanical and electrical systems would improve energy efficiency
- PBT Source Reduction-Mercury, Cadmium & Lead: Persistent Bioaccumulative and Toxic (PBT) Chemicals associated with the life cycle of building materials to be eliminated or greatly reduced
- Water Conservation: Low-flow fixtures and process water systems would reduce building water use
- Native Landscaping: Bay-friendly and native landscaping for much of the site would provide habitat and reduces water use for irrigation
- Cool Roofs: Reflective roofing would reduce heat-islands and solar heat gain
- Envelope Design: Efficient, insulated envelope and roof construction would reduce energy use
- Sustainable Materials: Sustainable materials would be used to provide a healthy indoor environment and reduce impacts to the environment
- Eliminate Light Pollution: Exterior site lighting would be minimal to eliminate impacts on the night sky
- Natural Light & Views: Appropriate glazing would provide natural light for interior spaces and views to the outdoors
- Outdoor Access: Exterior courtyard would provide access to outdoor spaces and places of respite for patients, staff, and visitors
- Public Transportation: Public bus lines are in close proximity to the CHRCO campus and a courtesy shuttle takes hospital visitors to and from BART.
- Bicycle Access: Secure bicycle racks are provided for staff and visitors to the site
- Sustainable Education: Incorporated into site features and in project signage
- Community Connectivity: Site is closely connected to many community services

**c. New Entrance to Existing Parking Garage.** As part of Phase 1, a new entrance and exit for the public and for hospital employees to the existing parking garage would be constructed on Martin Luther King Jr. Way. Ingress to the existing parking garage would no longer be provided on 52<sup>nd</sup> Street; the existing inbound access on 52<sup>nd</sup> Street would be replaced with access to the proposed Emergency Department parking lot. Outbound and emergency access would be provided from the existing parking garage, through the Emergency Department lot, to 52<sup>nd</sup> Street. To accommodate the access and allow room for queuing inside the garage and not on Martin Luther King Jr. Way, 17 physicians and employees parking spaces would be eliminated. As described under section A.3. Project Site Existing Characteristics, the existing parking garage includes spaces for the public, physicians and employees of the hospital, and there is a charge to park there. As part of the reconfiguration of garage access, new bicycle parking would be provided.

**d. Central Utility Plant.** HVAC (heating, ventilating and air conditioning) systems are currently housed in a central utility plant at the southwest corner of the main hospital. Included in the central utility plant is a chiller plant that is nearing the end of its useful life. A new 1,100 square-foot chiller plant would be constructed in Phase 1, to replace the existing chiller plant and support the interior hospital renovations described below. The Central Utility Plant would consist of two 750-ton water cooled chillers (one installed under Phase 1 and one added later for redundancy<sup>11</sup>) with two cells induced draft cooling towers (both installed under Phase 1) and associated pumps that would be sized for 100 percent flow. Existing air cooled chillers on the kitchen roof and D&T Building roof may remain to provide reserve and back-up capacity during Phase 1 and would be demolished at the end of Phase 1.

The existing high temperature water boilers located in the Central Utility Plant would be retained and would continue to serve all of the existing buildings and initial Phase 1 renovation projects. Additional two condensing water boilers (N+1), 4 million btu/hr output each, would be added in the existing plant providing a total of 12 million btu/hr heating plant capacity for space heating (2 existing boilers at 4 million btu/hr each and 1 new boiler at 4 million btu/hr). The heating water system would be configured as primary and variable secondary configuration and would have new distribution pumps. The existing high temperature water boilers would be retrofitted and operate as low temperature heating water boilers to reduce energy consumption. Phased construction would need to be designed and planned to allow conversion of the high temperature boilers to low temperature heating water loop due to lower pressure rating components. New heating water boilers would be forced draft gas and fuel oil fired and comply with Bay Area Air Quality Management District (BAAQMD) requirements.

Existing steam generators located in the Central Utility Plant would remain to provide steam service to the 1982 Tower and to support the D&T Building during Phase 1 renovation.

Two existing semi-instantaneous water heaters located at the Central Utility Plant would be replaced with two new 1,000 gallons water heaters to serve the hospital's domestic hot water system.

To serve the new chiller plant, normal and emergency power and fire alarm systems would be extended from the existing central utility plant; new overhead conduits would be provided to connect the existing central utility plant to the new chiller plant, and new distribution equipment would be provided in the existing passageway north of the existing central utility plant. Piping for the chilled water, heating water, steam and condensate would be rerouted over the roof of the Cafeteria, and tower to connect to services in the D&T Building, allowing demolition of the B/C Wing (proposed in Phase 2). Similarly water supply, water heating, sanitary waste/vent, storm drainage, natural gas, oxygen, breathing air and vacuum systems would be reconfigured to permit B/C Wing separation and demolition. New normal power distribution, emergency power distribution, and fire alarm systems would be provided in the A/B Wing to serve the existing A/B Wing loads, to segregate those systems from the B/C Wing, allowing demolition of the B/C Wing. Emergency power conduits serving D&T Building mechanical equipment, currently routed through the B/C Wing, will be rerouted from the transfer switch in the existing central utility plant through the 1982 Tower to connect to services at the D&T Building roof.

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<sup>11</sup> Typically one chiller operates at a time, the second chiller would be used if the first chiller is unable to operate. However, both chillers could be operated at 50 percent capacity.

**e. Interior Hospital Renovations.** Existing clinical programs in the hospital would be relocated to the existing OPC1 and the proposed OPC2, as described above, which would allow for interior renovations on floors 1 through 4 of the inpatient floors of the hospital to address acute care needs per SB 1953. The following renovations and/or relocations would be included in Phase 1:

- Relocate and renovate the Pediatric Intensive Care Unit (PICU)
- Renovate the Neo-Natal Intensive Care Unit (NICU)
- Renovate the Surgery/Post-Anesthesia Care Unit (PACU)
- Relocate and renovate the Pharmacy
- Relocate and renovate the Central Sterile Processing Department (CSPD)
- Relocate and renovate the Morgue
- Relocate and renovate the Private Branch Exchange (PBX)
- Renovate Environmental Services (EVS)
- Relocate and renovate the Inpatient Rehabilitation and Med/Surg Beds
- Relocate Endocrinology

Renovations are described in **Table III-6** and are shown in **Figures III-13a through III-13e**.

In addition, as part of Phase 1, 17 bicycle parking spaces would be added to the 42 bicycle spaces already existing in the parking garage to meet the City's requirements for bicycle parking.

**f. Landscaping and Open Space.** The draft landscape plan for Phase 1 includes bio-filtration planting areas and the planting of native ornamental shrubs and ground cover around OPC2 and along 52<sup>nd</sup> Street in front of OPC1. **Figure III-19** (towards the end of this chapter) depicts the draft landscape plan for both Phase 1 and Phase 2 of the proposed project.

**g. Utilities and Infrastructure.** To serve the proposed OPC2 building, water (domestic and fire), sanitary sewer, storm drain, gas and electric lines would be connected to the existing lines below 52<sup>nd</sup> Street and Martin Luther King Jr. Way.



**Table III-6: Phase 1 Interior Renovations**

| Department                                   | Existing Location                  | Existing Area (Square Feet) | Proposed Location     | New Area/ Area of Renovation (Square Feet) | Net New Area (Square Feet) | Existing Bed Count | Proposed Bed Count | Additional Description   |
|--|------------------------------------|-----------------------------|-----------------------|--|----------------------------|--------------------|--------------------|--|
| Pediatric Intensive Care Unit (PICU)         | D&T Building, Level 3              | 6,941                       | D&T Building, Level 2 | 22,009                                     | 15,068                     | 23                 | 24                 | While the department would increase by approximately 15,000 square feet, only 1 new bed would be added. Currently the PICU (and NICU) have ward-style patient rooms, and additional space is needed to change these to single patient rooms, the current standard of care in hospital design. To accommodate this expansion, the Cardiology Department, laboratory services, and other smaller departments and offices would move to OPC2. |
| Neonatal Intensive Care Unit (NICU)          | 1982 Tower & D&T Building, Level 3 | 12,018                      | no change             | 20,321                                     | 8,303                      | 39                 | 38                 | While the department would increase by approximately 8,300 square feet, 1 bed would be eliminated. Currently the NICU (and PICU) have ward-style patient rooms, and additional space is needed to change these to single patient rooms, the current standard of care in hospital design. To accommodate this expansion, the Pediatric Intensive Care Unit would be moved to the 2 <sup>nd</sup> floor of the hospital.                     |
| Surgery/Post Anesthesia Care Unit (PACU)     | 1982 Tower, Level 3                | 6,422                       | no change             | 7,422                                      | 1,000                      | -                  | -                  | This department is severely undersized, and the lack of available recovery beds can impact operating room throughput. The recovery area would be expanded and reorganized to bring it up to latest the standards and improve flow.   |
| Pharmacy (and offices)                       | B/C Wing, Level 3                  | 2,334                       | D&T Building, Level 1 | 4,639                                      | 2,305                      | NA                 | NA                 | The existing pharmacy would need to be relocated as the B/C Wing would be demolished as part of Phase 2. The relocated pharmacy would be larger than the existing pharmacy to bring it into conformance with the latest design standards. An expansion of services is not anticipated. Neurology would be moving to OPC2, which would make room for the Pharmacy.  |
| Central Sterile Processing Department (CSPD) | B/C Wing and 1982 Tower, Level 3   | 2,856                       | D&T Building, Level 1 | 3,109                                      | 253                        | NA                 | NA                 | The existing CSPD would need to be relocated as the B/C Wing would be demolished as part of Phase 2. The relocated CSPD would be larger than the existing CSPD to bring it into conformance with the latest design standards. An expansion of services is not anticipated. Endocrinology would be moving to OPC1 and Neurology to OPC2, which would make room for CSPD.  |



**Table III-6: Phase 1 Interior Renovations**

| Department                                 | Existing Location     | Existing Area (Square Feet) | Proposed Location     | New Area/ Area of Renovation (Square Feet) | Net New Area (Square Feet) | Existing Bed Count | Proposed Bed Count | Additional Description  |
|--|-----------------------|-----------------------------|-----------------------|--|----------------------------|--------------------|--------------------|---|
| Morgue                                     | B/C Wing, Level 1     | 449                         | D&T Building, Level 1 | 1,006                                      | 557                        | NA                 | NA                 | The existing Morgue would need to be relocated as the B/C Wing would be demolished as part of Phase 2. The relocated Morgue would be larger than the existing Morgue to bring it into conformance with the latest design standards. Endocrinology would be moving to OPC1 and Neurology to OPC2, which would make room for the Morgue.  |
| Private Branch Exchange (PBX)              | 2nd floor A/B Wing    | 1,240                       | 1982 Tower, Level 1   | 2,143                                      | 903                        | NA                 | NA                 | The PBX is the command center for building emergency alarms and is currently located in the A/B Wing. General Acute Care services that currently reside in the A/B Wing will need to be relocated to the Inpatient Hospital as the A/B Wing is required to be separated from hospital functions. The relocated PBX would be larger than the existing PBX to bring it into conformance with the latest design standards. |
| Inpatient Rehabilitation and Med/Surg Beds | B/C Wing              | 13,581                      | 1982 Tower, Level 4   | 13,581                                     | 0                          | 54                 | 35                 | Inpatient rehabilitation, including support spaces and therapy areas, would be relocated from the B/C Wing to Level 4 of the 1982 Tower.  |
| Environmental Services (EVS)               | D&T Building, Level 1 | 2,296                       | no change             | 2,296                                      | 0                          | NA                 | NA                 | EVS is being renovated to address egress issues of D&T Building.  |

Note: If Phase 2 is not implemented, the B/C wing would be used for non-clinical functions, such as office space, general storage, and other support functions. No General Acute Care (GAC) services would be offered in the B/C Wing.

NA = Not Applicable

Source: HDR, November 2013.



FIGURE III-13a

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NOT TO SCALE



SOURCE: HDR/TAYLOR, 2014

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CHRCO Campus Master Plan Project EIR  
Phase 1

Proposed Inpatient Renovation Plan - Level 1



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FIGURE III-13b

CHRCO Campus Master Plan Project EIR  
Phase 1

Proposed Inpatient Renovation Plan - Level 2

SOURCE: HDR/TAYLOR, 2014.

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FIGURE III-13c

CHRCO Campus Master Plan Project EIR  
Phase 1

Proposed Inpatient Renovation Plan - Level 3

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NOT TO SCALE



SOURCE: HDR/TAYLOR, 2014.

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SOURCE: HDR/TAYLOR, 2013. [104-A]

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FIGURE III-13d

CHRCO Campus Master Plan Project EIR

Phase 1

Proposed Inpatient Renovation Plan - Level 4



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FIGURE III-13e

**NOTES:**

1. (E)-EXISTING ROOMS. MAINTAINING SIMILAR FUNCTION COSMETIC UPGRADE ONLY.

NOT TO SCALE

CHRCO Campus Master Plan Project EIR

Phase 1

Proposed Inpatient Renovation Plan - Level 4

SOURCE: HDR/TAYLOR, 2014.

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**h. Patients, Visitors and Staff.** Implementation of Phase 1 would reorganize and expand outpatient services on the CHRCO campus and allow for the decompression of existing departments. The resulting incremental increases in patients, visitors, and staff are shown in **Table III-7**. As described above, implementation of Phase 1 would result in approximately 88,581 square feet of net new construction but would also result in a decrease in patient bed count (see **Table III-3**).

**Table III-7: Projected Phase 1 Patients, Visitors and Staff**

|  | Existing <sup>b</sup> | Projected Phase 1 |
|--|-----------------------|-------------------|
| Patients (census and Emergency Department)   | 270                   | 270               |
| Patients of Outpatient Services <sup>a</sup> | 605                   | 648               |
| Hospital (Inpatient) Visitors <sup>c</sup>   | 604                   | 604               |
| Staff  |                       |                   |
| Outpatient (OPC1 and/or OPC2)                | 160                   | 395               |
| Hospital                                     | 1,761                 | 1,551             |
| Physicians                                   | 245                   | 245               |
| <b>Total Staff</b>                           | <b>2,166</b>          | <b>2,191</b>      |

<sup>a</sup> As this facility is a children's hospital, this number includes parents and caretakers accompanying the child.

<sup>b</sup> These numbers are based on 2012 averages.

<sup>c</sup> Hospital visitors include parents, siblings, consultants and contractors.

Source: CHRCO, November 2013.

**i. Grading and Construction.** The project site is generally flat and developed with structures; a minimal amount of cut and/or fill would be required for project construction. The proposed OPC2 Building and the Central Utility Plant would use either a mat foundation or drilled pier foundation system. Pile driving is not proposed as part of the project.

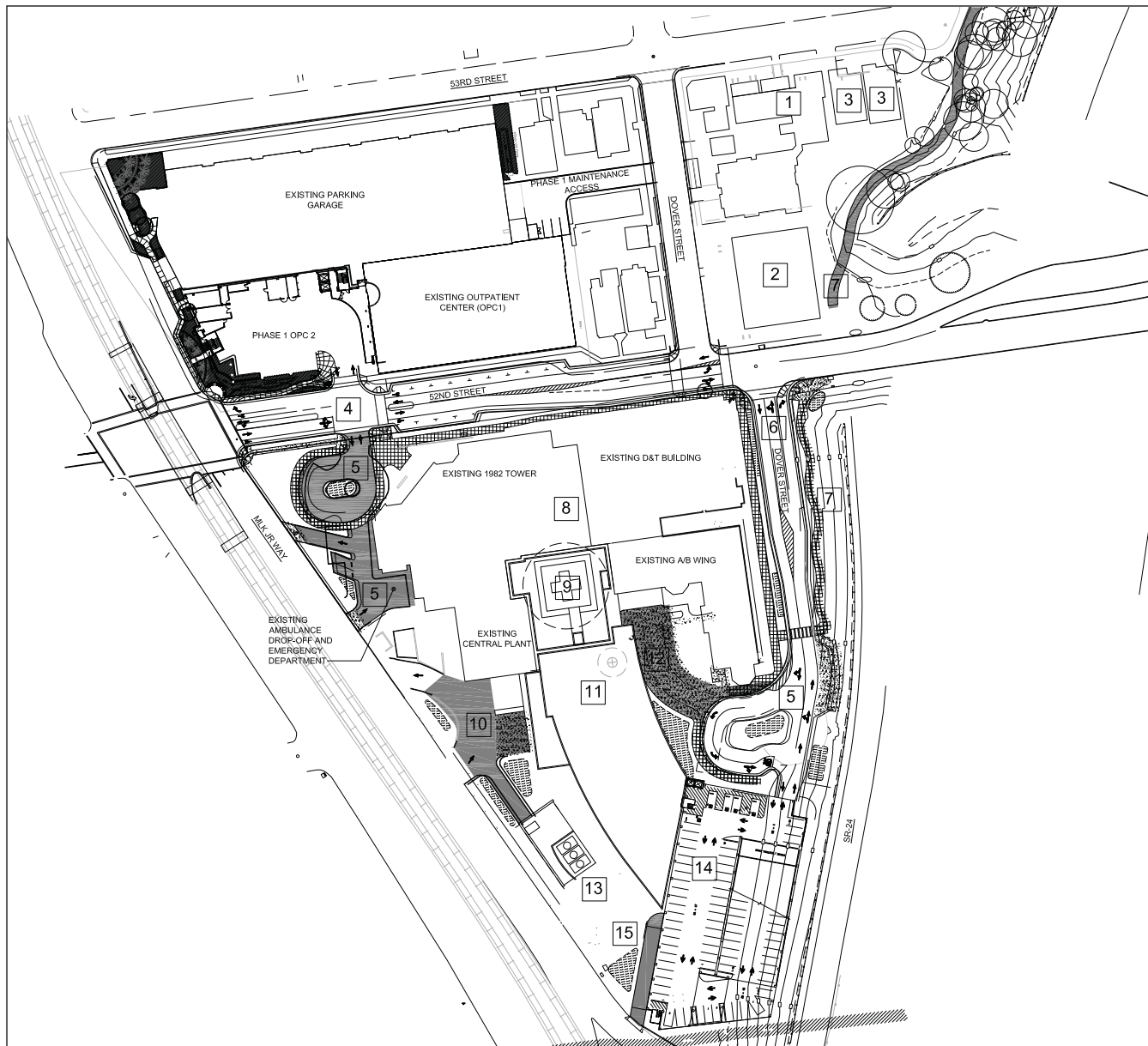
The total duration for construction of Phase 1 of the project is anticipated to take 58 months. Site grading and excavation for the OPC2 structure is anticipated to take 3 months. Construction of the OPC2 exterior envelope, elevators and roofing is anticipated to take 24 months. Interior construction work would begin while building exterior construction is being completed; interior work, site work and inspections would extend 12 months beyond completion of the exterior envelope. The interior hospital renovations construction is anticipated to take 30 months.

## 2. Phase 2

The elements of Phase 2 are described below. **Figure III-14** shows the proposed site plan, **Figures III-15a, III-15b, and III-15c** show the proposed massing, and **Figure III-16** shows the proposed elevations.

As noted above, the proposed sequence of demolition and construction for Phase 2 is shown in **Figures III-8b through III-8d**. The CHRCO campus site is currently fully developed and actively used. Phase 2 would include the relocation of existing departments and services to allow for demolition and construction activities, and then the relocation of services into new buildings which would require detailed sequencing. Phase 2 includes the construction of the Clinical Support Building, Family Residence Building, Link Building, Patient Pavilion, Central Utility Plant, and Parking Structure. The buildings are described below and are listed in the proposed order in which they would be constructed. The demolition required to accommodate new construction and the associated movement of departments is described for each building.





## PHASE 2 SCOPE OF WORK

- 1 NEW FAMILY RESIDENCE BLDG.  
2 STORIES  
14,500 SF
- 2 NEW CLINICAL SUPPORT BUILDING  
3 STORIES  
31,300 SF
- 3 RELOCATED RESIDENTIAL STRUCTURES
- 4 SITE IMPROVEMENTS TO 52ND STREET
- 5 SITE IMPROVEMENTS TO EXISTING HOSPITAL DROP OFF  
SHUTTLE PARKING  
AMBULANCE DROP-OFF
- 6 SITE IMPROVEMENTS TO DOVER STREET SOUTH OF  
52ND STREET
- 7 NEW LANDSCAPING AND RETAINING WALLS AT  
CALTRANS ACQUIRED ROW.
- 8 INPATIENT RENOVATIONS:  
LEVEL 1 - EMERGENCY DEPARTMENT  
LEVEL 2 - RADIOLOGY DEPARTMENT
- 9 NEW "LINK" BUILDING  
5 STORIES  
HELISTOP ON ROOF  
43,500 SF
- 10 NEW LOADING DOCK
- 11 NEW PATIENT PAVILION  
5 STORIES  
101,000 SF
- 12 NEW MAIN HOSPITAL ENTRANCE DRIVE & DROP-OFF
- 13 PHASE 2 CENTRAL UTILITY PLANT  
3,800 SF
- 14 NEW PARKING GARAGE  
4 STORIES  
334 PARKING STALLS  
114,900 SF
- 15 EMERGENCY VEHICLE EXIT FROM PROPOSED  
PARKING STRUCTURE

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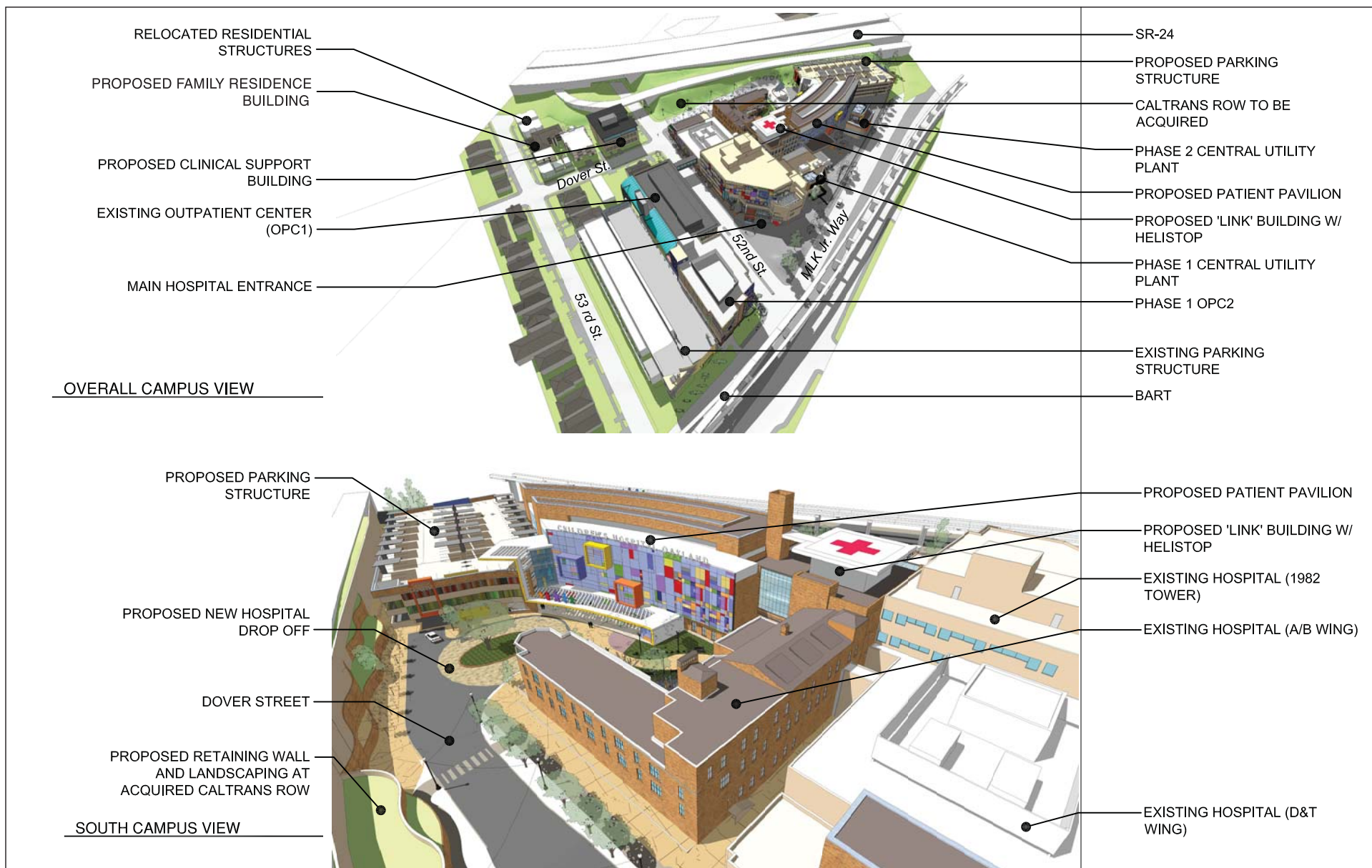
SOURCE: HDR/TAYLOR, 2014.

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FIGURE III-14

CHRCO Campus Master Plan Project EIR  
Phase 2  
Proposed Site Plan





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FIGURE III-15a

*CHRCO Campus Master Plan Project EIR*  
 Phase 2  
 Proposed Building Massing

SOURCE: HDR/TAYLOR, 2014.

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VIEW OF HOSPITAL DROP OFF



EXISTING HOSPITAL (A/B WING)

PROPOSED PATIENT PAVILION  
ENTRANCE

PROPOSED DROP OFF AND  
LANDSCAPING

VIEW OF 'LINK' BUILDING



PROPOSED PATIENT PAVILION

PROPOSED 'LINK' BUILDING

EXISTING A/B WING ENTRANCE

CODE REQUIRED PLAYGROUND

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FIGURE III-15b

CHRCO Campus Master Plan Project EIR  
Phase 2  
Proposed Building Massing

SOURCE: HDR/TAYLOR, 2014.

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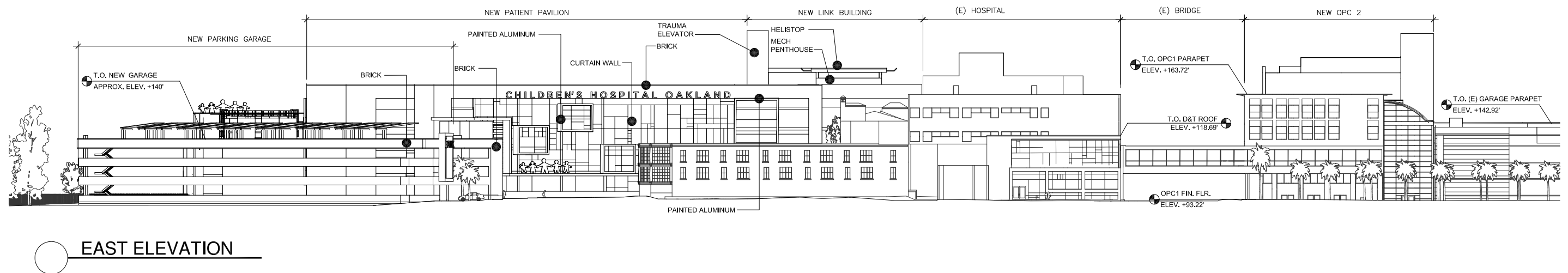
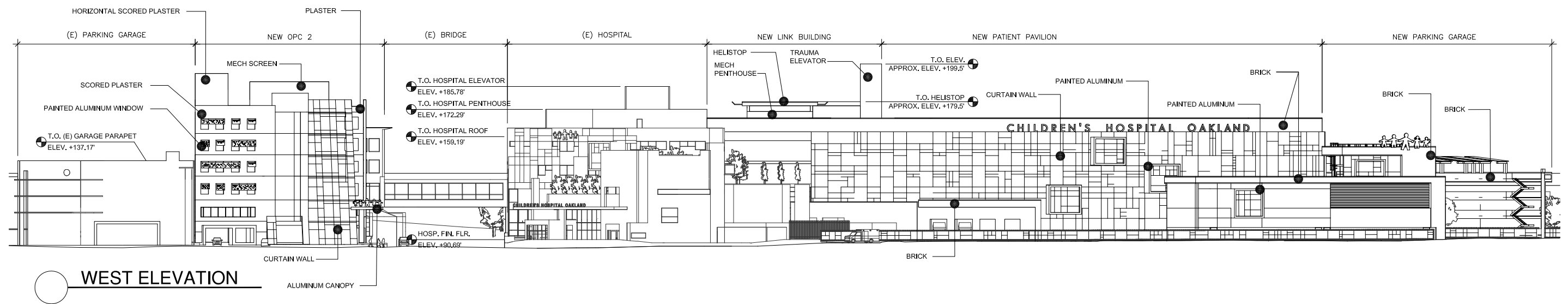
FIGURE III-15c

CHRCO Campus Master Plan Project EIR  
Phase 2  
Proposed Building Massing

SOURCE: HDR/TAYLOR, 2014.

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FIGURE III-16

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SOURCE: HDR/TAYLOR, 2014.

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CHRCO Campus Master Plan Project EIR

Phase 2

Proposed Elevations

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**a. Demolition.** To accommodate construction of the multiple new buildings and associated site circulation under Phase 2, the following buildings would be demolished:

- The approximately 2,253 square-foot residential building at 5212 Dover Street would be demolished to accommodate construction of the Clinical Support Building. This building is owned by the hospital and used for offices. (This building is not a historic resource as defined by CEQA.)
- The approximately 2,800 square-foot residential building at 665 53<sup>rd</sup> Street would be demolished. This building is owned by the hospital and used for offices. (This building is not a historic resource as defined by CEQA.) The two CHRCO-owned residences at 688 and 682 52<sup>nd</sup> Street would be relocated to this site; they are not historic structures as defined by CEQA and are not proposed for demolition.
- The approximately 33,510-square-foot B/C Wing would be demolished to accommodate construction of the Link Building and Patient Pavilion. (This building is not a historic resource as defined by CEQA.)
- The temporary trailers south of the B/C Wing and the temporary trailers east of the A/B Wing (which provide a total of 4,995 square feet of use) would be demolished to accommodate the Patient Pavilion, Central Utility Plant, and Parking Garage.
- The approximately 12,570-square-foot Bruce Lyon Memorial Research Laboratory Building would be demolished to accommodate primarily the Parking Garage. (This building is not a historic resource as defined by CEQA.)
- The approximately 4,500 Oncology Offices would be demolished to accommodate the Parking Garage. (This building is not a historic resource as defined by CEQA.)
- The Helistop would be demolished to accommodate primarily the Patient Pavilion. (This building is not a historic resource as defined by CEQA.)

In addition, the rear portions of the following buildings would be demolished:<sup>12</sup>

- CHRCO-owned residence at 679 53<sup>rd</sup> Street;
- CHRCO-owned residence at 675 53<sup>rd</sup> Street; and
- CHRCO-owned residence at 671 53<sup>rd</sup> Street.

The front façades (the approximately front 10 feet) of these residences would be used as the façade of the proposed Family Residence Building. None of these residences are individually eligible for the California Register; however, they are contributors to the 55<sup>th</sup> and Dover Residential District. Please see Section IV.C. Cultural and Historic Resources, for additional discussion of the built environment cultural resources.

A total of approximately 65,041 square feet of use would be demolished (see **Table III-4**).

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<sup>12</sup> Although the front façades of these buildings would be retained, per Section 15.36.010 of the City of Oakland Municipal Code, demolition is defined as the “decimating, razing, ruining, tearing down or wrecking of any facility, structure or building covered by this chapter.” The word demolition includes “any partial demolition and any interior demolition affecting more than 10 percent of the replacement value of the structure as determined by the Building Official.”

Approximately 90 protected trees (52 of which are located on the Caltrans site), including 32 street trees, would be removed from the site during construction of Phase 2, including the large southern magnolia tree that is located within the existing courtyard. An additional 5 trees could be affected during the construction period, such that removal may be required if they cannot be adequately protected.

**b. Family Residence Building.** The rear portions of three CHRCO-owned houses (used for office) along 52<sup>nd</sup> Street east of Dover Street would be demolished, and the Family Residence Building would be constructed behind the remaining façades. This approximately 14,500-square-foot building would provide 12 to 16 residential units for families with children in the hospital. It is proposed to be two-stories in height (approximately 33 feet tall, as measured to the top of the roof); the height would match the existing Family House at 5222 Dover Street. The proposed Family Residence Building is similar to the existing facility at 5222 Dover Street.

**c. Clinical Support Building.** The two CHRCO-owned residences at 688 and 682 52<sup>nd</sup> Street would be relocated to the site of 665 53<sup>rd</sup> Street to allow for the construction of the Clinical Support Building. This approximately 31,300-square-foot, 3-story (approximately 40-foot-high) building would house support/administrative functions. These uses are currently located in the B/C Wing and temporary trailers on the campus, which would be demolished in Phase 2 to allow for the construction of the new Patient Pavilion, Phase 2 Central Utility Plant and new parking garage.

**d. Link Building.** After construction of the Family Residence Building and the Clinical Support Building (which will accommodate uses from the B/C Wing), the B/C Wing and trailer will be demolished. In their place, the 5-story (approximately 90 feet tall as measured to the helistop platform), 43,500-square-foot Link Building would be constructed between the existing 1982 Tower and the proposed Patient Pavilion. This building would connect the services of the existing hospital's east and west areas, and ultimately serve as the connecting element tying together the existing hospital and the new Patient Pavilion. In addition to being a precursor to the new Patient Pavilion, the Link Building would provide space for material management, facility planning, family resources, and other departments currently located in trailers and other locations on the campus, which would be demolished in Phase 2 to allow the construction of the new Patient Pavilion, Phase 2 Central Utility Plant and new parking garage. The existing loading dock south of the existing Central Utility Plant would be expanded as part of construction of the Link Building.

**e. Helistop.** The Link Building would include a new helistop on the roof. The helistop would consist of an approximately 2,100-square-foot raised pad, marked with an "H" within a 30-foot by 30-foot white cross. As per Federal Aviation Administration (FAA) safety guidelines, the helistop design includes a safety net surrounding the pad (to minimize the potential of someone falling from the helistop platform) but it does not include a fence or parapet. The helistop is used for trauma patients or transfers from other hospitals. Patients arriving via helicopter would be taken down the elevator to the emergency department or directly to the appropriate intensive care unit. The campus currently includes a helistop south of the existing hospital and north of the Bruce Lyon Memorial Research Laboratory Building. The proposed helistop would be approximately 45 feet higher than the existing helistop and 250 feet north of the existing helistop; which, as noted above, would be demolished as part of Phase 2 after the new helistop is approved for use. At no point would there be two helistops in use on the campus.



The new helistop would be lighted similarly to the existing helistop and would include the following general lighting types:

- **Perimeter lights.** Sixteen green LED perimeter lights outline the landing pad for approaching pilots at night. The lights would be internally (flush) mounted in a concrete landing pad or externally mounted around the perimeter of a metal landing pad. Power usage would be approximately 6 watts per light, depending on manufacturer and model. Building parapets would shield perimeter lights from the ground. Perimeter lights may not extend more than two inches above the adjoining landing pad surface elevation.<sup>13</sup>
- **Lighted windcone.** A lighted windcone would be installed on the elevator penthouse to provide approaching and departing pilots with wind direction and speed information. Windcones can be internally or externally lit. Externally-lit windcones have four downward-directed LED floods with a red obstruction light on top of the mast. Internally-lit windcones have two floodlights mounted inside the windcone itself, again with a red obstruction light. Either type is acceptable. The decision as to which type to use would be made during the entitlement and design process. The windcone would be similar to the existing rooftop lighted windcone just south of the existing helistop except updated with LED fixtures. Alternatively, the existing windcone could simply be relocated to the new helistop. Total power usage would be approximately 15 watts, depending on manufacturer and model.
- **Obstruction lights.** Obstruction lights are steady burning red. Their purpose is to highlight elements that are higher than the landing pad for pilots approaching or departing at night. They would be similar to the existing obstruction lights on the elevator tower on the northern side of the existing helistop. Power usage would be approximately 6 watts per light, depending upon manufacturer and model.
- **Three-color helistop beacon.** The three-color (green-white-clear) beacon is intended to help pilots quickly locate the hospital campus from several miles away at night. A beacon is currently installed on the roof south of the existing helistop. Only one is needed for the campus. A new beacon location and model would be determined during the design development phase. Beacons range from 150W (LED) to 500W (incandescent) depending upon manufacturer and model. The beacon would be installed at parapet height so that the parapet would shield it from nearby ground-based land uses while still providing visibility to pilots approaching from higher altitudes.
- **Low flood lights.** Four low white flood lights would be installed along the helideck edges to shine across the helideck surface to enhance safety of moving patients to and from the elevator and helicopter at night. These would not be installed more than two inches above the helideck surface and would not be visible from the ground. Currently, foot lights are halogen, 75W to 250W. To help protect pilots' night vision, these lights would not be turned on until after a helicopter lands and would be turned off prior to the helicopter's departure.
- **Foot lights.** Foot lights would be installed along the walkway or ramp connecting the helideck with the upper elevator lobby to enhance safety of moving patients between the helicopter and elevator at night. They would not be visible from the ground.

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<sup>13</sup> Note that the existing helistop has older, yellow incandescent perimeter lights. FAA lighting criteria have changed since that helistop was built.

- **Upper elevator lobby lighting.** The upper elevator lobby would likely have just one window facing the helideck so that hospital security could attend each landing and takeoff from the safety of the elevator lobby. The upper lobby would have standard interior lighting that would be less obtrusive than most interior lighting because of its higher elevation.

All of the above lighting would be needed only to accommodate the occasional nighttime landing or takeoff. Typically, only the lighted windcone and the red obstruction lights, both of which would be installed on the elevator structure to the helistop's south, might be visible from the ground. This is already true for the existing helistop. White lighting on the helideck and along the walkway and/or ramp should be activated only after a helicopter has landed and turned off prior to departure to minimize night glare for pilots. Other (aviation-related) lighting can be manually activated via a switch in the elevator's upper lobby or via a pilot-controlled lighting system that allows pilots to tune their communications radios to a specified frequency and activate the lights via a radio receiver-controller at the Link Building. Or, since many helistop-related lights are now LED and use very little energy, some hospitals make the decision to put them on photocells so that they are available all night. The hospital's design team would decide which type of activation to use during the entitlement and design process.

**f. Patient Pavilion.** The Patient Pavilion would provide space for acute care, including medical/surgical (med/surg) beds and associated family and patient amenities. The approximately 101,000-square-foot Patient Pavilion would be five stories. It would be approximately 68 feet 6 inches from the top of grade to the top of the roof, approximately 89 feet 5 inches high to the top of the penthouse roof, and approximately 105 feet 4 inches to the top of the elevator machine room roof. Each floor would include approximately 24,900 to 26,400 square feet of use. Floors one through five would include a direct connection to the Link Building.

**g. Central Utility Plant.** Phase 2 would include a new Link Building and Patient Pavilion which would be served by equipment located within a new 3,800 square foot Central Utility Plant building. The central utility plant building would include the following new tanks as required by NPC-5 2030<sup>14</sup>:

- One new 28,200-gallon emergency water holding tank.
- Three emergency waste holding tanks including: one 8,000 gallon tank and underground emergency waste system for the D&T Building; one 12,000 gallon tank for the 1982 Patient Tower; and one 12,000-gallon tank for the Patient Pavilion.
- Two new 20,000-gallon underground fuel oil storage tanks (UST) to provide 72 hours supply to the emergency generators.

Normal power service for the Phase 2 Patient Pavilion would be derived from the existing primary PG&E service at the existing central utility plant. A 4 inch, 12kV feeder would be extended via underground concrete-encased ductbank from existing high voltage switchgear to a new unit substation to serve the Patient Pavilion. A new 1,500 kW standby diesel generator would be provided

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<sup>14</sup> Non-Structural Performance Category (NPC) ratings were created under Senate Bill 1953, which was enacted in 1994, and was established to provide that by 2030 California hospitals must be capable of remaining operational after seismic event. NPC-5 compliance requires the building to maintain sufficient water, power, and fire and life safety independence for at least 72 hours thereby allowing the facility to remain operational after an earthquake.

to serve the HVAC loads and the Patient Pavilion essential loads. The existing 131 kW standby diesel generator outside of the Bruce Lyon Memorial Research Laboratory Building would be removed.

**h. Parking Structure.** An approximately 114,900-square-foot, 4-story (34-foot-high to the top deck), 334-stall parking structure would be developed at the southeast edge of the campus. This structure would provide parking primarily for users of the inpatient services. There would be a fee to park in this structure; the rate would be the same as that at the existing structure, when this structure is built and operational. The intent of the second parking structure on the campus, at the opposite end from the existing parking structure, is to separate inpatient and outpatient parking into the distinct hospital areas.

**i. Interior Hospital Renovations.** As part of Phase 2, interior hospital renovations would continue, including renovations to the Emergency Department, Radiology/Imaging, and the new 3<sup>rd</sup> Floor Surgical Magnetic Resonance Imaging (MRI). Semi-private patient rooms on the fifth floor would be converted to single-bed patient rooms. Renovations are described in **Table III-8**, and are shown in **Figures III-17a through III-17c**.

In addition, as part of Phase 2, bicycle parking spaces would be added to the 42 existing bicycle spaces already existing in the parking garage to meet the City's requirements for bicycle parking. The total number of spaces to be added in Phase 2 is not currently known; however, 17 spaces would be added as part of Phase 1.

**Table III-8: Phase 2 Interior Renovations**

| Department                                | Existing Location   | Existing Area (Square Feet) | Proposed Location   | New Area/ Area of Renovation (Square Feet) | Net New Area (Square Feet) | Existing Bed Count | Proposed Bed Count | Description  |
|---|---------------------|-----------------------------|---------------------|--|----------------------------|--------------------|--------------------|--|
| Emergency Department                      | 1982 Tower, Level 1 | 10,012                      | no change           | 10,012                                     | 0                          | NA                 | NA                 | No change to the ED capacity is proposed. Renovations may include additional waiting area, increased number of triage areas, and minor improvements to address flow. |
| Radiology                                 | 1982 Tower, Level 2 | 9,914                       | no change           | 9,914                                      | 0                          | NA                 | NA                 | Renovations will reconfigure office and support layout.  |
| Surgical Magnetic Resonance Imaging (MRI) | NA <sup>a</sup>     | 1,616                       | 1982 Tower, Level 3 | 1,616                                      | 0                          | NA                 | NA                 | A Surgical MRI may be installed in the northeast corner of the existing OR suite currently used as support space.  |

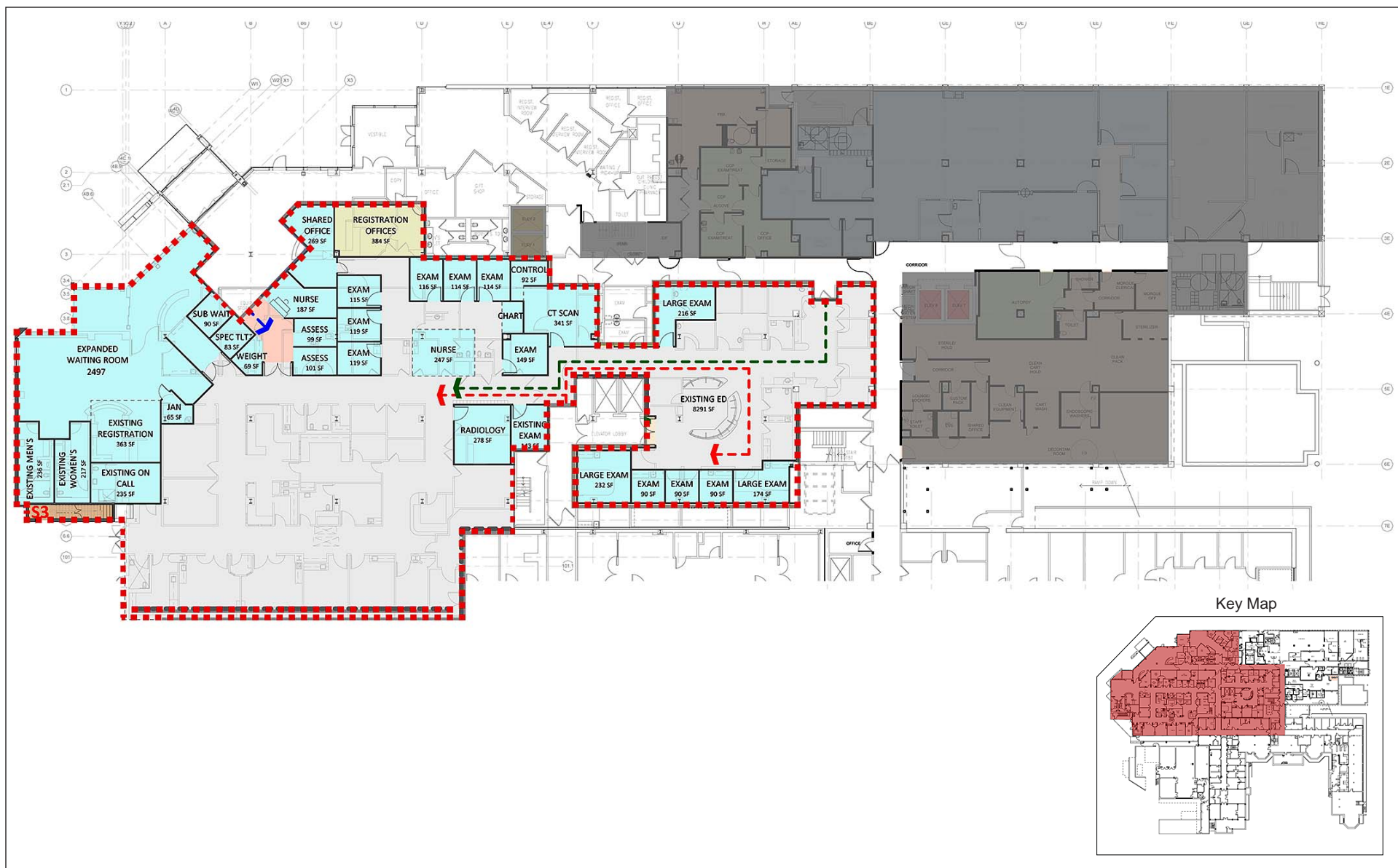
<sup>a</sup> CHRCO does not currently have a Surgical MRI.

NA = Not Applicable

Source: HDR, May 2013.



FIGURE III-17a



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NOT TO SCALE



FIGURE III-17b

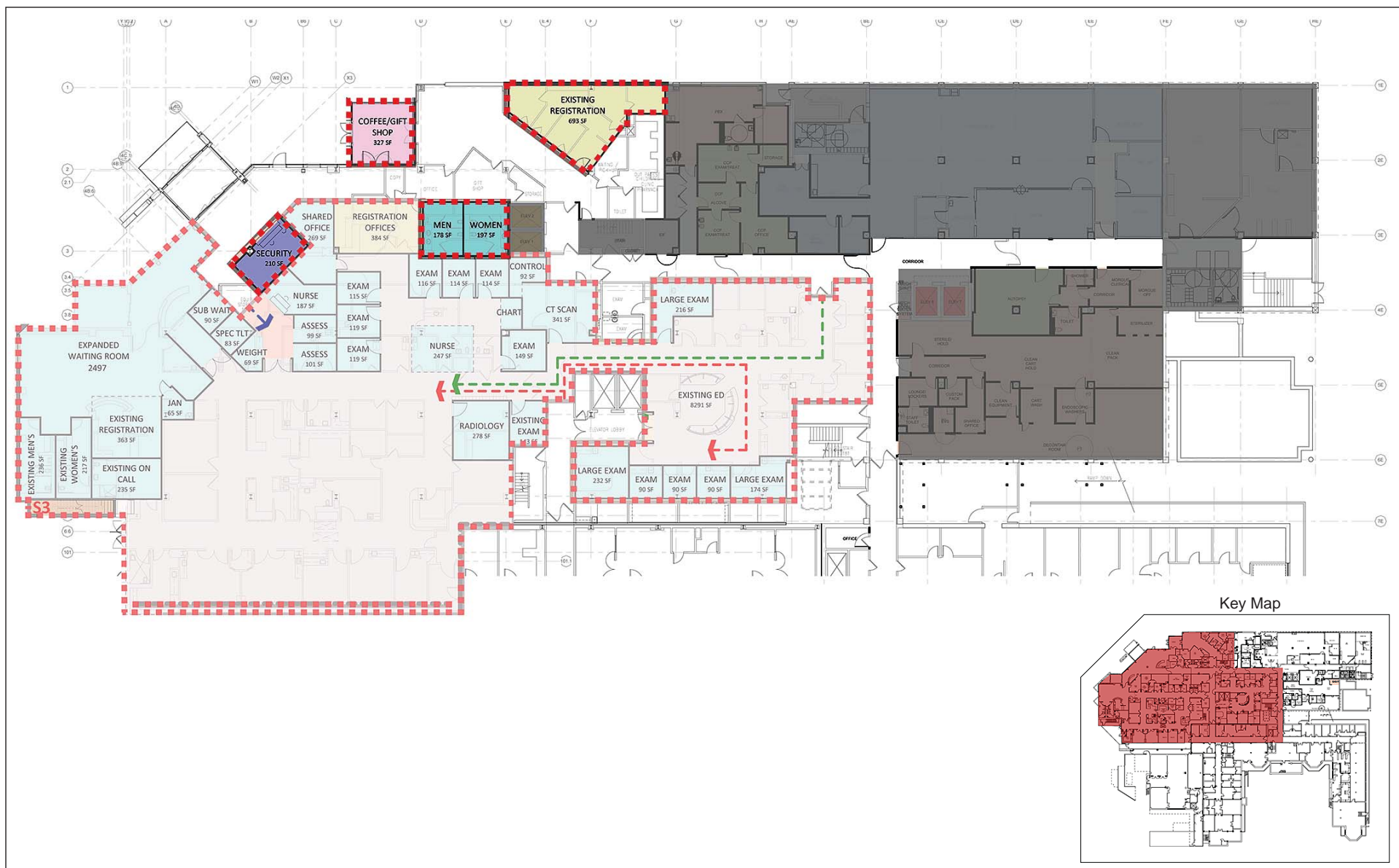
CHRCO Campus Master Plan Project EIR  
Phase 2

Proposed Inpatient Renovation Plan, Level 2

SOURCE: HDR/TAYLOR, 2014.

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FIGURE III-17c

CHRCO Campus Master Plan Project EIR  
Phase 2  
Proposed Inpatient Renovation Plan, Level 3

SOURCE: HDR/TAYLOR, 2014.

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**j. Caltrans Right-of-Way Acquisition and Improvements.** To accommodate development of Phase 2, development of the Clinical Support Building and walking path at the north end of the campus and development of the Parking Garage at the south end of the campus, CHRCO proposes to incorporate a portion of Caltrans' right-of-way. CHRCO has submitted a formal request to Caltrans to decertify State right-of-way so that the State may ultimately "dispose" of the right-of-way as excess lands. The area proposed to be acquired runs from the Martin Luther King Jr. Way off-ramp north to 53<sup>rd</sup> Street, and is located between the existing CHRCO properties and the SR 24 southbound lanes. This would require the acquisition of approximately 64,511 square feet (1.5 acres) of right-of-way from Caltrans. Improvements within this area would include a portion of the Clinical Support Building, the Parking Garage, and the walking path on the north end of the campus. This EIR evaluates the potential environmental effects associated with the project's proposed acquisition, development, and use of this right-of-way.

**Figure III-18a** provides a detailed image of the area of Caltrans right-of-way proposed for "decertification".<sup>15</sup> This area adjacent to State Route 24 consists of undeveloped, vegetated slopes. As part of the proposed project, a series of retaining walls would be constructed. As shown in **Figures III-18b through III-18d**, retaining wall heights would vary from 15 to 30 feet. Resulting slopes would not exceed 1:3. Existing storm drains and PG&E duct banks in this area would be relocated to the new edge of the CHRCO property, and new access and utility easements would be created as appropriate. Existing Caltrans 6-foot chain-link fences would be relocated from the existing to the proposed edge of Caltrans right-of-way.

**k. Site Access and Circulation.** As part of Phase 2, the internal driveway south of 52<sup>nd</sup> Street in the vicinity of Dover Street would be extended south to provide access to the proposed Patient Pavilion entrance and drop-off, and the parking structure. Other site access and circulation elements in Phase 2 would include the restriping of 52<sup>nd</sup> Street to provide one through travel lane and a Class 2 bicycle lane in each direction between Martin Luther King Jr. Way and Dover Street. Improvements to the existing hospital drop-off, shuttle parking and ambulance parking north and west of the 1982 Tower are proposed as well. These improvements are depicted in **Figure III-19**.

**l. Landscaping and Open Space.** The draft landscape plan for Phase 2 includes planting of native ornamental shrubs and ground cover around much of the site. Streetscape planting and street trees are proposed in areas along Dover Street. Bio-filtration planting areas are also proposed throughout the CHRCO campus. The combined landscape plan for Phases 1 and 2 is shown in **Figure III-20**.

**m. Utilities and Infrastructure.** To serve the proposed structures, including the Family Residence Building, Clinical Support Building, Link Building and Patient Pavilion, water (domestic and fire), sanitary sewer, storm drain, gas and electric lines would be connected to the existing lines below 52<sup>nd</sup> Street, Dover Street, or Martin Luther King Jr. Way.

A PG&E underground duct bank currently bisects the campus, east to west, in the vicinity of 51<sup>st</sup> Street. As part of Phase 2, this duct bank would be relocated to southern end of the campus boundary. On the southeastern side of the campus it would parallel State Route 24 to the south, then extend west to Martin Luther King Jr. Way where it would connect to the existing PG&E manhole at 51<sup>st</sup> Street.

<sup>15</sup> Decertification is the Caltrans process by which operating right-of-way is determined to be excess and no longer necessary for transportation purposes. Once the land has been decertified, it can be sold.

**n. Sustainable Design.** All work permitted by the City of Oakland would be designed to meet the City of Oakland's Green Building Ordinance (LEED Silver certification) as well as the State CalGreen requirements; buildings constructed under Phase 2 subject to these standards would include: Family Residence Building (Green Point Rated) and the Clinical Support Building. All inpatient services permitted by OSHPD would follow state CalGreen requirements; buildings constructed under Phase 2 subject to these standards would include the Link Building and the Patient Pavilion. In addition, solar panels could be installed on the roof of the new Parking Garage as part of Phase 2; however, for the purposes of a conservative analysis, the greenhouse gas emissions analysis contained in this report does not assume that these features would be part of the project.

**o. Patients, Visitors and Staff.** Implementation of Phase 2 would increase services on the project site; the resulting increases in patients, visitors, and staff are summarized in **Table III-9**. As described above, implementation of Phase 2 would result in approximately 243,959 square feet of net new construction and would result in an increase in patient bed count (see **Table III-3**).

**Table III-9: Projected Phase 2 Patients, Visitors and Staff**

|  | Existing <sup>b</sup> | Projected Phase 1 | Projected Phase 2<br>(i.e., buildout) |
|--|-----------------------|-------------------|---------------------------------------|
| Patients (census and Emergency Department)   | 270                   | 270               | 340                                   |
| Patients of Outpatient Services <sup>a</sup> | 605                   | 648               | 648                                   |
| Visitors (Hospital) <sup>c</sup>             | 604                   | 604               | 761                                   |
| Staff  |                       |                   |                                       |
| Outpatient (OPC1 and/or OPC2)                | 160                   | 395               | 395                                   |
| Hospital                                     | 1,761                 | 1,551             | 1,710                                 |
| Physicians                                   | 245                   | 245               | 266                                   |
| <b>Total Staff</b>                           | <b>2,166</b>          | <b>2,191</b>      | <b>2,371</b>                          |

<sup>a</sup> As this facility is a children's hospital, this number includes parents and caretakers accompanying the child.

<sup>b</sup> Existing numbers are based on 2012 averages.

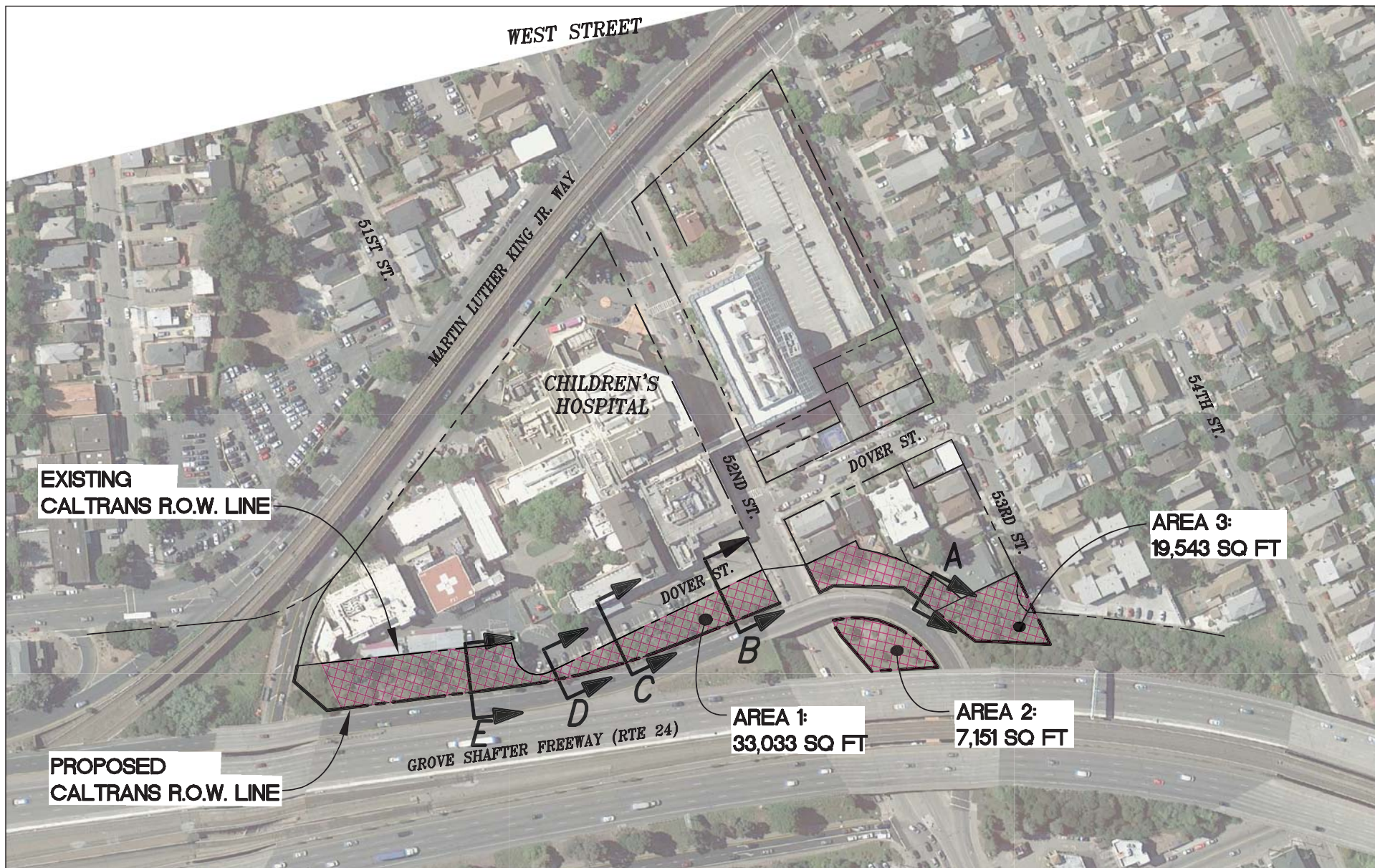
<sup>c</sup> Hospital visitors include parents, siblings, consultants and contractors.

Source: CHRCO, November 2013.

**p. Grading and Construction.** The project site is generally flat and developed with structures. Approximately 20,000 cubic yards of cut and approximately 15,000 cubic yards of fill may be required for implementation of Phase 2. Driven piers are not proposed for the construction of buildings under Phase 2.

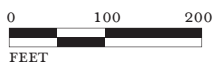
Total project construction of Phase 2 is anticipated to begin in 2020 and is anticipated to take approximately 60 months.





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FIGURE III-18a

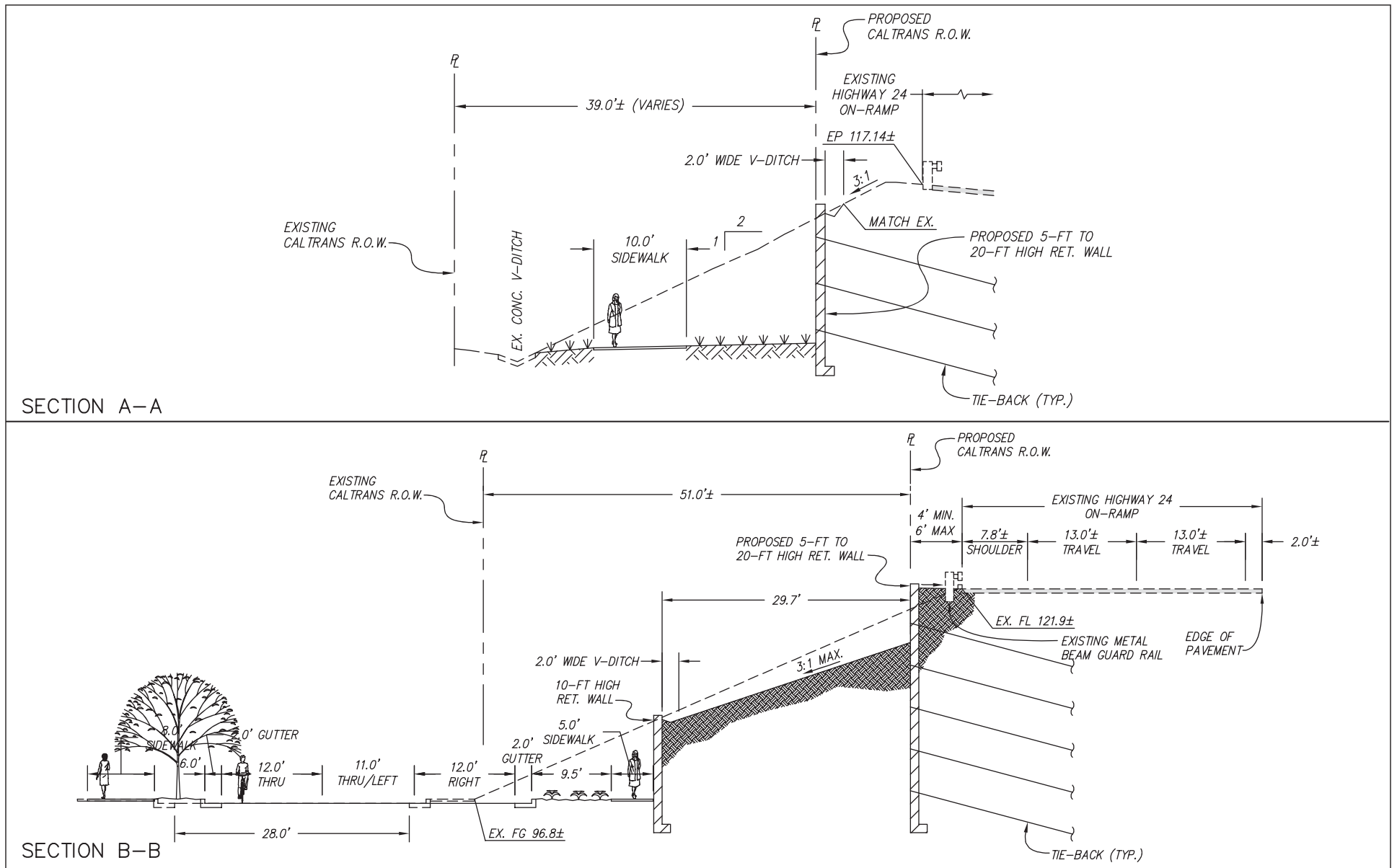


SOURCE: SANDIS, 2014.

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CHRCO Campus Master Plan Project EIR  
Proposed Decertification and Acquisition of Caltrans Right-of-Way

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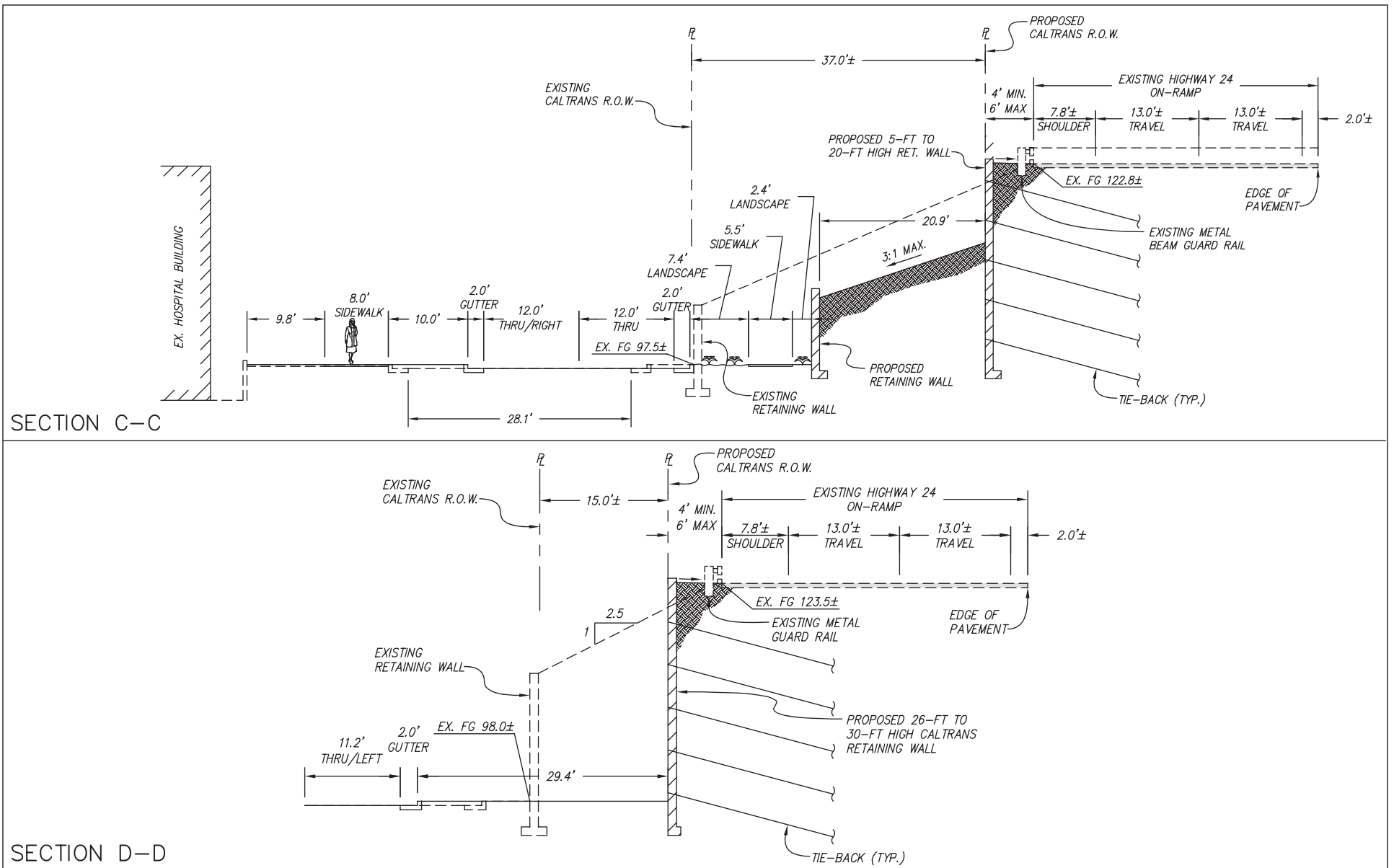
FIGURE III-18b

NOT TO SCALE

SOURCE: HDR/TAYLOR, 2014.

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CHRCO Campus Master Plan Project EIR  
Proposed Certification and Acquisition of Caltrans Right-of-Way  
Cross Section AA and BB



LSA FIGURE III-18c

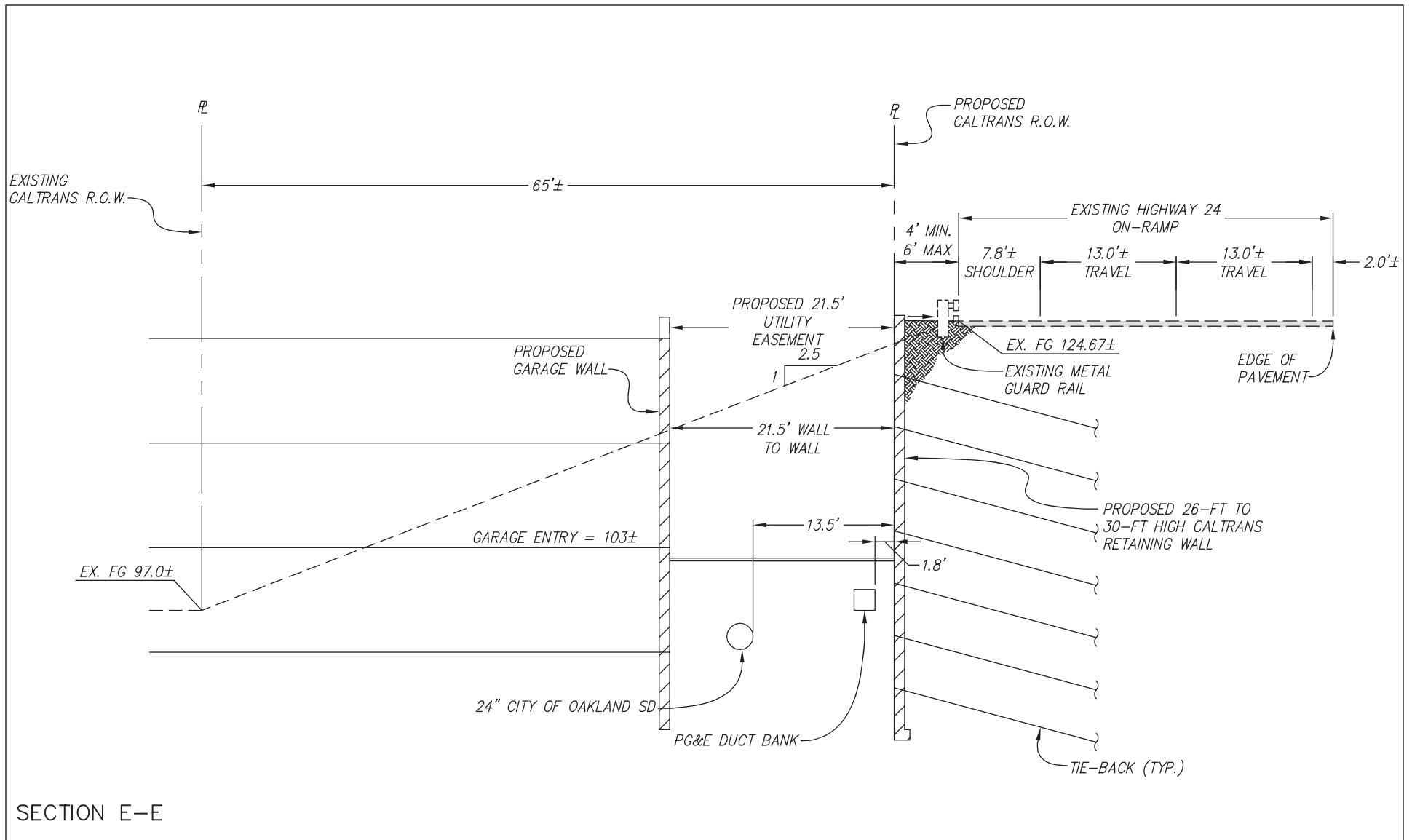
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SOURCE: HDR/TAYLOR, 2014.

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CHRCO Campus Master Plan Project EIR  
Proposed Certification and Acquisition of Caltrans Right-of-Way  
Cross Section CC and DD





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FIGURE III-18d

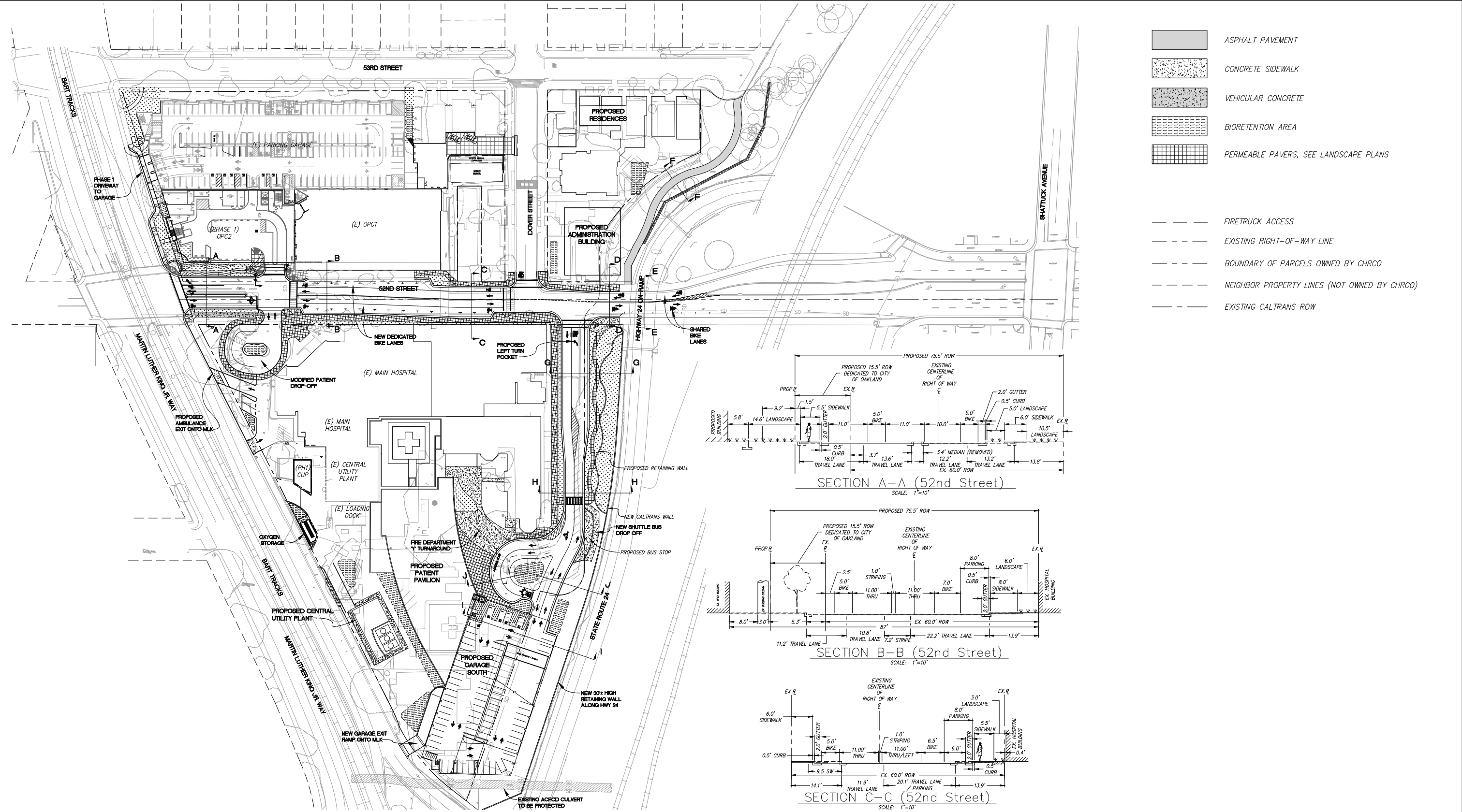
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SOURCE: HDR/TAYLOR, 2014.

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CHRCO Campus Master Plan Project EIR  
Proposed Certification and Acquisition of Caltrans Right-of-Way  
Cross Section EE

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LSA



FIGURE III-19

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FEET

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FIGURE III-20

CHRCO Campus Master Plan Project EIR  
Proposed Landscaping Plan

SOURCE: HDR/TAYLOR, 2014.

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## **F. DISCRETIONARY ACTIONS AND OTHER PLANNING CONSIDERATIONS**

Discretionary approvals from the City of Oakland and other agencies are anticipated to be required for the construction of the proposed project include without limitations those described below.

### **1. City of Oakland**

The proposed project would include a General Plan Amendment to designate a portion of the CHRCO site Institutional (including one privately-owned residence) and to rezone a portion of the CHRCO site S-1 (including two privately-owned residences). Proposed revisions to the existing General Plan and Zoning map are depicted in **Figure III-21**. The proposed project would also include a Planned Unit Development (PUD) permit for development on the entirety of the CHRCO site. The PUD permit would be staged to facilitate the project's construction phasing. The proposed project would also include a vesting tentative map and final maps to merge lot lines on the CHRCO site to accommodate project development. In addition, the proposed project would include conditional use permits related to the conversion of residential uses to non-residential uses and for other uses on the site. The proposed project would also include a tree removal permit(s) and a special activity permit for the proposed helistop, and potentially an encroachment permit for the driveway ramp to the existing garage at Martin Luther King Jr. Way.

### **2. Office of Statewide Health Planning and Development (OSHPD)**

The Office of Statewide Health Planning and Development (OSHPD) is responsible for overseeing all aspects of hospital construction in California for general acute care hospitals, psychiatric hospitals, skilled nursing homes, and intermediate care hospitals. Pursuant to the Alquist Act, building plans for the retrofit or replacement of acute care hospital facilities must be submitted to, and approved by, OSHPD. Under OSHPD requirements, the construction related to hospital facilities must comply with California Code of Regulations, Title 24, California Building Standards Code relating to the regulation of hospital buildings, in addition to other regulations adopted pursuant to the State Health and Safety Code and all other applicable State laws. The construction of the new acute care facilities proposed under the Master Plan would require CHRCO to file with the OSHPD Facilities Development Division an application for General Acute Care Hospital review related to the proposed renovations of the acute care facilities, and for Licensed Clinic review related to the construction of OPC2, as proposed under Phase 1. In addition, as part of Phase 1, renovations to inpatient facilities and construction of the Central Utility Plant would be reviewed and approved by OSHPD. Under Phase 2, review and approval of inpatient renovations and construction of the Link Building, Patient Pavilion, and Central Utility Plant would also be required. The Facilities Development Division would review the proposed project construction drawings and specifications for code compliance, and would issue a building permit upon plan approval.

### **3. California Department of Health Services (CDHS)**

The California Department of Health Services (CDHS) is responsible for the licensing of the new acute care facility in addition to overseeing compliance with the Medical Waste Management Program, which ensures the proper handling and disposal of medical waste.

### **4. California Department of Transportation (Caltrans)**

The proposed project would include land acquisition from Caltrans related to the use of and improvements within approximately 1.5 acres of Caltrans right-of-way adjacent to westbound SR 24. Encroachment permits may be needed from Caltrans to construct retaining walls along SR 24 and

improvements related to 52<sup>nd</sup> Street. The proposed project would also include the construction and operation of a new helistop on top of the Link Building, which would be subject to review and approval by the Caltrans Division of Aeronautics.

## G. USES OF THIS EIR

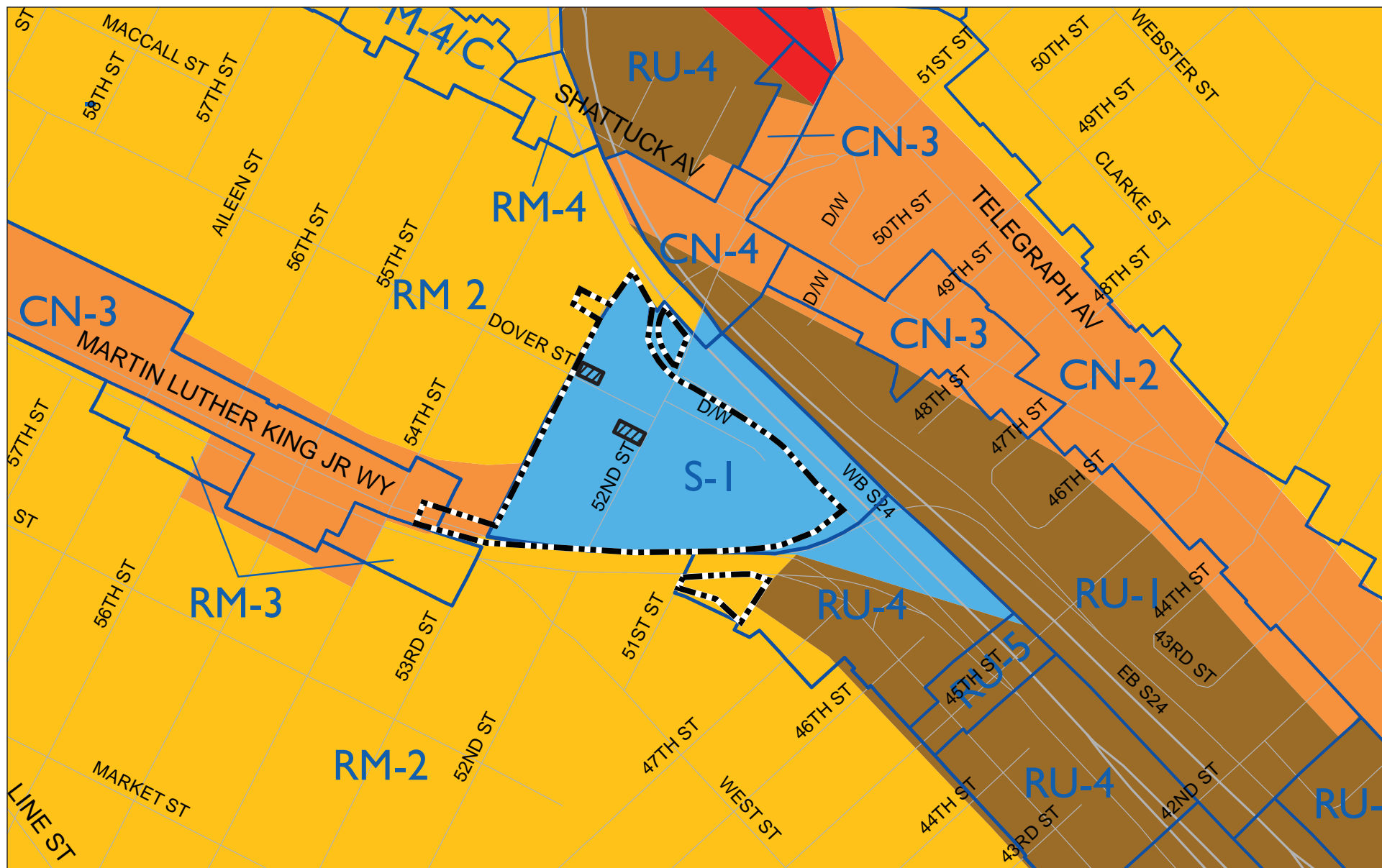
A number of permits and approvals would be required before development of the project is able to proceed. As lead agency for the proposed project, the City of Oakland would be responsible for the majority of approvals required for development. Other agencies may also have some authority related to the project and its approvals. A list of the permits and approvals that may be required by the City and other agencies include without limitation those provided in **Table III-10**. This EIR is intended to be used by the City and other agencies to provide CEQA clearance for any and all required approvals and/or permits, even if not listed in **Table III-10**.

**Table III-10: Anticipated Permits and Approvals for the Project**

| Lead Agency  | Permit/Approval   |
|--|---|
| City of Oakland  | <ul style="list-style-type: none"> <li>General Plan Amendment for portion of project site to Institutional</li> <li>Rezoning of portion of project site to S-1 Medical Center zone</li> <li>Planned Unit Development Permit (PUD) for entirety of CHRCO site</li> <li>Final Planned Unit Development Permit for Phase 1 (FPUD)</li> <li>Helistop Permit</li> <li>Tree Removal Permit</li> <li>Design Review</li> <li>Subdivision Maps</li> <li>Conditional Use Permit (CUP) Findings</li> <li>Caltrans acquisition and lot merger (mapping)</li> <li>Encroachment Permit for driveway ramp onto Martin Luther King Jr. Way</li> </ul> |
| <b>Responsible Agencies</b>                                    |   |
| Caltrans   | <ul style="list-style-type: none"> <li>Encroachment Permit(s)</li> <li>Decertify State right-of-way</li> <li>Helistop Site Approval Permit and Heliport Permit (Aeronautics Division)</li> </ul>  |
| California Transportation Commission (CTC)                     | <ul style="list-style-type: none"> <li>Approval of sale of decertified State right-of-way</li> </ul>  |
| Office of Statewide Health Planning and Development (OSHPD)    | <ul style="list-style-type: none"> <li>Permitting and enforcement for construction of new acute care hospital in compliance with Title 24</li> <li>Compliance with SB 1953 and related legislation</li> </ul>   |
| California Department of Health Services (CDHS)                | <ul style="list-style-type: none"> <li>Licensing of new acute care facility</li> <li>Review of policies and procedures for compliance with Title 22</li> </ul>  |
| San Francisco Bay Regional Water Quality Control Board (RWQCB) | <ul style="list-style-type: none"> <li>National Pollutant Discharge Elimination System (NPDES) permit for storm water discharge</li> </ul>  |
| Alameda County Flood Control and Water Conservation District   | <ul style="list-style-type: none"> <li>Possible Flood Encroachment Permit</li> </ul>  |
| University of California                                       | <ul style="list-style-type: none"> <li>Possible financial authorization</li> </ul>  |
| <b>Other Agencies and Service Providers</b>                    |   |
| East Bay Municipal Utility District (EBMUD)                    | <ul style="list-style-type: none"> <li>Approval of new service requests and new water meter installations</li> </ul>  |
| Bay Area Air Quality Management District (BAAQMD)              | <ul style="list-style-type: none"> <li>Stationary Source Permits</li> </ul>   |
| Alameda Contra-Costa Transit District (AC Transit)             | <ul style="list-style-type: none"> <li>Relocation of Route 18 bus stop</li> </ul>   |
| Alameda County Airport Land Use Commission                     | <ul style="list-style-type: none"> <li>Helistop consistency determination</li> </ul>  |
| Federal Aviation Administration (FAA)                          | <ul style="list-style-type: none"> <li>Helistop airspace determination</li> </ul>   |

Source: LSA Associates, Inc., 2014.





LSA



Project Sites  
Private Residence, Parcel  
Not Owned by CHRCO

**GENERAL PLAN LAND USE DESIGNATIONS**



Mixed Housing Type Residential



Urban Residential



Neighborhood Center Mixed Use



Community Commercial



Institutional

**RESIDENTIAL ZONING**

Mixed Housing [RM]

Urban [RU]

**COMMERCIAL ZONING**

Neighborhood Center [CN]

**SPECIAL & COMBINING ZONING**

Medical Center [S1]

FIGURE III-21

CHRCO Campus Master Plan Project EIR  
Proposed Revisions to the  
General Plan and Zoning Map

SOURCE: CITY OF OAKLAND, COMMUNITY & ECONOMIC DEVELOPMENT AGENCY, APRIL 2011.

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## **IV. SETTING, IMPACTS, STANDARD CONDITIONS OF APPROVAL, AND MITIGATION MEASURES**

This chapter contains an analysis of each relevant environmental topic that has been identified, through a preliminary analysis and the public scoping sessions for the CHRCO Campus Master Plan Project EIR, and comprises the major portion of the EIR. Sections A through K of this chapter describe the environmental setting of the project as it relates to each specific environmental topic evaluated in the EIR and the impacts that are expected to result from implementation of the project. Standard Conditions of Approval or mitigation measures are proposed to reduce potential impacts, where appropriate.

### **A. ENVIRONMENTAL TOPICS INCLUDED IN THE DRAFT EIR**

The following environmental topics are addressed in this chapter:

- Land Use and Planning
- Aesthetics and Shadow
- Cultural and Historic Resources
- Transportation and Circulation
- Air Quality
- Greenhouse Gas Emissions
- Noise
- Geology, Seismicity and Soils
- Hydrology and Water Quality
- Hazards and Hazardous Materials
- Utilities

Topics determined to not be directly relevant to the proposed project are briefly discussed in Chapter VI, under Effects Found Not to Be Significant, and include Agricultural and Forestry Resources; Biological Resources; Mineral Resources; Population and Housing; Public Services; and Recreation.

### **B. FORMAT OF ENVIRONMENTAL TOPIC SECTIONS**

Each environmental topic considered in this chapter comprises two primary sections: (1) setting, and (2) impacts (construction, operation and cumulative), Standard Conditions of Approval, and mitigation measures. An overview of the general organization and the information provided in the two sections is provided below:

- *Setting.* The setting section for each environmental topic generally provides a description of the physical setting for the project site and its surroundings at the beginning of the environmental review process (e.g., existing land uses, existing soil conditions, existing traffic conditions). An overview of regulatory considerations that are applicable to the specific environmental topic is also provided.
- *Impacts, Standard Conditions of Approval, and Mitigation Measures.* The impacts, Standard Conditions of Approval, and mitigation measures section for each environmental topic presents a discussion of the impacts that could result from implementation of the proposed project. The section begins with the thresholds of significance, establishing the thresholds to determine whether an impact is significant. The latter part of this section presents the impacts from the proposed project, applicable Standard Conditions of Approval, and mitigation measures, if required. Cumulative impacts are also addressed.

Impacts are numbered and shown in bold type, and the corresponding mitigation measures are numbered and indented. Impacts and mitigation measures are numbered consecutively within each topic and begin with an acronymic reference to the impact section (e.g., LU). The following symbols are used for individual topics:

|      |                                 |
|------|---------------------------------|
| LU:  | Land Use and Planning           |
| AES: | Aesthetics and Shadow           |
| CUL: | Cultural and Historic Resources |
| TRA: | Transportation and Circulation  |
| AIR: | Air Quality                     |
| GHG: | Greenhouse Gas Emissions        |
| NOI: | Noise                           |
| GEO: | Geology, Seismicity and Soils   |
| HYD: | Hydrology and Water Quality     |
| HAZ: | Hazards and Hazardous Materials |
| UTL: | Utilities                       |

The following notations are provided after each identified significant impact and mitigation measure:

|      |                             |
|------|-----------------------------|
| LTS: | Less Than Significant       |
| S:   | Significant                 |
| SU:  | Significant and Unavoidable |

These notations are found following each impact and each mitigation measure to identify the significance of impacts before and after mitigation.



## C. THRESHOLDS OF SIGNIFICANCE

Under CEQA, a significant effect is defined as a substantial, or potentially substantial, adverse change in the environment.<sup>1</sup> Each impact evaluation in this chapter is prefaced by thresholds of significance, which are the thresholds for determining whether an impact is significant.

The thresholds of significance utilized in this EIR are from the City of Oakland's Thresholds of Significance Guidelines. To help clarify and provide consistent analysis and decision-making in the environmental review process in the City of Oakland, the City has developed the Thresholds of Significance Guidelines (which have been in general use since at least 2002). The thresholds are offered as guidance in preparing environmental review documents. The City uses these thresholds unless the location of the project or other unique factors warrants the use of different thresholds. The thresholds are intended to implement and supplement provisions of the *CEQA Guidelines* for determining the significance of environmental effects, including Sections 15064, 15064.5, 15065, 15382, and Appendix G, and form the basis of the City's Initial Study and Environmental Review Checklist.<sup>2</sup>

The thresholds are intended to be used in conjunction with the City's Uniformly Applied Development Standards and Conditions of Approval (see discussion below), which are incorporated into projects as Standard Conditions of Approval on a City-wide basis.

CEQA requires the analysis of potential adverse effects of a project on the environment. Potential effects of the environment on a project are legally not required to be analyzed or mitigated under CEQA. However, this EIR nevertheless analyzes potential effects of "the environment on the project" in order to provide information to the public and decision-makers. Where a potential significant effect of the environment on the project is identified, the document, as appropriate, identifies City Standard Conditions of Approval and/or project-specific non-CEQA recommendations to address these issues.

## D. UNIFORMLY APPLIED DEVELOPMENT STANDARDS AND CONDITIONS OF APPROVAL

The City's Uniformly Applied Development Standards and Conditions of Approval (referred to in the EIR as Standard Conditions of Approval or Conditions of Approval (SCA)) are incorporated into projects as conditions of approval regardless of a project's environmental determination. As applicable, the Standard Conditions of Approval are adopted as requirements of an individual project when it is approved by the City and are designed to, and will, substantially mitigate environmental effects. For the CHRCO Campus Master Plan Project, all of the relevant standard conditions have been incorporated as part of the project and are identified in each environmental topic section.

In reviewing project applications, the City determines which Standard Conditions of Approval are applicable, based on the General Plan, zoning district, and the types of permit(s)/approvals(s) required for the project. Depending on the specific characteristics of the project type and/or project site, the City will determine which Standard Conditions of Approval apply to a specific project; for example,

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<sup>1</sup> Public Resources Code 21068.

<sup>2</sup> Although no Environmental Review Checklist was prepared for the EIR, the factors listed for consideration in the Environmental Review Checklist are evaluated in this EIR.

Standard Conditions of Approval related to creek protection permits will only be applied to projects on creekside properties.

Because these Standard Conditions of Approval are mandatory City requirements, the impact analysis assumes that these will be imposed and implemented as part of the project. If a Standard Condition of Approval would reduce a potentially significant impact to less than significant, the impact will be determined to be less than significant, and no mitigation measure would need to be imposed.

The Standard Conditions of Approval incorporate development policies and standards from various adopted plans, policies, and ordinances (such as the Oakland Planning and Municipal Codes, Oakland Creek Protection Ordinance, Stormwater Management and Discharge Control Ordinance, Oakland Tree Protection Ordinance, Oakland Grading Regulations, National Pollutant Discharge Elimination System (NPDES) permit requirements, California Building Code, and Uniform Fire Code, among others), which have been found to substantially mitigate environmental effects. Where there are peculiar circumstances associated with a project or project site that will result in significant environmental impacts despite implementation of the Standard Conditions of Approval, the City will determine whether there are feasible mitigation measures to reduce the impact to less-than-significant levels.

## **E. RECOMMENDED CONDITIONS OF APPROVAL**

Although not required by CEQA, certain “Recommended Conditions” are included in this EIR with respect to certain improvements that are not necessary to address or mitigate any environmental impacts of the project, but nevertheless are recommended herein by City Staff or were identified in technical studies or reports for the project. These recommendations will be considered by decision makers during the course of project review and may be imposed as Project-Specific Conditions of Approval. Other Project-Specific Conditions of Approval supplement Standard Conditions of Approval and are specific to the project as they are identified in technical studies or reports prepared for the project.

## **F. CUMULATIVE ANALYSIS CONTEXT**

CEQA defines cumulative as “two or more individual effects which, when considered together, are considerable, or which can compound to increase other environmental impacts.” Section 15130 of the *CEQA Guidelines* requires that an EIR evaluate potential environmental impacts when the project’s incremental effect is cumulatively considerable. “Cumulatively considerable” means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. These impacts can result from a combination of the proposed project together with other projects causing related impacts. “The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonable foreseeable probable future projects.” The City of Oakland’s analysis approach specifies “past, present, existing, approved, pending and reasonably foreseeable future projects.”

The methodology used for assessing cumulative impacts typically varies depending on the specific topic being analyzed. CEQA requires that cumulative impacts be discussed using either a list of past, present, and probable future projects producing related or cumulative impacts, or a summary of projections contained in an adopted local, regional, or Statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. This EIR uses both approaches to evaluate cumulative impacts, and the particular approach used depends on the topical area under consideration.

Generally, the City's Major Projects List was used to determine past, present, existing, approved, pending, and reasonably foreseeable future projects in the vicinity of the proposed project to evaluate cumulative impacts. Major projects from the City's Major Projects List that pertain to the proposed project area summarized in Table IV.1, below. In some instances, the EIR uses the plan approach to evaluate cumulative impacts. For example, the transportation analysis (and transportation-related traffic and air quality) uses the Alameda County Congestion Management Analysis (ACCMA) travel demand model, which requires inputs at the traffic analysis zones (TAZ) level. The Association of Bay Area Governments (ABAG) projections provide the City-wide and regional economic and demographic inputs. These inputs also incorporate extensive local information regarding the locations for expected growth and change within the City, including past, present, existing, pending, and reasonably foreseeable future development in the area that surrounds the project site.

CEQA also specifies that lead agencies should define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used. The geographic areas near the project site generally include the Temescal, Rockridge, and Telegraph neighborhoods. The geographic scope for each topical area may be different depending upon the nature of the environmental impact being evaluated. For example, the geographic and temporal (time-related) parameters related to a cumulative analysis of air quality impacts are not necessarily the same as those for a cumulative analysis of noise impacts. This is because the geographic area that relates to air quality is much larger and regional in character than the geographic area that could be affected by potential noise impacts from a proposed project and other cumulative projects/growth. The cumulative noise impacts are more localized than air quality and transportation impacts, which are more regional in nature. Accordingly, the parameters of the respective cumulative analyses in this document are determined by the degree to which impacts from this project are likely to occur in combination with other development projects.

CEQA recognizes that the existing condition might change during the course of environmental review analysis and preparation of the EIR. The major projects listed in Table IV.1 are not inclusive of all possible past projects. Projects no longer included on the list are part of the baseline assumptions for analysis in the EIR.

**Table IV.1: Cumulative Projects**

| Project Name |   | Description  |
|--------------|---|--|
| 1            | <b>Merrill Gardens at South Rockridge</b><br>4901-4939 Broadway, 311-313 51 <sup>st</sup> Street, 4964-4974 Desmond Street<br><br>APN: 013 -1136-008-04, 013 -1136-011-00, 013 -1136-012-00, 013 -1136-010-00, 013 -1136-009-02, 013 -1106-005-05, 013 -1136-004-02, 013 -1136-022-01, 013 -1106-021-00 | <ul style="list-style-type: none"> <li>• 161 residential care units</li> <li>• 10,000 S.F. of commercial space</li> </ul>  |
| 2            | <b>Merrill Gardens at North Rockridge</b><br>5107, 5117, 5175 Broadway<br><br>APN: 014 -1241-009-00, 014 -1241-008-00, 014 -1241-005-01   | <ul style="list-style-type: none"> <li>• 139 residential units</li> <li>• 11,250 S.F. of commercial space</li> </ul>   |
| 3            | <b>51<sup>st</sup> &amp; Telegraph, Civiq</b><br>5110 Telegraph Ave<br><br>APN: 014 -1226-009-02  | <ul style="list-style-type: none"> <li>• Retain previously approved entitlements</li> <li>• Increase ground floor retail to 19,600 S.F.</li> <li>• 100 residential units</li> <li>• 60,000 S.F. of office</li> </ul> |
| 4            | <b>California Hotel</b><br>3501 San Pablo Ave<br><br>APN: 005 -0479-002-01  | <ul style="list-style-type: none"> <li>• Rehabilitation and conversion of the existing studio and affordable units and ground floor commercial into 137 affordable apartments</li> </ul>                             |
| 5            | <b>1032 39<sup>th</sup> Street</b><br><br>APN: 012 -0953-027-00   | <ul style="list-style-type: none"> <li>• 25 residential units in Oakland</li> <li>• 75 residential units in Emeryville</li> </ul>  |
| 6            | <b>Creekside Mixed Use Project</b><br>5132 Telegraph Ave<br><br>APN: 014 -1226-013-00   | <ul style="list-style-type: none"> <li>• 120 residential units</li> <li>• 7,700 S.F. of commercial</li> </ul>  |
| 7            | <b>Bakery Lofts</b><br>945 53 <sup>rd</sup> Street<br><br>APN: 049 -1173-002-00   | Phase III:<br><ul style="list-style-type: none"> <li>• 61 units</li> <li>• 3,161 S.F. of commercial</li> </ul>   |
| 8            | <b>Courthouse Condominiums</b><br>2935 Telegraph Ave.   | <ul style="list-style-type: none"> <li>• 142 residential units</li> <li>• 3,000 S.F. of commercial</li> </ul>  |
| 9            | <b>4801 Shattuck Ave</b><br><br>APN: 013-1162-009-01<br>013-1162-009-02<br>013-1162-010-00  | 44 units   |
| 10           | <b>51<sup>st</sup> &amp; Telegraph</b><br>Area bounded by Telegraph, 51 <sup>st</sup> and Clark Streets<br><br>APN: - Multiple  | <ul style="list-style-type: none"> <li>• 68 residential units</li> <li>• Less than 3,000 S.F. of commercial space</li> <li>• 4 buildings built over subterranean parking</li> </ul>                                  |
| 11           | <b>3884 Martin Luther King Jr. Way</b><br><br>APN: 012-0968-031-00  | 40 residential units   |
| 12           | <b>MacArthur BART Transit Village</b><br>7 acre site located between Telegraph, 40 <sup>th</sup> , and Macarthur and Highway 24   | <ul style="list-style-type: none"> <li>• 624 residential units</li> <li>• 42,500 S.F. retail/commercial space</li> </ul>   |
| 13           | <b>Safeway (Broadway at Pleasant Valley)</b><br>5050-5100 Broadway<br><br>APN: 014-1242-002-03, 014-1242-005-07   | <ul style="list-style-type: none"> <li>• Redevelopment of existing shopping center with new 323,000 S.F. shopping center</li> </ul>  |
| 14           | <b>Safeway (College Ave)</b><br>6310 College Ave<br><br>APN: 048A-7070-001-01   | <ul style="list-style-type: none"> <li>• New 50,000 S.F. grocery store and ground floor retail</li> </ul>  |

**Table IV.1: Cumulative Projects**

| Project Name |   | Description   |
|--------------|---|---|
| 15           | <b>Alta Bates Summit Medical Center – Summit Campus Master Plan</b><br>23-acre campus generally between Telegraph and Webster, and between 30 <sup>th</sup> Street and 34 <sup>th</sup> Street<br>APN - Multiple  | <b>ABSMC Master Plan</b><br><i>Phase 1</i> <ul style="list-style-type: none"> <li>• Demolition of the Merritt classroom and other small buildings</li> <li>• Construction of new 230,000 S.F. (11-story) acute care hospital</li> <li>• 1,090-space parking garage (7-stories)</li> </ul> <i>Phase 2</i> <ul style="list-style-type: none"> <li>• Longer-term campus-wide improvements, new medical office buildings, classrooms, and closure of a portion of Summit Street for development of a new campus plaza</li> </ul>  |
| 16           | <b>Kaiser Permanente</b><br>Generally the area surrounding the intersection of Broadway and Macarthur Boulevard.  | <b>Master Plan</b><br><i>Phase 2</i> <ul style="list-style-type: none"> <li>• 1,216 space parking structure</li> <li>• Hospital building (346 beds, approx. 1.06 MSF)</li> <li>• Central utility plant</li> </ul> <i>Phase 3</i> <ul style="list-style-type: none"> <li>• Demolition of existing hospital tower and low-rise (except for recent Emergency Department addition and Fabiola Building)</li> <li>• Conversion of ground-floor parking on Site 7 (38 spaces to accommodate and additional 6,000 S.F. of retail)</li> <li>• Conversion of Emergency Department addition to temporary medical services use</li> <li>• Construction of parking lot of approx. 189 spaces</li> <li>• Construction of a new Central Administration MSB (approx. 60,000 S.F.)</li> </ul> |
| 17           | <b>Broadway Valdez District Specific Plan</b><br>95.5-acre area at the northern edge of the Central Business District, including land on both sides of Broadway, extending 0.8 miles from Grand Avenue to I-580   | Approximately 3.7 million square feet of development, comprised of 695,000 square feet of office space, 1.1 million square feet of restaurant/retail space, 1,800 residential units, a 180-room hotel, and 6,420 parking spaces.  |
| 18           | <b>West Oakland Specific Plan</b><br>1,900-acre area bounded by I-580 to the north, I-980 to the east, and I-880 to the west, in addition to two gateway areas, including the industrial area south of I-880 centered on 3 <sup>rd</sup> Street and the Oakland portion of the East Bay Bridge Shopping Center north of I-580 | Provides for up to 5,000 net new housing units and 4.07 million square feet of net new non-residential building space within identified opportunity areas.  |
| 19           | <b>Lake Merritt BART Station Area Plan</b><br>315 acre area generally bounded by 14 <sup>th</sup> Street to the north, I-880 to the south, Broadway to the west, and 5 <sup>th</sup> Avenue to the east   | Long-range vision for a high-intensity neighborhood, including the addition of 4,900 new housing units, 404,000 square feet of retail, and 1.2 million square feet of office uses.  |

**Table IV.1: Cumulative Projects**

| Project Name |   | Description  |
|--------------|---|--|
| 20           | <b>Coliseum Area Specific Plan</b><br>800-acre area in East Oakland bound by 66 <sup>th</sup> Avenue to the north, San Leandro Street to the east, Hegenberger Road on the south, and San Leandro Bay and the Oakland International Airport to the west | Up to three new sports venues totaling nearly 1.7 million square feet of building space or 131,000 seats; just over 14 million square feet of science and technology, office, light industrial, logistics, and retail space; and 6,370 residential units resulting in a net increase of approximately 8.3 million square feet. Up to 15,000 new parking spaces and 39 acres of new, publically-accessible open space would also be included. |

Note: Generally the City's Major Projects List was used in part, to determine past, present, existing, approved, pending and reasonably foreseeable future projects in the vicinity of the CHRCO Campus Master Plan Project to inform development of a baseline for cumulative analysis. Since the NOP was issued, projects listed on the Major Projects List might have changed; however, the projects from the Major Projects List as of the date environmental review began represents a more conservative approach to the cumulative analysis in this EIR since development of all the projects identified in the Major Projects List represents a more intensive growth scenario and therefore has the potential to generate additional cumulative impacts.

Source: City of Oakland, 2014.

## A. LAND USE AND PLANNING

This section describes existing land uses on the project site as well as the surrounding area, defines the existing regulatory context, identifies potential land use impacts, and recommends mitigation measures, where appropriate. This section also contains a discussion of the consistency of the proposed project with relevant land use policies; however, according to CEQA, policy conflicts do not, in and of themselves, constitute a significant environmental impact. Policy conflicts are considered to be environmental impacts only when they would result in direct *physical* impacts. Therefore, land use policies are discussed in this section for informational purposes only. Physical impacts associated with potential policy inconsistencies are discussed in this EIR under specific topical sections, such as noise, air quality, and transportation and circulation.

### 1. Setting

The following section describes the existing land uses and regulatory context of the project site and its vicinity. Land uses at and adjacent to the project site are identified in the aerial photo provided in Figure III-2 in Chapter III, Project Description. Photographs of the site are provided in Figures III-7a and III-7b. Additional photos of the site and surrounding area are also provided in Section IV.B, Aesthetics and Shadow.

**a. Overview.** The project site primarily consists of the 11-acre CHRCO campus, which is located at 747 52<sup>nd</sup> Street in the northern portion of Oakland. The campus is generally bounded by 53<sup>rd</sup> Street to the north, State Route 24 (SR 24) to the east, and Martin Luther King Jr. Way and the elevated BART tracks to the south and west. The existing CHRCO campus is oriented on a north-south axis and consists of 31 parcels. Two additional parcels located within the campus boundaries are not owned by the hospital (and the hospital has no current plans for acquisition). In addition, the project site includes a 1.5-acre area located between the Martin Luther King Jr. Way off-ramp from SR 24 and 53<sup>rd</sup> Streets, adjacent to westbound SR 24, that is currently within a Caltrans right-of-way and which the hospital proposes to acquire and improve in connection with the project. Public roadways that cross through the campus include Dover Street (north-south) and 52<sup>nd</sup> Street (east-west).

The project site is located in north Oakland, which is characterized as a mature urban community that includes key corridors that provide mobility and business areas for surrounding residential neighborhoods. The primary land uses in north Oakland include residential and neighborhood-oriented commercial uses. Neighborhoods that surround the site include Santa Fe and Bushrod to the north, Temescal and Rockridge to the east, and Longfellow to the south.

**b. Existing Land Uses within the Project Site.** The CHRCO campus is an existing hospital facility and contains a complex of medical buildings on a triangular site. Figure III-6 in Chapter III, Project Description shows the existing campus site plan. Buildings and structures located in the northern area (north of 52<sup>nd</sup> Street) of the CHRCO campus include the 5-story, 115,559-square-foot Outpatient Center Building 1 (OPC1), 5-story parking garage structure, several CHRCO-owned residential buildings (used for office) and 2 private residences. **Figure IV.A-1** depicts the existing residential buildings located within the project site and notes their current use.

The main hospital facilities are located south of 52<sup>nd</sup> Street in the central area of the campus, and they total approximately 257,727 square feet of floor area. These facilities include seven 2- to 5-story buildings or building additions, which include the 1982 Patient Tower (1982 Tower), Ford Diagnostic

and Treatment Center (D&T Building) and Cardiac Catheterization Lab, B/C Wing, A/B Wing, Cafeteria, the Western Addition, and the Central Utility Plant.<sup>1</sup>

Other buildings and structures located in the southern area (south 52<sup>nd</sup> Street and within the main hospital facilities) of the CHRCO campus include the 36-foot-tall helistop structure, 2-story Bruce Lyon Memorial Research Laboratory Building, the Bruce Lyon addition (Hem/Onc administrative offices) and five temporary trailers that house office and administrative uses.

There are currently approximately 875 patients at the CHRCO campus each weekday. In addition, there are approximately 604 visitors to the hospital each weekday.<sup>2</sup> CHRCO has 170 licensed beds at the hospital, and the census (the number of occupied beds) varies on a daily basis. There are a total of approximately 2,166 hospital employees on campus over a 24-hour period on any given weekday.

Currently, there are a total of 1,107 parking spaces associated with the CHRCO campus. On the CHRCO campus, the parking garage and south parking lot are located in the northern and southern areas of the campus, respectively. The parking garage includes 650 spaces for the public and 147 spaces for physicians and employees of the hospital. The south parking lot includes 48 spaces and is reserved for employees. The annex parking lot is located across Martin Luther King Jr. Way, southwest of the CHRCO campus, and provides 182 parking spaces for employees only. Approximately 50 additional vehicles can be accommodated at the annex employee lot using stacked valet parking. In addition, the existing Family House includes 9 parking spaces for patient families.

In total, there are 36 structures within the campus that house hospital facilities, temporary trailers, and former residential buildings converted to office or other hospital uses. Table III-1 in Chapter III, Project Description details the parcel number, street address, type of building or structure, construction date, number of stories, area or building square footage, and current use or service for the above facilities. Each parcel is numbered within the table and the numbering system corresponds to the parcel location identified in Figure III-6.

In addition to land uses associated with the built environment, the campus also includes limited open space and landscaped areas used for both passive and active uses. Currently, there is an approximately 1,600-square-foot courtyard between the A/B Wing and B/C Wing. Adjacent to the courtyard there is an 800-square-foot play area with climbing structure. This area is open at all times, and is used intermittently, primarily by siblings of patients, and on occasion, by patients. The play area is provided in accordance with California Building Code 1224.30.3.1 which requires a play area for the pediatric nursing unit.<sup>3</sup> Also adjacent to the courtyard is the Butterfly Garden which was constructed in approximately 1997. The space was created as a living lab for the students, as well as a welcoming place for patients, families and staff to have some solace.

<sup>1</sup> Table III-1 in Chapter III, Project Description identifies and describes terms referring to existing buildings and structures.

<sup>2</sup> Vendors and contractors are classified as visitors, as opposed to hospital employees.

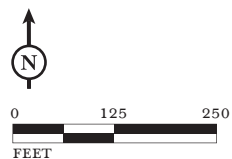
<sup>3</sup> A pediatric nursing unit is defined as a hospital that has eight or more licensed pediatric beds.









FIGURE IV.A-1

LSA



- |   |   |   |                    |
|---|---|---|--------------------|
|  | CHRCO-owned Residences<br>Currently Used for Office |  | Private Residences |
|  | CHRCO-owned Residence<br>(Family House)             |  | Project Site       |

SOURCES: GOOGLE EARTH; AUGUST 2012; LSA ASSOCIATES, INC., 2014.

I:\CHR1201 Childrens Hospital\figures\Fig\_IVA1.ai (5/14/14)

CHRCO Campus Master Plan Project EIR  
Residential Structures on the Project Site

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The 1.5-acre Caltrans right-of-way, which is also part of the project site, currently consists of undeveloped, vegetated slopes.

**c. Existing Land Use in Vicinity of the Project Site.** The CHRCO campus is surrounded by residential areas to the north, roadways to the south, east and west, with residential uses beyond. Existing land uses that surround the project site are described below.

**(1) Land Uses to the North.** A segment of 53<sup>rd</sup> Street, a two-way approximately 32-foot-wide roadway with parallel parking on both sides, forms the northern boundary of the CHRCO campus. Immediately across 53<sup>rd</sup> Street, land uses consist primarily of one- to two-story single-family homes oriented on a grid street pattern. The majority of the residences in this neighborhood were constructed in the early 20<sup>th</sup> century. Dover Street Park, an approximately 1-acre park that includes a play structure, community garden, benches, and lawn areas, is located about five blocks to the north. The approximately 6.5-acre Children's Hospital Oakland Research Institute (CHORI) campus is located at 5700 Martin Luther King Jr. Way, about 0.4 miles north of the main CHRCO campus and west of the park. The CHORI campus currently functions as a medical research facility. Neighborhood-serving commercial uses are located along Martin Luther King Jr. Way to the northwest. The Oakland-Berkeley border is located just over 0.5 miles to the north and residential neighborhoods dominate the land use pattern between the CHRCO campus and the edge of the City.

**(2) Land Uses to the East.** The eight-lane SR 24, which is divided by Bay Area Rapid Transit (BART) tracks, is immediately east of the CHRCO campus and the westbound on-ramp that begins at 52<sup>nd</sup> Street forms the eastern border of the project site, adjacent to the existing Caltrans right-of-way. 52<sup>nd</sup> Street, which crosses through the CHRCO campus, continues east and underneath the elevated portion of SR 24 and into the Temescal neighborhood. Temescal is one of the oldest neighborhoods in the City and primarily consists of one- to two-story single-family residences built in the early 20<sup>th</sup> century. Multi-family homes and mid-sized apartment complexes ranging up to five stories in height are also interspersed throughout the area. The main commercial area is centered around Telegraph Avenue, between the MacArthur BART station and 51<sup>st</sup> Street, and about 0.3 miles east of the CHRCO campus.

**(3) Land Uses to the South.** The eastbound off-ramp of SR 24, where it crosses beneath SR 24 and connects with Martin Luther King Jr. Way, forms the southern boundary at the tip of the CHRCO campus. Elevated BART tracks also continue south of the campus and beneath SR 24. SR 24 continues south of the project site where it connects with Interstate 580 (I 580), approximately 0.7 miles to the south. Land uses south of the site are generally dominated by residential neighborhoods divided by SR 24. These neighborhoods primarily consist of one-to two-story single-family homes constructed in the early 20<sup>th</sup> century. The MacArthur BART station is located about 0.6 miles to the south.

**(4) Land Uses to the West.** Martin Luther King Jr. Way, a six-lane arterial roadway with parallel parking on both sides, forms the western boundary of the CHRCO campus. Elevated BART tracks divide the north and south bound lanes. The CHRCO Annex employee parking lot, a surface parking lot, and residential uses are located across Martin Luther King Jr. Way and west of the project site. Residential land uses within this area consist of both single- and multi-family homes, constructed in the early 20<sup>th</sup> century. Helen McGregor Plaza Park is also located immediately west of the campus, across Martin Luther King Jr. Way. This approximately ¼-acre park consists of a plaza with concrete seating areas and landscape trees. The Oakland-Emeryville border is located less than 0.5 miles to the



west, and residential neighborhoods dominate the land use pattern between the CHRCO campus and the edge of the City.

## 2. Regulatory Context

The planning and regulatory documents that guide land use and development on the project site and the consistency of the proposed project with these documents and associated policies are discussed in this section. Applicable land use planning and regulatory documents include several elements from the City of Oakland's General Plan, including: Land Use and Transportation; Open Space Conservation, and Recreation; Noise; Safety; Historic Preservation; and Scenic Highways Elements. In addition, the City of Oakland Planning Code, the City's Sustainable Community Development Initiative, the City's Energy and Climate Action Plan, the City's Green Building Ordinance, the City's Complete Streets Ordinance, the City's Bicycle and Pedestrian Master Plans, and the 2013-15 Capital Improvement Program are described and evaluated.

Conflicts with a General Plan do not inherently result in a significant effect on the environment within the context of CEQA. As stated in Section 15358(b) of the *CEQA Guidelines*, "[e]ffects analyzed under CEQA must be related to a physical change." Section 15125(d) of the Guidelines states that EIRs shall discuss any inconsistencies between the proposed project and applicable General Plans in the Setting section of the document (not under Impacts).

Further, Appendix G of the Guidelines (Environmental Checklist Form) makes explicit the focus on *environmental* policies and plans, asking if the project would "conflict with any applicable land use plan, policy, or regulation ... *adopted for the purpose of avoiding or mitigating an environmental effect*" (emphasis added). Even a response in the affirmative, however, does not necessarily indicate the project would have a significant effect, unless a physical change would occur. To the extent that physical impacts may result from such conflicts, such physical impacts are analyzed elsewhere in this EIR.

It should also be noted that the General Plan contains many policies, which may in some cases address different goals, and thus some policies may compete with each other. The Planning Commission and City Council, in deciding whether to approve the proposed project, must decide whether, on balance, the project is consistent (i.e., in general harmony) with the General Plan.

**a. Oakland General Plan.** The City of Oakland General Plan (General Plan) is a comprehensive plan for the growth and development of the City. The General Plan is organized into several topical chapters including policies related to: land use and transportation; housing; recreation; conservation and open space; noise; environmental hazards; historic resources; and scenic highways. Each General Plan Element is applicable to the project site and is further described below.

Regarding a project's consistency with the General Plan in the context of CEQA, the Oakland General Plan states the following:

*The General Plan contains many policies which may in some cases address different goals, policies and objectives and thus some policies may compete with each other. The Planning Commission and City Council, in deciding whether to approve a proposed project, must decide whether, on balance, the project is consistent (i.e., in general harmony) with the General Plan. The fact that a specific project does not meet all General Plan goals, policies and objectives*

*does not inherently result in a significant effect on the environment within the context of the California Environmental Quality Act (CEQA). (City Council Resolution No. 79312 C.M.S.; adopted June 2005)*

General Plan land use policies applicable to the proposed project are provided in **Table IV.A-1**, located at the end of this section. An evaluation of the proposed project's consistency with these policies is also included in this table.

**(1) Land Use and Transportation Element.** The Land Use and Transportation Element<sup>4</sup> (LUTE), adopted in March 1998, addresses land use and transportation issues in a single document. In order to accomplish a more holistic planning process that incorporates City-wide infrastructural needs with a desire for neighborhood decision-making, the LUTE includes general development policies for the City, in addition to district-specific policies. The LUTE is bound by a vision for the City that includes creating: "clean and attractive neighborhoods rich in character and diversity, each with its own distinctive identity, yet well-integrated into a cohesive urban fabric" in addition to "a diverse and vibrant downtown with around-the-clock activity."

In addition to City-wide directives, the LUTE provides policies that are specific to areas within the City. The project site is located within the North Oakland area of the City and is surrounded by many residential neighborhoods. The LUTE states that the policy framework for neighborhoods is geared towards strengthening and expanding the framework of healthy, cohesive, and identifiable neighborhoods throughout the City.

The LUTE includes land use designations for all land within the City's boundaries. Figure III-5 in Chapter III, Project Description, shows the General Plan land use designations for the project site and surrounding area. The majority of the project site is designated Institutional, while the properties located east of Dover Street and the annex parking lot on Martin Luther King Jr. Way are designated Mixed Housing Type Residential. In addition, the two CHRCO-owned properties located north of 53<sup>rd</sup> Street are designated Mixed Use Type Residential and Neighborhood Center Mixed Use.

The General Plan states that the intent and desired character of the Institutional classification is to create, maintain, and enhance areas appropriate for educational facilities, cultural and institutional uses, health services and medical uses as well as other uses of similar character. The maximum floor area ratio for this classification is 8.0.

The Mixed Housing Type Residential classification is intended to create, maintain, and enhance residential areas typically located near the City's major arterials and characterized by a mix of single-family homes, townhouses, small multi-unit buildings, and neighborhood businesses where appropriate. The maximum allowable intensity within this classification is 30 units per gross acre.

The Neighborhood Center Mixed Use classification is intended to identify, create, maintain and enhance mixed use neighborhood commercial centers. These centers are typically characterized by smaller scale pedestrian-oriented, continuous street frontage with a mix of retail, housing, office,

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<sup>4</sup> Oakland, City of, 1998. Community and Economic Development Agency, *Envision Oakland, City of Oakland General Plan, Land Use and Transportation Element, Volume 1*, March.

active open space, eating and drinking places, personal and business services, and smaller scale educational, cultural, or entertainment uses.

**Consistency.** The majority of the existing CHRCO campus is located within the Institutional designation and existing and proposed uses on the campus would be consistent with the intent of this designation. In addition to the physical improvements proposed for the campus, the lots east of Dover Street, which are currently within the General Plan's Mixed Housing Type Residential designation, would be changed to Institutional (including one occupied private residence located at 685-689 53<sup>rd</sup> Street) with implementation of the proposed General Plan Amendment to conform to the existing and future use of these properties as support facilities for the main hospital. Although most of these buildings consist of former residences, with the exception of the one existing non-CHRCO-owned private residence, they are all currently occupied by office uses that support the hospital. As part of Phase 2 development, three of these properties would be redeveloped with the new Family Residence Building, which serves as temporary housing for use by the families of hospital patients. The proposed General Plan Amendment is intended to more accurately reflect the current and continued use of these properties by the hospital. Once the designation is implemented, these uses would more clearly meet the intent of the designation by both maintaining and enhancing health service and medical use of the site. Actual development would be restricted by the limits, standards, and guidelines (building height, setbacks, etc.) prescribed by the requested changes to site zoning, PUD permit, and CUPs and at the discretion of the City through the discretionary review of the project. With implementation of the General Plan Amendment, the proposed project would be generally consistent with the Institutional General Plan land use designation.

**(2) Open Space, Conservation and Recreation Element.** In the Open Space, Conservation and Recreation (OSCAR) Element,<sup>5</sup> policies address the management of open land, natural resources, and parks in Oakland. The City-wide park acreage goal set by the OSCAR Element is 10 acres of parkland per 1,000 residents. The City's park ratio at the time the OSCAR Element was completed (1996) was approximately 7.5 acres of parkland per 1,000 residents. The North Oakland area, in which the project site is located, is heavily urbanized and contains only 54.5 acres of parks, or about one-quarter of the City's per-capita goal. However, the area is served by two community parks, three neighborhood parks, one active mini-park, one passive mini-park, two linear parks, and one swimming pool/arts studio complex. Recommendations included in the OSCAR note that opportunities to develop new park space may be limited except for street closures, redevelopment and re-use of institutional sites.

**Consistency.** The CHRCO campus is approximately 11 acres and is fully developed with buildings that currently support medical uses and associated support facilities. Open space areas are limited to the existing courtyard, play area, and Butterfly Garden. The proposed project would demolish a total of 66,582 square feet of existing uses on the campus and construct a total of 399,200 square feet of new building area, for a total of 332,618 square feet of net new building area. As part of Phase 2, the courtyard between the A/B and B/C Wings and the existing play area would be reconfigured. In addition, a playground and garden area would be located on the site of the new Family Residence Building, for use by the families that use this facility. Redevelopment of the campus would not displace existing open space either on- or off-site and the proposed project would be generally

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<sup>5</sup> Oakland, City of, 1996. *Open Space, Conservation, and Recreation (OSCAR) Element*.

consistent with the OSCAR Element as it would generally maintain the existing amount of open space on the campus, which is intended to support the institutional uses found on the campus.

Although the proposed project would result in the removal of 109 protected trees on the site (19 during Phase 1 and 90 during Phase 2),<sup>6</sup> implementation of SCA BIO-2 (Tree Removal Permit) and SCA BIO-3 (Tree Replacement Planting) would be required. In addition, and as shown in Figure III-20, the proposed project would include the planting of native ornamental shrubs and groundcover around much of the site, including around OPC2 and along 52<sup>nd</sup> and 53<sup>rd</sup> Streets. Streetscape planting and street trees would also be planted along Dover Street. Bio-filtration planting areas are also proposed throughout the CHRCO campus. In addition the proposed project would incorporate state of the art energy efficiency technologies, and contribute to Oakland's commitment to environmental stewardship by complying with LEED (Leadership in Energy Efficiency and Design) for Healthcare (for construction of the OPC2 building), CalGreen, Bay Friendly Landscaping and other sustainable performance standards as appropriate, and use best practices where compliance is not specifically mandated.

**(3) Housing Element.** The Housing Element<sup>7</sup> of the General Plan was adopted by the City Council on December 21, 2010 and is currently being updated.<sup>8</sup> California law requires that each city and county adopt a housing element that includes: an assessment of housing needs; a statement of the community's goals, objectives, and policies related to housing; and a five-year schedule of actions to implement the goals and objectives of the housing element. Policy 5.5 in the Housing Element states that the City should continue to use regulatory controls to limit the loss of housing units due to their conversion to non-residential use.

**Consistency.** There are currently a total of 18 residential buildings either located within the CHRCO campus or otherwise associated with CHRCO, as shown in **Figure IV.A-1**. Two of these residential buildings (720 52<sup>nd</sup> Street and 685 53<sup>rd</sup> Street, as shown in Figure III-2 in Chapter III, Project Description) are currently used as private residences and, although they are located within the campus, they are not owned by CHRCO nor are they proposed for acquisition as part of this project. Thus, these buildings would continue to be retained for their current use as housing with implementation of the proposed project.

The existing CHRCO-owned Family House (5222 Dover Street) functions as temporary housing that is utilized by the families of CHRCO patients. This building currently includes 16 bedrooms and common kitchen and living areas and would be retained as part of the new Family Residence Building. The new Family Residence Building would connect to this building and provide an additional 12 to 16 units for use by families with children in the hospital.

The remaining 15 former residential buildings owned by CHRCO have been converted to office uses and currently function as CHRCO-support facilities (although one is currently vacant). Nine of these buildings, two of which are located across 53<sup>rd</sup> Street and are not within the main campus boundaries

<sup>6</sup> HortScience, 2014. *Tree Inventory Report, Children's Hospital Oakland*. February.

<sup>7</sup> Oakland, City of, 2010. *Housing Element, 2007-2014*. November 17.

<sup>8</sup> The Public Review Draft 2015-2023 Housing Element was published in May 2014. It is currently anticipated that the Final Housing Element Update will be adopted in January 2015.

(770 53<sup>rd</sup> Street, a portion of which is used by CHRCO as a child psychiatry clinic, and 670 53<sup>rd</sup> Street), would be retained and would continue to be used by CHRCO as office space.

Of the eight remaining buildings, two would be relocated and six would be completely or partially demolished to accommodate redevelopment activities. One of these structures would be demolished during Phase 1 to allow construction of OPC2. For Phase 2, two structures would be demolished and two would be relocated from 52<sup>nd</sup> Street to 53<sup>rd</sup> Street to allow construction of the Clinical Support Building. The four existing structures located on 53<sup>rd</sup> Street, east of Dover Street, would be partially or completely demolished to allow construction of the new Family Residence Building (although three of the existing residential façades would be retained). Although none of the buildings that would be demolished are currently used as housing, they are residential buildings and the demolition of three of the buildings would be considered the loss of housing (these include the 5204 Martin Luther King Jr. Way, 5212 Dover Street, and 665 53<sup>rd</sup> Street properties). The three buildings on 53<sup>rd</sup> Street to be partially demolished to accommodate the new Family Residence Building would not be considered the loss of housing, as these buildings would be integrated into the new Family Residence Building, which is a semi-transient residential use.

Where the Mixed Housing Type Residential General Plan designation underlies properties at the northeast corner of the site and south of 53<sup>rd</sup> Street (including one private residence), the parcels would be re-designated to Institutional in the General Plan and where the Mixed Housing (RM-2) zoning designation underlies properties south of 53<sup>rd</sup> Street and on either side of Dover Street (including two private residences), these properties would be rezoned to Medical Center (S-I) to be consistent with the current and future use of the buildings as office space and other uses consistent with the Institutional designation and S-1 zoning to support the existing medical facility. Conditional Use Permits would also be obtained, as applicable. It should be noted that the Institutional General Plan designation and S-1 zoning would also allow the continued residential use of the two privately-owned properties (see discussion below regarding permitted uses in the S-1 District).

**(4) Noise Element.** The City's General Plan Noise Element<sup>9</sup> is required to "analyze and quantify, to the extent practical, current and projected noise levels from the following noise sources: major traffic thoroughfares, passenger and freight railroad operations, commercial and general aviation operations, industrial plants, and other ground stationary noise sources contributing to the community noise environment." Noise from these sources is depicted on noise contour maps that are used to guide land use decisions to reduce noise impacts, especially on sensitive receptors. According to the Noise Element, sensitive receptors include "residences, schools, churches, hospitals, elderly-care facilities, hotels and libraries, and certain types of passive recreational open space." The Noise Element also includes a land use-noise compatibility matrix that illustrates the degree of acceptability of exposing various sensitive land uses to noise.

**Consistency.** The proposed project would generally be consistent with the Noise Element of the General Plan as it is not expected to result in new noise sources that would significantly increase noise within the project area. Additionally, the proposed project would be subject to Standard Conditions of Approval that would minimize long- and short-term noise impacts. Refer to Section IV.G, Noise, for additional discussion of potential noise impacts of the project.

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<sup>9</sup> Oakland, City of, 2005. *Noise Element*. March.



(5) **Safety Element.** Adopted in November, 2004, the City of Oakland's Safety Element is intended to "reduce the potential risk of death, injuries, property damage, and economic and social dislocation resulting from large-scale hazards."<sup>10</sup> This Element addresses public safety, geologic hazards, fire hazards, hazardous materials, and flooding hazards. Given the topics that are addressed in the Safety Element, most of its policies generally apply citywide.

**Consistency.** The proposed project is generally consistent with the Safety Element. The project would be required to conform to all applicable safety regulations including fire codes and emergency access, and requirements regarding seismic safety and handling of hazardous materials. Implementation of Standard Conditions of Approval would also further eliminate potential safety issues associated with redevelopment of the project site. Refer to Section IV.H, Geology, Seismicity and Soils, and Section IV.J, Hazards and Hazardous Materials, for additional discussions of potential safety impacts associated with the proposed project.

Martin Luther King Jr. Way is a designated emergency evacuation route in the Safety Element. However, development of the project would not significantly affect the City street grid system within or near this route and would therefore not impede an emergency access route or interfere with an emergency response or evacuation plan. Temporary, construction-related closures of streets would require traffic control plans to ensure emergency vehicle access, as required by SCA TRA-2, described further in Section IV.D, Transportation and Circulation. Compliance with this City of Oakland Standard Condition of Approval would ensure that any potential construction-related impacts associated with emergency access, response, or evacuation would be less than significant. In addition, traffic generated by the proposed project would not impede the use of Martin Luther King Jr. Way as an evacuation route, given that no significant impacts related to level of service or other traffic circulation criteria would result.

(6) **Historic Preservation Element.** The Historic Preservation Element<sup>11</sup> (HPE) defines goals, objectives, policies and actions that encourage preservation and enhancement of Oakland's older buildings, districts and other physical environmental features having special historic, cultural, educational, architectural or aesthetic interest or value.

HPE policies define the criteria that must be met by a resource before it is listed in Oakland's local register of historical resources. Based on a City-wide preliminary architectural inventory completed by the Oakland Cultural Heritage Survey (OCHS), pre-1945 properties have been assigned a significance rating of A, B, C, D, or E and assigned a number (1, 2, or 3) which indicates their status as a historical resource and identifies those properties warranting special consideration in the planning process. Refer to Section IV.C, Cultural and Historic Resources, for more detail on the HPE and the OCHS ratings.

The goals of the Historic Preservation Element include the following:

- **Goal 1:** To use historic preservation to foster the economic vitality and quality of life in Oakland by:

<sup>10</sup> Oakland, City of, 2004. *Protect Oakland, City of Oakland General Plan, Safety Element*. November

<sup>11</sup> Oakland, City of, 1994. *City of Oakland Historic Preservation, an Element of the Oakland General Plan*. March 8.

- (1) Stressing the positive community attributes expressed by well-maintained older properties;
  - (2) Maintaining and enhancing throughout the City the historic character, distinct charm, and special sense of place provided by older properties;
  - (3) Establishing and retaining positive continuity with the past thereby promoting pride, a sense of stability and progress, and positive feelings for the future;
  - (4) Stabilizing neighborhoods, enhancing property values, and conserving housing stock, increasing public and private economic and financial benefits, and promoting tourist trade and interest through preservation and quality maintenance of significant older properties;
  - (5) Preserving and encouraging a city of varied architectural styles and environmental character reflecting the distinct phases of Oakland's cultural, social, ethnic, economic, political, and architectural history; and
  - (6) Enriching the quality of human life in its educational, spiritual, social, and cultural dimensions through continued exposure to tangible reminders of the past.
- **Goal 2:** To preserve, protect, enhance, perpetuate, use, and prevent the unnecessary destruction or impairment of properties or physical features of special character or special historic, cultural, educational, architectural or aesthetic interest or value. Such properties or physical features include buildings, building components, structures, objects, districts, sites, natural features related to human presence, and activities taking place on or within such properties or physical features.

**Consistency.** The project site includes eight historical resources (for the purposes of CEQA), consisting of the A/B Wing and seven residential properties that are contributors to the 55<sup>th</sup> and Dover Residential Historic District (refer to Figure IV.C-1 in Section IV.C, Cultural and Historic Resources). Project impacts to these historical resources include partial demolition (the façades would be retained intact) of three contributors to the Historic District to accommodate construction of the new Family Residence Building during Phase 2. However, implementation of the City's Standard Conditions of Approval would ensure that impacts to historic resources would be less than significant and that the project would not be inconsistent with the General Plan's HPE. Physical impacts associated with cultural resources are discussed in Section IV.C, Cultural and Historic Resources.

**(7) Scenic Highways Element.** In September 1974, the City adopted the Scenic Highways Element, which sets a framework for designated and potential scenic highways and routes throughout the City and policies for establishing and preserving such routes. Prior to the City adopting the Element, the State legislature included the MacArthur Freeway (I 580) in its entirety in the State Scenic Highways System in 1970 by an act of the State legislature. The 1974 Element identifies I 580 as a designated scenic route and includes specific policies for development occurring within the view corridor. SR 24 is also listed for possible future scenic designation.

**Consistency.** The proposed project would be consistent with the Scenic Highways Element. The project site is located approximately 0.75 miles north of I 580. Redevelopment of the site would not result in a change in views from this scenic corridor. In addition, although the project site is located adjacent to SR 24, the view from this roadway towards the CHRCO campus would be similar to the existing built environment within view of this roadway corridor. Scenic resources within view

of this roadway, which is not officially designated as a scenic route, would not be substantially altered. Refer to Section IV.B, Aesthetics and Shadow, for additional discussion.

**b. City of Oakland Planning Code.** The City of Oakland Planning Code (Planning Code) implements the policies of the General Plan and other City plans, policies, and ordinances. The Planning Code divides the City into zoning districts, each of which is assigned different regulations. These regulations direct the construction, nature, and extent of building use at the time of project application completeness. The project site is zoned Medical Center (S-1) and Mixed Housing Type Residential (RM-2) as shown in Figure III-5. The neighborhood-serving commercial uses along Martin Luther King Jr. Way, north of 53<sup>rd</sup> Street, are zoned Neighborhood Commercial (CN-3).

The Planning Code states that the S-1 zone is intended to create, preserve, and enhance areas devoted primarily to medical facilities and auxiliary uses, and is typically appropriate to compact areas around large hospitals. Residential, civic, and medical service uses are permitted by right in this district, and there are no prescribed height maximums, except on lots lying on a boundary of other zones. Commercial and parking uses are subject to the conditional use permit process.

The RM-2 zone is intended to create, maintain, and enhance residential areas characterized by a mix of single family homes, duplexes, townhouses, small multi-unit buildings, and neighborhood businesses where appropriate. Residential and residential care uses are permitted, but would be subject to the conditional use process. The maximum height for primary buildings in this district would be 30 feet.

The CN-3 zone, which only covers a portion of one existing parcel owned by CHRCO and is located north of 53<sup>rd</sup> Street, is intended to create, improve, and enhance area neighborhood commercial centers that have a compact, vibrant pedestrian environment.

The above zoning districts are subject to development review standards which generally include maximum densities and lot coverages, minimum yards and open spaces, minimum parking spaces, and buffering and floor area ratio requirements.

**Consistency.** The majority of the existing CHRCO campus is located within the S-1 zoning district, and existing and proposed uses on the campus would be consistent with the intended uses within the district. The majority of the project site currently functions as a medical center within an existing campus, which is the purpose of the S-1 zoning. In addition to the physical improvements proposed for the campus, the lots east of Dover Street, which are currently within the RM-2 district, would be rezoned to S-1 (including two occupied private residences) in order to conform to the existing and future use of these properties as support facilities for the main hospital, which is generally centered south of 52<sup>nd</sup> Street. A Planned Unit Development (PUD) permit would also apply to the entirety of the project site, although implementation would be staged to facilitate the project's construction phasing. With implementation of the PUD, certain existing development standards may be modified or waived. Existing lot lines throughout the campus would also be merged pursuant to a Vesting Tentative Map and Final Map(s). The hospital would also apply for Conditional Use Permits (CUPs) to authorize the use of existing residential structures as office space. No change is proposed to the properties located across 53<sup>rd</sup> Street or the annex parking lot, with the exception that CUPs would be requested for the two properties north of 53<sup>rd</sup> Street to authorize the use of these existing residential structures as office space.

Actual development would be restricted by the limits, standards, and guidelines (building height, setbacks, etc.) prescribed by the requested changes to site zoning, PUD permit, and CUPs and at the discretion of the City through the discretionary review of the project. With implementation of the rezoning, merging of lot lines and requested permits, the proposed project would be generally consistent with the S-1 zoning designation.

**c. Sustainable Community Development Initiative.** The Oakland City Council adopted a Sustainable Community Development Initiative in 1998. The Initiative is a program that seeks to enhance the environmental sustainability of City operations and private development within the City. The major objectives of the Initiative include the following: economic development; employment training and continuing education; encouragement of in-fill housing, mixed use development, and sustainable (“green”) building; making City operations and services a model of sustainable practices; and increasing community involvement. The Sustainable Development Initiative comprises voluntary guidelines intended to preserve environmental health and increase economic development, and private developers are not required to incorporate them into projects.

**Consistency.** The proposed project would be generally consistent with the City’s Sustainable Development Initiative. The proposed project includes redevelopment of an existing infill site currently occupied by medical uses with similar uses. The site is within close proximity to public transportation that would incorporate green building techniques and would therefore be generally consistent with the intent and objectives of the Sustainable Development Initiative. The project would include green building techniques consistent with LEED Silver Certification levels for LEED Healthcare 2009. For a full discussion of green building features, see the Green Building Ordinance discussion, below and Section IV.F, Greenhouse Gas Emissions.

**d. Energy and Climate Action Plan.** The Oakland City Council adopted the Oakland Energy and Climate Action Plan (ECAP) on December 4, 2012. The purpose of the ECAP is to identify and prioritize actions the City can take to reduce energy consumption and GHG emissions associated with Oakland. The plan establishes GHG reduction actions, as well as frameworks for coordinating implementation and monitoring and reporting on progress. The ECAP outlines a ten year plan including more than 150 actions that will enable Oakland to achieve a 36 percent reduction in GHG emission from transportation, building energy use, and material consumption and waste.

**Consistency.** The proposed project would be generally consistent with the ECAP. The proposed project includes redevelopment of an existing infill site currently occupied by medical uses with similar uses. The site is within close proximity to public transportation that would incorporate green building techniques and would therefore be generally consistent with the intent and objectives of the ECAP. The project would include green building techniques consistent with LEED Silver Certification levels for LEED Healthcare 2009. For a full discussion of green building features, see the Green Building Ordinance discussion, below and Section IV.F, Greenhouse Gas Emissions.

**e. Green Building Ordinance.** The City of Oakland adopted a Green Building Ordinance in November 2010 and incorporated the new guidelines as Oakland Municipal Code Chapter 18.02- Sustainable Green Building Requirements for Private Development in addition to California’s green building code requirements. The chapter is intended to promote economic development and enhance the health, safety, and welfare of its residents, workers, and visitors through the integration of environmentally sustainable strategies in building construction and landscapes in the City. The Ordinance applies to new residential construction and alterations of more than 1,000 square feet and

non-residential new construction and alternations of more than 5,000 square feet. The Ordinance requires compliance with the California Building Energy Efficiency Standards (Title 24, Part 6) and third-party documentation (i.e., LEED and/or Green Point Rated) of meeting minimum Green Building Certification standards.

**Consistency.** The proposed project would be consistent with the City's Green Building Ordinance. All work permitted by the City of Oakland would be designed to meet LEED Silver or Green Point Rated certification, depending on the project type. Specifically, as part of Phase 1, the new OPC2 building would be designed to meet LEED Silver certification levels for LEED Healthcare, 2009. Sustainable strategies currently incorporated into OPC2 design include:

- Efficient Active Systems: Efficient mechanical and electrical systems would improve energy efficiency;
- PBT Source Reduction-Mercury, Cadmium & Lead: Persistent Bioaccumulative and Toxic (PBT) Chemicals associated with the life cycle of building materials to be eliminated or greatly reduced;
- Water Conservation: Low-flow fixtures and process water systems would reduce building water use;
- Native Landscaping: Bay-friendly and native landscaping for much of the site would provide habitat and reduces water use for irrigation;
- Cool Roofs: Reflective roofing would reduce heat-islands and solar heat gain;
- Envelope Design: Efficient, insulated envelope and roof construction would reduce energy use;
- Sustainable Materials: Sustainable materials would be used to provide a healthy indoor environment and reduce impacts to the environment;
- Eliminate Light Pollution: Exterior site lighting would be minimal to eliminate impacts on the night sky;
- Natural Light & Views: Appropriate glazing would provide natural light for interior spaces and views to the outdoors;
- Outdoor Access: Exterior courtyard would provide access to outdoor spaces and places of respite for patients, staff, and visitors;
- Public Transportation: Public bus lines are in close proximity to the CHRCO campus and a courtesy shuttle takes hospital visitors to and from BART;
- Bicycle Access: Secure bicycle racks are provided for staff and visitors to the site;
- Sustainable Education: Incorporated into site features and in project signage; and
- Community Connectivity: Site is closely connected to many community services.

Buildings constructed under Phase 2 subject to green building standards would include the Family Residence Building (Green Point Rated) and Clinical Support Building (LEED Silver). All inpatient services and the Central Utility Plant would be permitted by OSHPD and would follow State CALGREEN requirements. Buildings constructed under Phase 2 subject to OSHPD standards would include the Link Building and the Patient Pavilion.

**f. Bicycle Master Plan.** The Bicycle Master Plan<sup>12</sup> (BMP) is the official policy document addressing the development of facilities and programs to enhance the role of bicycling as a viable transportation choice in Oakland. The BMP is part of the General Plan LUTE. The BMP defines City policies and recommends actions that would encourage and support bicycle travel improvements.

To develop Oakland as a bicycle-friendly community, the BMP identifies the following goals:

- **Infrastructure:** Develop the physical accommodations, including a network of bikeways and support facilities, to provide for safe and convenient access by bicycle.
- **Education:** Improve the safety of bicyclists and promote bicycling skills through education, encouragement, and community outreach.
- **Coordination:** Provide a policy framework and implementation plan for the routine accommodation of bicyclists in Oakland's projects and programs.

**Consistency.** The proposed project is generally consistent with the goals of the BMP. New bicycle parking spaces would be located on the campus as part of Phase 2 and a portion of 52<sup>nd</sup> Street is proposed to be restriped to include the addition of a Class II bicycle lane. The proposed modifications to existing bicycle facilities would make bicycling safer and a more attractive mode of transportation. In addition, the existing Class II facilities within the vicinity of the site (Shattuck Avenue, Telegraph Avenue, 55<sup>th</sup> Street, and West Avenue) and Class III bicycle facilities (along 51<sup>st</sup> Street and Genoa Street) have excess capacity to handle the increase in bicycles as a result of the project. The project proposes no features which would be unsafe to bicycle travel. The project would also be subject to a Transportation Demand Management (TDM) Plan which would identify measures to increase bicycle use and reduce parking demand, consistent with the vision of the Bicycle Master Plan (per SCA TRA-1). Refer to Section IV.D, Transportation and Circulation, for additional discussion regarding bicycle facilities and safety.

**g. Pedestrian Master Plan.** The Pedestrian Master Plan<sup>13</sup> is intended to promote pedestrian safety and access to ensure that Oakland is a safe, convenient, and attractive place to walk. It establishes a Pedestrian Route Network which includes streets, walkways, and trails that connect to schools, libraries, parks, neighborhoods, and commercial districts throughout the City. The Pedestrian Master Plan is part of the General Plan LUTE.

The goals of the Pedestrian Master Plan include the following:

- *Pedestrian Safety.* Create a street environment that strives to ensure pedestrian safety.
- *Pedestrian Access.* Develop an environment throughout the City – prioritizing routes to school and transit – that enables pedestrians to travel safely and freely.
- *Streetscaping and Land Use.* Provide pedestrian amenities and promote land uses that enhance public spaces and neighborhood commercial districts.
- *Education.* Educate citizens, community groups, business associations, and developers on the safety, health, and civic benefits of walkable communities.

<sup>12</sup> Oakland, City of, 2007. *Bicycle Master Plan*. December.

<sup>13</sup> Oakland, City of, 2002. *Pedestrian Master Plan*. November.

- *Implementation.* Integrate pedestrian considerations based on Federal guidelines into projects, policies, and the City's planning process.

The Pedestrian Master Plan designates a Pedestrian Route Network that extends throughout Oakland, and identifies common walking routes to pedestrian destinations. Telegraph Avenue, Shattuck Avenue, and 51<sup>st</sup> Street are all close to the project site and part of the pedestrian network.

**Consistency.** The proposed project would generally be consistent with and would support the policies set forth in the Pedestrian Master Plan. One of the project objectives is to redesign campus access points and the internal street layout to improve and better organize site access, intermodal circulation, and pedestrian safety within the campus and on abutting City streets. As such, the project would incorporate new internal sidewalks that connect to the existing pedestrian network and facilitate the safe movement of patients and staff among buildings. Similarly, the proposed project would integrate quiet and play spaces into the natural landscape of the campus, providing respite for patients and their families. The project would also be subject to a TDM Plan which would identify measures to improve pedestrian access and safety and reduce parking demand, consistent with the vision of the Pedestrian Master Plan (per SCA TRA-1).

During the construction period, pedestrian access to and through the project site could be temporarily limited in some areas. 52<sup>nd</sup> Street currently serves as a pedestrian connection between the campus and residential neighborhoods to the west and the Temescal neighborhood and associated shopping areas to the east. During periods of active construction, particularly during construction of OPC2 as part of Phase 1 and with the improvements to 52<sup>nd</sup> Street proposed as part of Phase 2, pedestrian access could be restricted. However, with implementation of SCA TRA-2, Construction Management Plan, this temporary impact would be reduced. Ultimately, the proposed project would improve pedestrian access and connections to and through the project site.

**h. City of Oakland Complete Streets Policy.** The City of Oakland adopted a Complete Streets Policy via Resolution in January 2013 which stated that the City will plan, design, construct, operate and maintain appropriate facilities for pedestrians, bicyclists, transit users of all abilities, children, the elderly, and people with disabilities as a routine component of new construction, reconstruction, retrofit, and maintenance projects.

**Consistency.** The proposed project would be consistent with the City's Complete Streets Policy and includes pedestrian and bicycle improvements including bicycle parking, a new Class II bicycle lane on 52<sup>nd</sup> Street between Dover Street and Martin Luther King Jr. Way and new internal sidewalks throughout the campus.

**i. City of Oakland Capital Improvement Program.** The City of Oakland's Capital Improvement Program 2013/15 (CIP) represents the City's long-range investment in infrastructure, equipment, and information technology and includes any long-term investment that builds, replaces or improves an asset. Funding for the 2013/15 CIP focused on sidewalk and curb ramp upgrades, street repairs, grant matching funds, traffic signal management, and sewer replacement.

**Consistency.** The proposed project would be consistent with the City's CIP and would fund any necessary bicycle, pedestrian and sewer infrastructure upgrades within the project site as determined necessary by the City during the building permit process.

### 3. Impacts and Mitigation Measures

This section analyzes impacts related to land use and planning that could result from implementation of the proposed project. The subsection begins with the thresholds of significance, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate.

**a. Thresholds of Significance.** Implementation of the proposed project would have a significant impact on the environment if it would:

- (1) Physically divide an established community;
- (2) Result in a fundamental conflict between adjacent or nearby land uses;
- (3) Fundamentally conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect and actually result in a physical change in the environment; or
- (4) Fundamentally conflict with any applicable habitat conservation plan or natural community conservation plan.

**b. Project Impacts.** The following discussion describes the potential land use and planning impacts that could result with implementation of the proposed project. Impacts that would occur under Phase 1 and Phase 2 (i.e., build out) are differentiated as appropriate.

**(1) Divide an Established Community.** The physical division of an established community typically refers to the construction of a physical feature (such as an interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community, or between a community and outlying areas. For instance, the construction of an interstate highway through an existing community may constrain travel from one side of the community to another; similarly, such construction may also impair travel to areas outside of the community.

The project site largely consists of the existing CHRCO campus and adjacent Caltrans right-of-way. The campus is generally confined by existing roadways, including 53<sup>rd</sup> Street to the north, SR 24 to the east and south, and Martin Luther King Jr. Way to the south and west, which form a buffer between the existing campus and surrounding land uses. Facilities utilized by the campus but which are not contained within this boundary include the annex parking lot located across Martin Luther King Jr. Way, southwest of the campus and two CHRCO-owned properties located north of the campus across 53<sup>rd</sup> Street (670 53<sup>rd</sup> Street and 770 53<sup>rd</sup> Street), which are used as office space. Access to the interior of the campus is currently via Martin Luther King Jr. Way, 52<sup>nd</sup> Street, and Dover Street.

Redevelopment activities that would occur as part of Phase 1 and Phase 2 as well as the potential for each phase of development to result in the physical division of an established community are described below. As discussed, the proposed project would not physically divide an established community and this impact would be less than significant.



**Phase 1 Impacts.** Redevelopment activities associated with Phase 1 would include the following:

- Demolition of a single-family residence owned by the hospital and used for offices and construction of OPC2. Uses on this site would change from office to medical, and would intensify. This site is adjacent to Martin Luther King Jr. Way, 52<sup>nd</sup> Street, the existing parking garage and OPC1; it is surrounded by transportation and existing hospital uses.
- Demolition of rear yard additions to accommodate a new driveway to an existing maintenance yard adjacent to OPC1. This new driveway would be between buildings owned by CHRCO, which are used for offices.
- Expansion of the Central Utility Plant. This expansion would be on the north side of the inpatient CHRCO campus (south of 52<sup>nd</sup> Street), adjacent to Martin Luther King Jr. Way.
- Vehicular ingress to the existing parking garage would be moved from 52<sup>nd</sup> Street to Martin Luther King Jr. Way. Outbound and emergency access would continue to be provided to 52<sup>nd</sup> Street.
- Interior renovations to the D&T Building and Cardiac Catheterization Lab and the 1982 Tower.

No changes are proposed north of 53<sup>rd</sup> Street, across Martin Luther King Jr. Way or across SR 24. The proposed project activities would be within or adjacent to the existing campus (see Figures III-8a and-8b in Chapter III, Project Description). Vehicular and pedestrian access to and through the campus would not substantially change with development of Phase 1 and access to and through the campus and to adjacent areas would not be impeded. Implementation of Phase 1 would not result in the physical division of the campus, the adjacent residential areas, or any other established community. Therefore, this impact would be less than significant.

**Phase 2 Impacts.** Redevelopment activities associated with Phase 2 would include the following:

- Demolition of the modular office structure at 665 53<sup>rd</sup> Street, and relocation of two single family residential buildings (used for offices) from 682 and 688 52<sup>nd</sup> Street to 665 53<sup>rd</sup> Street. Office uses would continue at this location, but within structures more similar to the residential neighborhood to the north.
- Demolition of the rear portions of three single family residential buildings (used for office) at 671, 675 and 679 53<sup>rd</sup> Street and the construction of the Family Residence Building, which would provide temporary housing for families with children in the hospital. Land uses at this location would change from office to semi-transient residential. Permanent residential uses are the predominant land use north of 53<sup>rd</sup> Street in this area.
- Demolition of the approximately 2,253 square-foot residential building at 5212 Dover Street to accommodate construction of the Clinical Support Building.
- Construction of the Clinical Support Building on the site of 682 and 688 52<sup>nd</sup> Street (two residential buildings used for offices moved to 53<sup>rd</sup> Street as described above). Office uses would continue on this location, but in a typical office building type structure.

- Demolition of the B/C Wing and construction of the Link Building with Helistop. Hospital related uses would continue on this location, which is within the central portion of the CHRCO campus.
- Demolition of the Bruce Lyon Memorial Research Center, HemOnc Administration Building, Helistop and multiple trailers, and construction of the Patient Pavilion, Parking Garage and Central Utility Plant. Hospital related uses would continue at this location, which is within the central and southern portions of the CHRCO campus, and parking uses would be added. The southeastern and southwestern edges of the campus are adjacent to SR 24 and Martin Luther King Jr. Way, respectively.
- A private driveway would extend from Dover Street south of 52<sup>nd</sup> Street within the existing CHRCO campus to provide access to the proposed Patient Pavilion entrance and drop-off, and the parking structure.
- 52<sup>nd</sup> Street would be restriped to include two lanes of travel in each direction, and the addition of a Class II bicycle lane. This change is intended to improve access through the site, between Martin Luther King Jr. Way and neighborhoods to the west, and the Temescal district to the east.
- Acquisition of a portion of the Caltrans SR 24 right-of-way between the CHRCO campus and SR 24 to accommodate the proposed Clinical Support Building and Parking Garage and to provide a walkway and additional open space.
- Interior renovations to the D&T Building and Cardiac Catheterization Lab and the 1982 Tower.

Similar to Phase 1, no changes are proposed north of 53<sup>rd</sup> Street, across Martin Luther King Jr. Way, or across SR 24 as part of Phase 2. The project activities proposed as part of Phase 2 would generally maintain existing land uses on properties currently owned by CHRCO (see Figures III-8c, -8d and -8e in Chapter III, Project Description). Vehicular and pedestrian access to and through the campus would not substantially change with development of Phase 2 and access to and through the campus and to adjacent areas would not be impeded. Implementation of Phase 2 would not result in the physical division of the campus, the adjacent residential areas, or any other established community. Therefore, this impact would be less than significant.

**(2) Compatibility with Surrounding Land Uses.** As previously described, and as shown in Figure III-2 in Chapter III, Project Description, residential uses are located in proximity to the CHRCO campus, they are located beyond 53<sup>rd</sup> Street to the north, Martin Luther King Jr. Way and elevated BART tracks to the west and south, and SR 24 to the east and south. As described in Section IV.C. Cultural and Historic Resources, hospital uses began on the site around 1912 and residential uses expanded around the site around that same time. Hospital uses have co-existed with residential uses in this area for the past 100 years. Proposed improvements associated with Phase 1 and 2 redevelopment activities and associated impacts related to potential land use conflicts and compatibility are described in detail below. As discussed, the proposed project would generally be compatible with existing and future uses both within and surrounding the campus and this impact would be less than significant.

**Phase 1 Impacts.** Redevelopment activities associated with Phase 1 would result in the demolition of one existing CHRCO-owned residential building (5204 Martin Luther King Jr. Way), which is currently used as office space. Removal of this building would accommodate construction of

the 6-story OPC2 building, which would be located south of the existing parking garage. Rear yard additions on two CHRCO-owned residential buildings would also be demolished to accommodate a new access driveway to an existing maintenance area adjacent to the existing parking structure and OPC1. Access to this driveway would be located off of Dover Street, south of 53<sup>rd</sup> Street. Maintenance facilities for OPC1 and OPC2 would continue to be located next to the existing parking garage and behind the existing CHRCO-owned residential buildings used as office space that front 53<sup>rd</sup> Street, west of Dover Street. The driveway and existing maintenance area would therefore be buffered from the existing residential neighborhood to the north. In addition, vehicular ingress to the existing parking garage would be moved from 52<sup>nd</sup> Street to Martin Luther King Jr. Way; access to 52<sup>nd</sup> Street would be limited to outbound traffic and emergency vehicle access only. No other substantial changes to the on-site circulation pattern or access to the campus would occur under Phase 1 and no conflicts with pedestrian or bicyclist use of surrounding areas would occur.

The above-described demolition and construction activities would not result in a change to the configuration of the existing CHRCO campus or introduce new uses which could create land use conflicts between medical facility and residential uses. The campus currently functions as a medical facility and the main hospital facilities are concentrated within the interior of the campus, generally south of 52<sup>nd</sup> Street. The proposed increase in building square footage (88,659 square feet of net new construction for Phase 1) on the site would represent a continuation of medical facility uses on the campus consistent with the existing use of the site. No new facilities would be constructed along 53<sup>rd</sup> Street during Phase 1. Therefore, potential conflicts between the residential neighborhoods to the north and existing and planned facilities within the campus would not occur.

In addition to the physical improvements proposed for Phase 1, the lots located in the northeast area of the campus which are currently within the General Plan's Mixed Housing Type Residential designation and zoned RM-2 would be changed to Institutional with implementation of the proposed General Plan Amendment and rezoned to S-1 in order to conform to the existing and future use of these properties as support facilities for the main hospital.

A Planned Unit Development (PUD) permit would also apply to the entirety of the project site, although implementation would be staged to facilitate the project's construction phasing. Existing lot lines throughout the campus would also be merged and CUPs would apply to existing residential structures currently used as office space, to bring the existing use into conformance with the City's Planning Code. No change is proposed to the properties located across 53<sup>rd</sup> Street or the annex parking lot, with the exception that CUPs would be requested for the properties north of 53<sup>rd</sup> Street, to ensure conformance with the existing Planning Code and current use of the properties. The proposed changes in the permitted land use and merging of lot lines for some CHRCO-owned properties are intended to bring the existing use of these properties into conformance with existing regulations. Therefore, the proposed land use amendments and rezoning, in addition to the physical changes associated with Phase 1, would not adversely affect the continuity of existing land uses within the campus or north of the campus. Therefore, implementation of Phase 1 would not result in potential conflicts between existing and proposed uses and this impact would be less than significant.

**Phase 2 Impacts.** Redevelopment activities associated with Phase 2 would result in the demolition of the following structures: one residential building and one modular office building south of 53<sup>rd</sup> Street, the rear portions (façades would be maintained) of three residential buildings south of 53<sup>rd</sup> Street, the B/C Wing, Bruce Lyon Memorial Research Center, HemOnc Administrative Building, helistop structure and trailers. Phase 2 would include construction of a Family Residence Building,

Clinical Support Building, Link Building with a helistop on the roof, Patient Pavilion, expansion to the Central Utility Plant, and Parking Structure.

In addition to redevelopment of existing medical and support facilities, circulation improvements would include the extension of a private roadway south of Dover Street to provide access to the proposed Patient Pavilion entrance and drop-off and the parking structure. Other site access and circulation elements in Phase 2 would include the restriping of 52<sup>nd</sup> Street to include 2 lanes of travel in each direction, and the addition of a Class II bicycle lane. Improvements to the existing hospital drop-off, shuttle parking and ambulance parking north and west of the 1982 Tower are also proposed. Phase 2 would also include the acquisition and improvement of a portion of the SR 24 right-of-way currently owned by Caltrans. Changes to the interior circulation pattern are intended to result in improvements to vehicular, pedestrian, and bicycle safety and would not conflict with adjacent uses.

The above-described physical improvements that would occur with implementation of Phase 2 would result in some changes to the configuration of the existing CHRCO campus, including expansion of the campus boundary east towards SR 24. The campus currently functions as a medical facility and the main hospital facilities are and would continue to be concentrated within the campus interior and south of 52<sup>nd</sup> Street, away from existing residential neighborhoods. The proposed increase in building square footage (309,000 square feet of net new construction during Phase 2 and 332,618 square feet of net new building area at project build out) on the site would represent a continuation of medical facility uses on the campus consistent with the existing use of the site.

The new Family Residence Building, which would retain the façades of three existing residential structures, would be constructed along 53<sup>rd</sup> Street. In addition, two residential buildings located on 52<sup>nd</sup> Street, east of Dover Street, which are currently used as office space would be relocated to 53<sup>rd</sup> Street. These uses would be consistent with the existing character and scale of the residential neighborhood to the north. Existing front yard setbacks would be maintained to provide an appropriate buffer that is typical of residential development. A new Clinical Support Building would also be constructed south of the new Family Residence Building, at the corner of Dover and 52<sup>nd</sup> Streets. The remainder of proposed campus improvements would be concentrated south of 52<sup>nd</sup> Street, within the main interior of the campus and away from residential neighborhoods to the north. Redevelopment of this area is not expected to result in land use conflicts with nearby residential uses, due to the distance from existing neighborhoods. The existing private residence located adjacent to the existing OPC1 building would remain; however, this use is already adjacent to existing medical facility uses. Therefore, no new conflicts are expected to occur between this existing use and future uses.

The new helistop structure would be constructed with development of the Link Building, which would be located within the campus interior. Currently, the hospital's helistop is located just south of this planned location. Although the helistop would move slightly north of its present location, it would not be located substantially closer to existing residential uses. As discussed in Section IV.G, Noise, helicopter noise would slightly increase for existing land uses to the north and would slightly decrease for existing land uses to the south. However, the increase would not be substantial and would not conflict with the residential uses to the north.

The proposed land use amendments and rezoning described above under Phase 1 impacts would also apply to Phase 2 development and, in addition to the physical changes associated with Phase 2, would not adversely affect the continuity of existing land uses within the campus or north of the campus.

Therefore, implementation of Phase 2 would not result in potential conflicts between existing and proposed uses; this impact would be less than significant.

**(3) Conflict with Land Use Policies.** Potential fundamental land use policy conflicts are described above under the Setting section (pursuant to CEQA Section 15358(b) and in **Table IV.A-1**, at the end of this section. Conflicts between a project and applicable General Plan or other relevant policies do not constitute a significant physical environmental impact in and of themselves within the context of CEQA. A policy inconsistency is considered to be a significant adverse environmental impact only when it is related to a policy adopted for the purpose of avoiding or mitigating an environmental effect and it is anticipated that the inconsistency would result in a significant adverse *physical* impact based on the established significance thresholds. As such, the project's conflict or inconsistency with a policy could indicate that an environmental threshold has been exceeded. To the extent that the project exceeds an environmental threshold and physical impacts may result from a policy conflict or inconsistency, such physical impacts have been identified and fully analyzed in the relevant topical sections of Chapter IV.

The Oakland General Plan contains many policies that in some cases address different or competing goals. The Planning Commission and City Council, in deciding whether to approve the project applications, must assess whether the project is consistent with the overall policies of the General Plan and must balance competing General Plan goals and objectives as part of its consideration. Additionally, the General Plan states that a specific project that does not meet all General Plan goals, policies, and objectives does not inherently result in a significant effect on the environment in the CEQA context. The project would not conflict with any land use policies adopted for the purpose of avoiding or mitigating an environmental effect.

The majority of the existing CHRCO campus is located within the General Plan's Institutional designation and is zoned S-1. In addition to the physical improvements proposed for the campus, the lots just west of and east of Dover Street, which are currently within the Mixed Housing Type Residential General Plan designation and/or within the RM-2 district, would be designated Institutional and rezoned to S-1 (including two occupied private residences) in order to conform to the existing and future use of these properties as support facilities for the main hospital.

A Planned Unit Development (PUD) permit would also apply to the entirety of the project site, although implementation would be staged to facilitate the project's construction phasing. With implementation of the PUD, certain existing development standards may be modified or waived. Existing lot lines throughout the campus would also be merged pursuant to a Vesting Tentative Map and Final Map(s). The hospital would also apply for Conditional Use Permits (CUPs) to authorize the use of existing residential structures as office space. No change is proposed to the properties located across 53<sup>rd</sup> Street or the annex parking lot, with the exception that CUPs would be requested for the two properties north of 53<sup>rd</sup> Street, to ensure conformance with the existing Planning Code and current use of the properties.

Actual development would be restricted by the limits, standards, and guidelines (building height, setbacks, etc.) prescribed by the requested changes to site zoning, PUD permit, and CUPs and at the discretion of the City through the discretionary review of the project. With implementation of the General Plan Amendment, rezoning, merging of lot lines and requested permits, the proposed project would be generally consistent with the Institutional General Plan and S-1 zoning designations. As

such, the project would be consistent with the applicable General Plan designations and zoning on the project site.

**(4) Conflict with a Habitat or Natural Community Conservation Plan.** The project site is not currently subject to any adopted habitat conservation plan or natural community conservation plan. There is no adopted City of Oakland habitat conservation plan or natural community conservation plan; thus, the project would not result in an impact related to conflicts with a habitat conservation plan or natural community conservation plan.

**c. Cumulative Impacts.** The area considered for the cumulative analysis includes areas within North Oakland and includes the major development projects currently shown in **Table IV.A-1**. As described in this section, the proposed project would not result in significant land use impacts by potentially physically dividing an established community, or conflicting with surrounding land uses, land use policies, or a conservation plan. With implementation of the requested General Plan Amendment, rezoning, and development permits, the proposed project would be consistent with the applicable land use regulations for the site. In particular, these land use approvals would ensure that the existing campus boundary is better defined. Moreover, the proposed project reflects the master development plan for the CHRCO campus over the next 10 years, and no future expansion of campus facilities beyond the hospital's existing campus boundary is contemplated. The proposed project would not result in a considerable contribution to a significant land use and planning cumulative impact.

**Table IV.A-1: Relationship of Project to Relevant General Plan Policies**

| Policy  | Policy Text   | Project's Relationship to Policy  |
|---|---|---|
| <b>Land Use and Transportation Element (LUTE)</b> |   |   |
| Policy N.2.1                                      | Designing and Maintaining Institutions. As Institutional uses are among the most visible activities in the City and can be sources of community pride, high-quality design and upkeep/maintenance should be encouraged. The facilities should be designed and operated in a manner that is sensitive to surrounding residential and other uses. | Implementation of the proposed project would result in the redevelopment of portions of the existing CHRCO campus. Existing facilities would be renovated and modernized and new construction would be designed in accordance with existing green building and sustainable performance standards. Pedestrian and bicycle connections through the campus would be improved and new access points would also improve vehicular access and circulation. Landscaping would be located within and at the perimeter of the campus. In addition, the most intense uses would be concentrated within the campus interior, south of 52 <sup>nd</sup> Street and away from the residential neighborhoods to the north.  |
| Policy N2.3                                       | Supporting Institutional Facilities. The City should support many uses occurring in institutional facilities where they are compatible with surrounding activities and where the facility site adequately supports the proposed uses.   | The proposed project would include renovations to existing buildings on campus, and the construction of new facilities which would improve the hospital's ability to serve the community and comply with State regulations. The campus footprint would not expand into areas that do not already contain medical-support activities.  |
| Policy N2.4                                       | Locating Services Along Major Streets. New large scale community, government, and institutional uses should be located outside of areas that are predominately residential. Preferably, they should be located along major thoroughfares with easy access to freeways and public transit or in the Downtown.                                    | <p>The project includes the redevelopment of an existing medical facility that is generally bounded by 53<sup>rd</sup> Street to the north, SR 24 to the east, and Martin Luther King Jr. Way and the elevated BART tracks to the south and west. Residential neighborhoods are located to the north, south, and west and are separated from the campus by surrounding roadways. Hospital uses have co-existed with residential uses in this area for the past 100 years, although the more intensive uses within the campus are concentrated south of 52<sup>nd</sup> Street, within the campus interior and away from residential areas.</p> <p>The proposed project would redevelop the campus and add new medical facilities; however, none of these facilities would be located directly adjacent to existing residential neighborhoods.</p> <p>The campus is located adjacent to major transportation routes, including Martin Luther King Jr. Way, a highly utilized arterial within the City and directly adjacent to SR 24. The MacArthur BART station is also located approximately 0.6 miles south of the campus. A shuttle to the BART station is provided by the hospital as a free service.</p> |

**Table IV.A-1: Relationship of Project to Relevant General Plan Policies**

| Policy  | Policy Text  | Project's Relationship to Policy   |
|---|--|--|
| Policy N2.5   | Balancing City and Local Benefits of Institutions. When reviewing land use permit applications for the establishment or expansion of institutional uses, the decision-making body should take into account the institution's overall benefit to the entire Oakland community, as well as its effects upon the immediately surrounding area.  | CHRCO is a long-standing institution in the City of Oakland which provides advanced pediatric care, research and medical education. The proposed project provides for the short- and long-term redevelopment activities at the campus that would be necessary to support current and future operations of the medical facility generally within the existing campus boundaries. Effects of the proposed project on the surrounding community are evaluated in this EIR and determined to be less than significant.                             |
| <b>Transportation and Transit-Oriented Development Policies</b> |  |  |
| Policy T3.5   | Including Bikeways and Pedestrian Walks. The City should include bikeways and pedestrian walks in the planning of new, reconstructed, or realized streets, wherever possible.  | The proposed project includes improvements to 52 <sup>nd</sup> Street which would result in the installation of Class II bike lanes on a portion of this road. No other public roadways within or surrounding the site would be altered.   |
| Policy T4.1   | Incorporating Design Features for Alternative Travel. The City will require new development, rebuilding, or retrofit to incorporate design features in their projects that encourage use of alternative modes of transportation such as transit, bicycling, and walking.   | The MacArthur BART station is also located approximately 0.6 miles south of the campus. A shuttle to the BART station is provided by the hospital as a free service. With implementation of the project, additional bicycle parking spaces would be provided on the CHRCO campus and Class II bike lanes would be provided at 52 <sup>nd</sup> Street. Pedestrian improvements are also proposed throughout the campus. The proximity of the project site to a variety of transportation modes would allow for easy access to transit options. |
| <b>Open Space, Conservation and Recreation Element (OSCAR)</b>  |  |  |
| Policy OS-3.1   | Retain open space at Oakland's universities, colleges, and other institutions where such open space provides recreational, aesthetic, conservation, or historic benefits to the community.   | The proposed project would not result in a loss of open space. The project would incorporate calming garden and quiet spaces, escape and play spaces, and landscaping which includes native ornamental shrubs and groundcover, streetscape planting including new street trees, and bio-filtration planting areas. In addition, the southern magnolia tree, which is currently located within the existing courtyard, is a character-defining feature of the historic A/B Wing; the tree would be removed as part of the proposed project.     |
| Policy OS-3.6   | Open Space Buffers Along Freeways. Maintain existing open space buffers along Oakland's freeways to absorb noise and emissions and enhance the scenic quality of roadways. Manage steeply sloping or wooded parcels adjacent to highways owned by the State of California (Caltrans) to conserve natural resources and protect open space. Where compatible with adjacent land uses, support the use of land along, under, or over freeways in urban setting for greenbelts, recreation, public art, or other activities which enhance the usefulness and appearance of such land. | The proposed project includes development of the campus within the existing Caltrans right-of-way adjacent to SR 24. Landscaping would be planted along this boundary, where practical and feasible.   |
| Policy CO-4.1   | Emphasize water conservation and recycling strategies in efforts to meet future demand.  | The proposed project would include low-flow fixtures and process water systems that would reduce building water use.   |



**Table IV.A-1: Relationship of Project to Relevant General Plan Policies**

| Policy         | Policy Text  | Project's Relationship to Policy  |
|----------------|--|---|
| Policy CO-4.2  | Require use of drought-tolerant plants to the greatest extent possible and encourage the use of irrigation systems, which minimize water consumption.  | The project would include bay-friendly and native landscaping for much of the site that would reduce water use for irrigation.  |
| Policy CO-7.1  | Protect native plant communities, especially oak woodlands, redwood forests, native perennial grasslands, and riparian woodlands, from potential adverse impacts of development. Manage development in a way which prevents or mitigates adverse impacts to these communities.   | The project site is an existing medical facility and associated uses. The project proposes the removal of 109 protected trees on the project site, including 11 coast redwoods and a southern magnolia tree, 78-inches in diameter at breast height. The project sponsor would be required to comply with SCA BIO-2 (Tree Removal Permit) and SCA BIO-3 (Tree Replacement Planting).  |
| Policy CO-7.4  | Discourage the removal of large trees on already developed sites unless removal is required for biological, public safety, or public works' reasons.   | The City's Tree Preservation Ordinance requires a permit for the removal of protected trees, with the most restrictive requirements set for coast live oaks and redwoods. The proposed project proposes removal of approximately 109 mature trees from the site, including a large southern magnolia tree. The project sponsor would be required to comply with SCA BIO-2 (Tree Removal Permit) and SCA BIO-3 (Tree Replacement Planting).  |
| Policy CO-12.4 | Require that development projects be designed in a manner that reduces potential adverse air quality impacts. This may include: a) the use of vegetation and landscaping to absorb carbon monoxide and to buffer sensitive receptors; b) the use of low –polluting energy sources and energy conservation measures; c) designs which encourage transit use and facilitate bicycle and pedestrian travel. | The proposed project would include the use of several design features that would reduce the potential for adverse air quality impacts including new landscaping, additional bicycle parking, energy efficiency in compliance with LEED for Healthcare, and the use of green building materials.<br><br>The applicant would also be required to submit a Transportation Demand Management (TDM) Plan as described in SCA TRA-1. This plan is required to address ways in which the project would encourage use of transit and facilitate bicycle and pedestrian travel, and reduce the overall demand for parking. |
| Policy CO-12.6 | Require construction, demolition and grading practices which minimize dust emissions.  | The proposed project would comply with SCA AIR-1, which requires construction, demolition, and grading practices that minimize dust emissions.  |
| Policy CO-13.3 | Encourage the use of energy-efficient construction and building materials. Encourage site plans for new development that maximize energy efficiency.   | The proposed project would maximize energy efficiency by incorporating a variety of measures including cool roofs, insulated envelope design, efficient mechanical and electrical systems, and a new efficient, central utility plant, powered by natural gas and fuel oil.   |

**Table IV.A-1: Relationship of Project to Relevant General Plan Policies**

| Policy                               | Policy Text   | Project's Relationship to Policy   |
|--------------------------------------|---|--|
| <b>Historic Preservation Element</b> |   |  |
| Policy 3.1                           | Avoid or Minimize Adverse Historic Preservation Impacts Related to Discretionary City Actions. The City will make all reasonable efforts to avoid or minimize adverse effects on the Character-Defining Elements of existing or Potential Designated Historic Properties which could result from private or public projects requiring discretionary actions.  | The project site includes eight historical resources (for the purposes of CEQA), consisting of the A/B Wing and seven residential properties that are contributors to the 55 <sup>th</sup> and Dover Residential Historic District (refer to Figure IV.C-1 in Section IV.C, Cultural and Historic Resources). Project impacts to these potential historical resources include demolition of the rear façades of three contributors to the Historic District to allow construction of the new Family Residence Building during Phase 2. However, implementation of the City's Standard Conditions of Approval would ensure that impacts to historic resources would be less than significant.   |
| Policy 3.5                           | Historic Preservation and Discretionary Permit Approvals. For any project involving the complete demolition of Heritage Properties or Potential Designated Historic Properties requiring discretionary City permits, the City will make a finding that: 1) the design quality of the proposed project is at least equal to that of the original structure and is compatible with the character of the neighborhood; or 2) the public benefits of the proposed project outweigh the benefit of retaining the original structure; or 3) the existing design is undistinguished and does not warrant retention and the proposed design is compatible with the character of the neighborhood. | The proposed project would result in the demolition of the rear façades of three structures located within the 55 <sup>th</sup> and Dover Residential Historic District. The existing façades of these structures would be maintained and incorporated in to the new Family Residence Building. The new Family Residence Building would not impair the integrity of the historic district. With implementation of the City's Standard Conditions of Approval the project's impacts to historic resources would be less than significant.   |
| <b>Noise Element</b>                 |   |  |
| Policy 1                             | Ensure the compatibility of existing and, especially, of proposed development projects not only with neighboring land uses but also with their surrounding noise environment.   | <p>The project site is located in an area that includes a mix of uses and varied sources of noise. Residential areas are located in the vicinity, and the site is bordered by high-volume roadways and other transportation uses, such as Martin Luther King Jr. and the elevated BART tracks. In addition, an existing helistop is located on the site and helicopter noise is generated by this use.</p> <p>As discussed in Section IV.G, Noise, the proposed project would not conflict with the land use compatibility guidelines identified in the General Plan or generate noise levels in excess of established standards. Specifically, with implementation of SCA NOI-5, stationary noise levels generated by the project would not expose persons to noise levels in excess of applicable standards of regulatory agencies and implementation of SCA NOI-4 for construction of the Family Residence Building would ensure compliance with the City's interior noise requirements of the General Plan Noise Element. Implementation SCA NOI-4 would also ensure the project would not expose the project to community noise in conflict with the City's land use compatibility guidelines, nor would it expose persons to traffic noise levels that are in excess of established standards.</p> |

**Table IV.A-1: Relationship of Project to Relevant General Plan Policies**

| Policy                | Policy Text  | Project's Relationship to Policy  |
|-----------------------|--|---|
| Policy 3              | Reduce the community's exposure to noise by minimizing the noise levels that are received by Oakland residents and others in the City.             | With implementation of the City's Standard Conditions of Approval, the proposed project would reduce the noise levels generated by the proposed project, as perceived by nearby land uses, to the extent feasible. As discussed in Section IV.G, Noise, the project would not result in a perceptible permanent increase in ambient noise levels at sensitive land uses in the project vicinity and would not result in exposure of sensitive persons to noise levels in excess of established standards. |
| <b>Safety Element</b> |  |   |
| Policy PS-1           | Maintain and enhance the city's capacity to prepare for, mitigate, respond to and recover from disasters and emergencies.                          | The proposed project would expand the hospital's capacity to deliver emergency medical service by increasing the amount of beds by 40.  |
| Policy GE-3           | Continue, enhance or develop regulations and programs designed to minimize seismically related structural hazards from new and existing buildings. | The proposed project would upgrade existing hospital structures in accordance with the Senate Bill 1953 Alfred E. Alquist Hospital Seismic Safety Act and as required by the OSHPD.   |

Source: City of Oakland General Plan, LSA Associates, Inc., 2014

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## B. AESTHETICS AND SHADOW

This section evaluates the effects of the proposed project on visual resources in the vicinity of the project site, as well as light, and glare, and shade and shadow impacts. This section is based on: (1) field surveys of the project site; (2) a review of the data provided by the project sponsor, including perspective drawings; and (3) view simulations that show “before and “after” representations of the proposed project prepared by Environmental Vision. View simulations have been prepared for six representative vantage points in the vicinity of the CHRCO campus and these depict redevelopment of the campus at full build out (completion of Phase 2). Design level details have not been developed for all components of the project (i.e., Phase 2); however, the simulations are intended to convey a conceptual impression of the locations, scale and massing of the buildings that could be constructed on the project site, and to evaluate potential effects of the proposed project on visual resources.

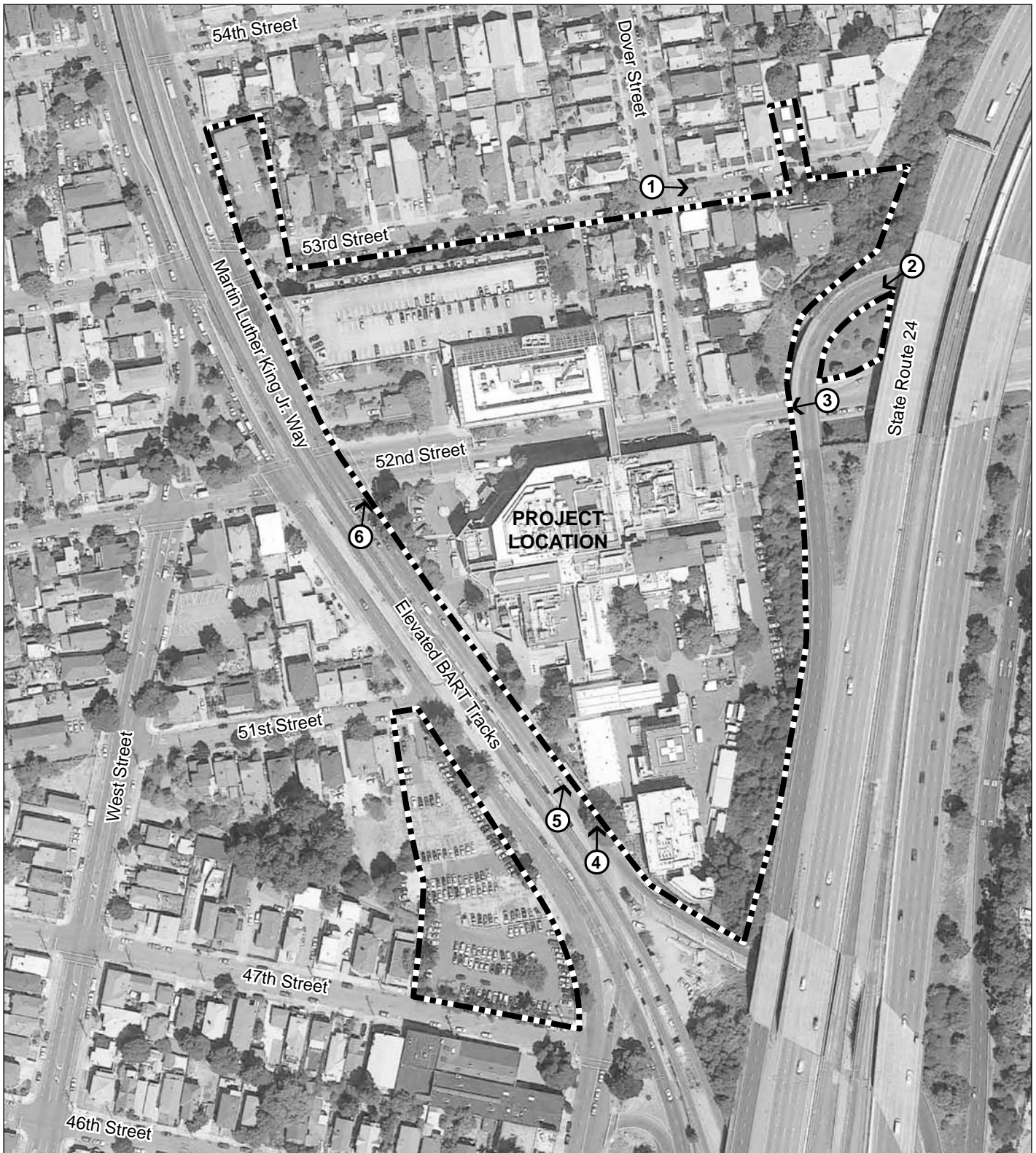
### 1. Setting

The following section describes the visual character of the project site and its surroundings, as well as views in the vicinity of the site. Existing light and glare and shade and shadow conditions are also described. **Figure IV.B-1** shows the locations of six existing viewpoints depicted in **Figures IV.B-2, IV.B-3, IV.B-4, IV.B-5, IV.B-6, and IV.B-7**. For a detailed description of the physical characteristics of the project site, refer to Section IV.A, Land Use and Planning. The visual conditions in and around the project site and views of the project site from surrounding areas, in addition to existing light and glare and shade and shadow conditions in the project area are discussed below.

**a. Local Context.** The physical environment surrounding the CHRCO campus is characterized by transportation corridors and residential neighborhoods. North of the project site is 53<sup>rd</sup> Street and a residential neighborhood beyond. SR 24 is to the east of the project site, and Martin Luther King Jr. Way, an arterial roadway, and elevated BART tracks are to the west. Existing buildings in the area generally range from 1- to 2-stories in height and architectural design varies from single-family residences constructed in the early 20<sup>th</sup> century to more recent construction.

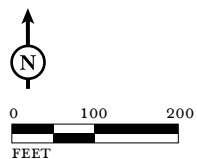
**b. Existing Visual Character of the Project Site.** The visual character of the CHRCO campus is distinct from the character of the surrounding area due to its current use as an existing medical facility with a hospital and supporting uses generally contained within a campus-like setting. The approximately 11-acre CHRCO campus is generally level and consists of 36 buildings, some of which were designed for hospital and institutional uses and some of which were originally constructed for residential use. This juxtaposition of institutional buildings and former residences, all of which are occupied by the hospital, influences the visual character of the campus and its relationship to the visual character of nearby residential neighborhoods. In addition, the campus is bisected by 52<sup>nd</sup> Street and Dover Street, which create a visual separation between various medical and support facilities within the campus boundaries, and directs the concentration of the most intense uses towards the southern campus interior.

As shown in Table III-1, in Chapter III, Project Description, building heights on the site range from one to five stories. The tallest structures include the existing 5-story Parking Garage located at the intersection of Martin Luther King Jr. Way and 53<sup>rd</sup> Street, the 5-story Outpatient Center (OPC1) located south of the Parking Garage on 52<sup>nd</sup> Street, and the 5-story 1982 Patient Tower located south of 52<sup>nd</sup> Street.



LSA

FIGURE IV.B-1



- ① → Simulation Viewpoint Location and Direction
- Project Site

CHRCO Campus Master Plan Project EIR  
Visual Simulation Viewpoint Locations

SOURCE: ENVIRONMENTAL VISION, FEBRUARY 2014.

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Existing view from Dover Street at 53rd Street looking southeast



Visual simulation of proposed project

LSA

FIGURE IV.B-2

*CHRCO Campus Master Plan Project EIR*  
 Viewpoint 1 -  
 Dover Street at 53rd Street  
 Looking Southeast



Existing wide angle view from State Route 24 looking southwest



Visual simulation of proposed project

LSA

FIGURE IV.B-3

*CHRCO Campus Master Plan Project EIR*  
Viewpoint 2  
Westbound SR-24, Looking Southwest





Existing view from 52nd Street east of Dover Street looking west (VP 3)



Visual simulation of proposed project

LSA

FIGURE IV.B-4

*CHRCO Campus Master Plan Project EIR*  
 Viewpoint 3 -  
 52nd Street - East of Dover Street  
 Looking West

SOURCE: ENVIRONMENTAL VISION, APRIL 23, 2014.

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Existing view from Martin Luther King Jr. Way north of 47th Street looking north



Visual simulation of proposed project

LSA

FIGURE IV.B-5

*CHRCO Campus Master Plan Project EIR*  
 Viewpoint 4 -  
 Martin Luther King Jr. Way - North of 47th Street  
 Looking North

SOURCE: ENVIRONMENTAL VISION, FEBRUARY 12, 2014.

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Existing view from BART - looking northeast from moving train



Visual simulation of proposed project

LSA

FIGURE IV.B-6

*CHRCO Campus Master Plan Project EIR*  
 Viewpoint 5 -  
 BART - Looking Northeast



Existing view from Martin Luther King Jr. Way south of 52nd Street looking north



Visual simulation of proposed project

LSA

FIGURE IV.B-7

*CHRCO Campus Master Plan Project EIR*  
Viewpoint 6 -  
Martin Luther King Jr. Way - South of 52nd Street  
Looking North

SOURCE: ENVIRONMENTAL VISION, FEBRUARY 12, 2014.

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These buildings were constructed in the early 1980s and 1990s. Other institutional buildings on the campus, including the Ford Diagnostic and Treatment Center (D&T Building) and Cardiac Catheterization Lab, Central Utility Plant, Bruce Lyon Memorial Research Laboratory Building and Addition, Cafeteria, and Western Addition range from two to three stories in height. These buildings were constructed between the late 1950s and 2003. A 36-foot tall helistop structure is also located near the southern tip of the campus.

The earliest hospital structures include the 4-story A/B Wing, constructed in 1926, and the 3-story B/C Wing, constructed in 1946. The A/B Wing is a steel frame and reinforced concrete L-shaped building in a Northern Italian Romanesque style. These buildings have been remodeled over the years and include newer additions. The A/B Wing is considered a “historical resource” under CEQA (see Section IV.C, Cultural and Historic Resources).

Other structures on the site consist of 16 residential buildings ranging from 1 to 2 stories in height. Two of these structures are still maintained as private residences and are not owned by CHRCO, nor are they proposed for acquisition. The existing Family House is located on Dover Street and was constructed in 1988. The remaining buildings have been renovated over the years to accommodate administrative uses associated with the hospital, but many still reflect their original early 20<sup>th</sup> century construction. A few temporary trailers are also located on the campus.

The remainder of the campus is developed with access driveways and limited surface parking areas. Formal and informal walkways are also provided on the campus between buildings and parking lots. Defined main entrances to the campus are located at the intersection of Martin Luther King Jr. Way and 52<sup>nd</sup> Street and at the southern terminus of the access driveway that borders the eastern property line, located south of 52<sup>nd</sup> Street. This secured driveway terminates at the courtyard located between the A/B and B/C Wings. Within the courtyard is a magnolia tree, planted around 1860 and before the establishment of the hospital. Open space within the campus is generally limited to the courtyard, play area, and Butterfly Garden. Other landscaping on the CHRCO campus includes street trees around the campus boundary, and planting areas north and west of the Parking Garage and at the southeast corner of Martin Luther King Jr. Way and 52<sup>nd</sup> Street. Approximately 99 trees are planted throughout the campus, and an additional 33 street trees are located around the campus boundaries.

Adjacent to the CHRCO campus is a 1.5-acre strip of Caltrans right-of-way, which CHRCO proposes to acquire from Caltrans and incorporate into the campus. This area currently consists of undeveloped, vegetated slopes. There are approximately 52 trees planted throughout this property.

**c. Visual Character of the Surrounding Area.** Following is a brief discussion of the visual character of the areas immediately surrounding the project site.

- *North.* One- to 2-story single-family residences, which are part of a compact residential neighborhood, characterize the areas to the north of the site, across 53<sup>rd</sup> Street. Scattered street trees and overhead utility lines line both sides of the roadway. The majority of the residences in this neighborhood were constructed in the early 20<sup>th</sup> century. One- to 2-story commercial buildings are also located to the northwest, along Martin Luther King Jr. Way.
- *East.* The eight-lane SR 24, which is divided by BART tracks, is immediately east of the CHRCO campus and the westbound on-ramp that begins at 52<sup>nd</sup> Street forms the eastern border of the project site. This highway forms both a physical and visual separation

between the CHRCO campus and the 1- to 4-story residential and commercial buildings further east.

- *South.* The eastbound off-ramp of SR 24, where it crosses beneath SR 24 and connects with Martin Luther King Jr. Way, forms the southern boundary at the tip of the CHRCO campus. Elevated BART tracks also continue south of the campus and beneath SR 24. A triangular landscaped area is located between these various transportation facilities. Residential neighborhoods are located further south and primarily consist of 1-to 2-story single-family homes constructed in the early 20<sup>th</sup> century.
- *West.* Martin Luther King Jr. Way forms the western boundary of the CHRCO campus. Elevated BART tracks divide the north and south bound lanes and scattered street trees line the roadway. A surface parking lot (the CHRCO Annex Employee parking lot) and residential uses are located across Martin Luther King Jr. Way and west of the project site. Residential land uses within this area consist of both single- and multi-family homes, constructed in the early 20<sup>th</sup> century. An approximately 6-foot tall wall separates the surface parking lot from Martin Luther King Jr. Way. In addition, Helen McGregor Plaza Park is also located immediately west of the campus, across Martin Luther King Jr. Way. This approximately 1/4-acre park consists of a plaza with concrete seating areas and landscape trees.

**d. Views from the Project Site.** Views from within the CHRCO campus to surrounding areas are generally limited due to existing development (both on- and off-site) and mature trees or fencing that are located in some areas. Available views are generally limited to the immediate surroundings and no long-range views are available due to the elevation and generally level topography of the site and surroundings. Existing roadways both within the site (52<sup>nd</sup> and Dover Streets) and along the boundary of the site (53<sup>rd</sup> Street to the north and Martin Luther King Jr. Way to the west) do provide some views to adjacent areas, since these roadways provide a more direct line of site with fewer obstructions.

Generally, views to the north consist of the existing 1- and 2-story residences that line 53<sup>rd</sup> Street and Dover Street. Views to the east are primarily obstructed both by the slope of and heavy vegetation within the existing Caltrans right-of-way. Views to the residential areas to the south are also obstructed by existing transportation facilities, including the elevated BART tracks and SR 24. Views to the west are generally dominated by traffic on Martin Luther King Jr. Way and the elevated BART tracks, although some residential buildings and Helen McGregor Plaza along Martin Luther King Jr. Way are visible.

**e. Views of the Project Site.** Similar to views from the project site described above, views of the project site from areas that do not immediately border the site are generally limited due to the developed nature of areas immediately surrounding the project site; however, because some existing buildings on the campus are taller (up to five stories) than surrounding 1- and 2-story uses, the upper levels of some facilities on the campus are visible from surrounding roadways and from some locations (particularly roadways that provide a direct line of site) within a few blocks of the site. The following subsection describes views of the project site from select viewpoints which are depicted in

the existing viewpoints shown in **Figure IV.B-2 through Figure IV.B-7**, with **Figure IV.B-1** showing the locations of the viewpoints. Views from these viewpoints are described below.<sup>1</sup>

- *Views from the north (Viewpoint 1).* As shown in **Figure IV.B-2**, views of the project site from Dover and 53<sup>rd</sup> Streets, looking southeast towards the project site, are of the five residential buildings located on the south side of 53<sup>rd</sup> Street, east of Dover Street. The single-story private residence located at the intersection of Dover and 53<sup>rd</sup> Streets is visible in the foreground, as are the four remaining 1- and 2-story residential buildings that are owned by CHRCO and that are currently used as office space. Mature trees and other vegetation within the existing Caltrans right-of-way is also visible and currently obstructs direct views of SR 24.
- *Views from SR 24 (Viewpoint 2).* As shown in **Figure IV.B-3**, views of the site from westbound SR 24, looking southwest towards the site, are direct and open. Vehicles generally travel at a speed of 65 mph (the posted speed limit) on this freeway and, although the site is highly visible, motorists' views of the site would be brief during regular traffic flows. The existing SR 24 off-ramp and existing vegetation within Caltrans rights-of-way are visible in the foreground. Views of most of the existing campus facilities are also available from this location. The 3- and 4-story A/B and B/C Wings, 3-story D&T Building and Cardiac Catheterization Lab, and 5-story 1982 Tower and OPC1 structures dominate the view, while the lower scale 1- and 2-story buildings on the site are generally not visible. Other tall structures on the site, such as the 5-story Parking Garage, are also available from similar vantage points along the highway.
- *Views from the east (Viewpoint 3).* As shown in **Figure IV.B-4**, views of the site looking west down 52<sup>nd</sup> Street, from beneath the SR 24 westbound off-ramp, are framed by existing development within the campus. On the south side of the roadway, the existing 3-story D&T Building and Cardiac Catheterization Lab and 5-story 1982 Tower are visible, as is the connector between the lab and OPC1 across the street. On the north side of the street, two existing 1-story CHRCO-owned residences and the partial front yard of one private residence are visible in addition to the 5-story OPC1. Existing vegetation and above-ground utility lines are visible on both sides of the street. The elevated BART tracks along Martin Luther King Jr. Way are also visible in the distance.
- *View from the south (Viewpoint 4).* As shown in **Figure IV.B-5**, views of the site from northbound Martin Luther King Jr. Way, just north of 47<sup>th</sup> Street, are dominated by mature trees and other landscaping located on or adjacent to the southern campus boundary. Portions of the 2-story Bruce Lyon Memorial Research Laboratory Building, a temporary trailer, and a portion of the 3-story B/C Wing within the campus and perimeter fencing along the campus boundary are visible from this vantage point. As motorists continue northbound, additional facilities located on the campus would also be visible, including the taller structures that are located along 52<sup>nd</sup> Street. In addition, the elevated BART tracks dominate the viewshed along this roadway.

<sup>1</sup> It should be noted that photographs of the site were taken with a wide-angle lens with varying degrees of horizontal view angles, in order to capture a full view of the project site at close range, with little distortion.

- *View from Elevated BART tracks (Viewpoint 5).* As shown in **Figure IV.B-6**, views from the elevated BART that divide Martin Luther King Jr. Way, looking northeast towards the campus are direct and open given that the tracks are located immediately adjacent to the site. As passengers travel north or southbound on BART, most existing facilities within the campus are visible for some period due to the elevated vantage point, although views from any given point are generally limited to one second or less due to the speed at which the train travels. In this viewpoint, which covers approximately 125 feet of the total approximately 1,750-foot long CHRCO campus frontage that is visible from the BART tracks, existing temporary trailers and mature street trees are visible in the foreground. The helistop structure, the 2-story Central Utility Plant and some portions of the 3-story B/C Wing and 5-story 1982 Tower are also visible. The Oakland hills are also partially visible in the distance. Views of the campus facilities and distant hills from the elevated BART tracks at this location are intermittent and typical of the urbanized views that are available as passengers travel above-ground throughout the City of Oakland. Similar to the views of the campus from SR 24, views of the campus from BART are brief during regular BART operation.
- *Views from the west (Viewpoint 6).* As shown in **Figure IV.B-7**, views looking north from Martin Luther King Jr. Way, just south of 52<sup>nd</sup> Street, are of the existing 5-story Parking Garage and an existing 2-story CHRCO-owned residence and associated landscaping. OPC1 is also somewhat visible, although an open view of this facility is slightly obscured by a mature tree located at the southeast intersection of 52<sup>nd</sup> Street and Martin Luther King Jr. Way.

**f. Light and Glare.** Sources of light and glare on the campus are generally limited to the interior and exterior lights of campus buildings, parking garage lighting, and street lighting in the immediate vicinity. Sensitive receptors (with respect to light and glare) in the vicinity of campus include patient facilities on the campus and the primarily residential uses located north of the campus. Existing lighting on the campus is generally consistent with nighttime lighting conditions expected of urbanized areas, particularly those located along major thoroughfares, such as Martin Luther King Jr. Way and SR 24.

**g. Shade and Shadow.** Existing buildings on and in the vicinity of the site, particularly the taller 5-story Parking Garage, OPC1, and 1982 Tower, currently cast shadows onto adjacent structures and properties during certain seasons and times of day. This is generally the nature of the development pattern within existing urbanized areas. The campus currently does not include any solar collectors and is not located in the vicinity of a historical resource sensitive to shade, or quasi-public park/open space. Existing buildings are also separated from most nearby residential areas by existing roadways, including 53<sup>rd</sup> Street and Martin Luther King Jr. Way and the elevated BART tracks. Existing shadows cast by campus facilities onto adjacent properties and structures are therefore currently minimal and typical of an urban environment.

**h. Regulatory Setting.** The following describes the regulatory setting as it relates to aesthetics and shadow.



(1) **Oakland General Plan.** General Plan policies that pertain to visual quality that are relevant to the proposed project and its vicinity are contained within the General Plan Land Use and Transportation Element and the Open Spaces, Conservation and Recreation Elements, as follows:

- Policy OS-10.1: Particular attention should be paid to (a) views of the Oakland Hills from the flatlands; (b) views of downtown and Lake Merritt; (c) views of the shoreline; and (d) panoramic views from Skyline Boulevard.
- Policy OS-10.2: New development should minimize adverse visual impacts and take advantage of opportunities for new vistas and scenic enhancement.

(2) **City of Oakland's Standard Conditions of Approval.** The City of Oakland's Standard Condition of Approval that would apply to the proposed project is listed below. The Standard Conditions of Approval will be adopted as requirements of the proposed project if the project is approved by the City. SCA BIO-3 (Tree Replacement Plantings) also addresses aesthetic impacts of the proposed project, and is listed in Chapter VI, Other CEQA Considerations.

**SCA AES-1: Lighting Plan.** *Prior to the issuance of an electrical or building permit.* The proposed lighting fixtures shall be adequately shielded to a point below the light bulb and reflector and that prevent unnecessary glare onto adjacent properties. Plans shall be submitted to the Planning and Zoning Division and the Electrical Services Division of the Public Works Agency for review and approval. All lighting shall be architecturally integrated into the site.

## 2. Impacts and Mitigation Measures

This section discusses potential aesthetic, light and glare, and shade and shadow impacts that could result from implementation of the proposed project. The City's criteria for the evaluation of wind impacts, which do not apply to the proposed project, are also addressed. The section begins with the significance thresholds, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate.

To guide the assessment of whether the proposed project would create a significant adverse impact when measured against the following criteria, the analysis includes computer-generated photo simulations illustrating "before" and "after" views and vistas across the project site (see **Figures IV.B-2 through Figure IV.B-7**).

**a. Thresholds of Significance.** Implementation of the proposed project would have a significant effect on visual resources if it would:

- (1) Have a substantial adverse effect on a public scenic vista;
- (2) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, located within a state or locally designated scenic highway;
- (3) Substantially degrade the existing visual character or quality of the site and its surroundings;
- (4) Create a new source of substantial light or glare which would substantially and adversely affect day or nighttime views in the area;

- (5) Cast shadow that substantially impairs the function of a building using passive solar heat collection, solar collectors for hot water heating, or photovoltaic solar collectors;
- (6) Introduce landscape that would now or in the future cast substantial shadows on existing solar collectors (in conflict with California Public Resource Code sections 25980-25986);
- (7) Cast shadow that substantially impairs the beneficial use of any public or quasi-public park, lawn, garden, or open space;
- (8) Cast shadow on an historic resource, as defined by CEQA Guidelines section 15064.5(a), such that the shadow would materially impair the resource's historic significance by materially altering those physical characteristics of the resource that convey its historical significance and that justify its inclusion on or eligibility for listing in the National Register of Historic Places, California Register of Historical Resources, Local Register of historical resources, or a historical resource survey form (DPR Form 523) with a rating of 1-5;
- (9) Require an exception (variance) to the policies and regulations in the General Plan, Planning Code, or Uniform Building Code, and the exception causes a fundamental conflict with policies and regulations in the General Plan, Planning Code, and Uniform Building Code addressing the provision of adequate light related to appropriate uses; or
- (10) Create winds that exceed 36 mph for more than one hour during daylight hours during the year.

Although the visual conditions in and around the project site would change with implementation of the proposed project, views of scenic vistas or of the project site itself as seen from private property are not considered to be significant impacts under CEQA. Therefore, the evaluation of impacts to scenic vistas and visual quality and character is based on views from public areas.

**b. Project Impacts.** The following discussion describes the potential impacts to aesthetics and related issues that would result from implementation of the proposed project. Although impacts would be similar with development of Phase 1 and Phase 2, the potential impacts associated with each phase are addressed in this section, unless otherwise noted or where the significance criterion is generally not applicable to the project site. In addition, the visual simulations included in **Figures IV.B-2 through IV.B-7** referenced herein depict development of the campus at full build out (completion of Phase 2); therefore, the discussion of visual character is generally focused on full build out of the site.

**(1) Scenic Vistas.** The Open Spaces, Conservation, and Recreation (OSCAR) element of the City of Oakland's General Plan identifies views of Lake Merritt, the Oakland Hills, and panoramic views from Skyline Boulevard and Grizzly Peak Road as scenic resources that need to be protected. The OSCAR has determined these views should be protected through a combination of development review, zoning standards (including height limits in appropriate areas), design review, and proper management of park and open space areas. The project site is not located near any of these scenic resources and is not prominently visible from Skyline Boulevard or Grizzly Peak Road. Intermittent long-range views of the Oakland hills to the east are visible from some surrounding roadways and the elevated BART tracks in the vicinity of the site; however, these views are primarily obstructed by existing development and vegetation or otherwise limited to short periods of visibility for motorists and BART passengers. Potential impacts to existing scenic vistas are discussed below for both Phase 1 and Phase 2.

**Phase 1 Impacts.** Campus redevelopment activities associated with Phase 1 primarily include construction of the new OPC2 building. This building would be 6 stories and approximately 80 feet in height and would be the tallest building on the site. As shown in Figure III-11 in Chapter III, Project Description, it would be about 35 feet taller than the adjacent Parking Garage and about 20 feet taller than the existing OPC1 building. However, views to the east from Martin Luther King Jr. Way are already completely obstructed by existing development on the campus, including the existing 5-story OPC1 building. Additionally, although distant views of the hills are available from the elevated BART tracks within the vicinity of the new building (**Figure IV.B-7** depicts a typical view near the southern campus boundary), these views are generally intermittent and would not be substantially blocked or eliminated with construction of the new OPC2 building; views of the hills would continue to be available from other points along the tracks. Therefore, implementation of Phase 1 would result in a less-than-significant impact on scenic vistas identified in the OSCAR element.

**Phase 2 Impacts.** Campus redevelopment activities associated with Phase 2 primarily include construction of several new buildings, including: the new Family Residence Building and Clinical Support Building north of 52<sup>nd</sup> Street, and the Link Building with rooftop helistop, Central Utility Plant, Patient Pavilion, and Parking Structure south of 52<sup>nd</sup> Street and within the campus interior. As previously discussed, views to the east from Martin Luther King Jr. Way are generally obstructed by existing campus development. The introduction of new 2- to 5-story structures as part of Phase 2 development would not result in the blockage of views from this roadway as none currently exist from the street level. As previously discussed, distant views of the hills are available from the elevated BART tracks adjacent to the campus (**Figure IV.B-7** depicts a typical view near the southern campus boundary); however, these views are intermittent and somewhat obstructed by existing development and vegetation in the area. Although the simulation included in **Figure IV.B-7** shows that construction of the new Patient Pavilion would completely block existing views towards the hills from this particular viewpoint, views of the hills would continue to be available from other points along the tracks. Therefore, implementation of Phase 2 would result in a less-than-significant impact on scenic vistas identified in the OSCAR element.

(2) **Scenic Resources.** The State scenic highways in Alameda County are as follows: Interstate 580 (I 580) (from the San Joaquin County line to State Route 205, and from San Leandro City limits to SR 24 in Oakland); and Interstate 680 (from Mission Boulevard in Fremont to Bernal Avenue near Pleasanton, and from Bernal Avenue near Pleasanton to the Contra Costa County line).<sup>2</sup>

The project site is located approximately 0.75 miles north of the State scenic highways segment of I 580 that terminates at SR 24. Although the I 580/SR 24 interchange is elevated, distant views to the north towards the CHRCO campus are generally obstructed by existing vegetation and buildings and elevated roadway infrastructure.

The City's Scenic Highways Element<sup>3</sup> identifies distinctively attractive roadways that traverse the City and the visual corridors that surround them. The MacArthur Freeway (I 580), Skyline Boulevard, Grizzly Peak Boulevard, and Tunnel Road are identified as locally-designated scenic routes through-

<sup>2</sup> California Department of Transportation, 2007. California Scenic Highway Program. Website: [www.dot.ca.gov/hq/LandArch/scenic/schwy1.html](http://www.dot.ca.gov/hq/LandArch/scenic/schwy1.html). May 18.

<sup>3</sup> Oakland, City of, 1974. Scenic Highways Element. September.

out the City. Distant views to the north from the I 580 corridor, towards the CHRCO campus, are generally obstructed by existing vegetation and buildings and elevated roadway infrastructure. In addition, the site is not directly visible from Skyline Boulevard, Grizzly Peak Boulevard, or Tunnel Road, which traverse the hill side areas of the City and are a minimum of 2.5 miles from the site. SR 24, which is just east of and adjacent to the site, is also listed for possible future scenic designation and the project site is directly within view of a segment of this roadway,

Impacts to scenic resources within view of scenic roadways are discussed below for each phase of development.

**Phase 1 Impacts.** New construction associated with Phase 1, which includes the 6-story OPC2 (which would be the tallest structure on the site), would not be visible to motorists traveling east or westbound on the State-designated scenic highway segment of I 580 or from the locally-designated I 580, Skyline Boulevard, Grizzly Peak Boulevard, or Tunnel Road corridors, due to the distance of these roadways from the site. The SR 24 corridor is located adjacent to the project site and, as shown in **Figure IV.B-3**, the new OPC2 building would be visible from this vantage point. However, with development of Phase 1, the view from SR 24 would be similar to the existing built environment within view of this roadway. Scenic resources within view of this roadway, which is not an officially designated as a scenic route, would not be substantially altered. Therefore, implementation of Phase 1 would not substantially damage views from a State scenic highway and would have less-than-significant impacts on scenic highways and associated resources.

**Phase 2 Impacts.** New 2- to 5-story buildings associated with Phase 2 would not be visible to motorists traveling east or westbound on the scenic highway segments of I 580 or from the locally-designated I 580, Skyline Boulevard, Grizzly Peak Boulevard, or Tunnel Road corridors due to the distance of these roadways from the site. As shown in **Figure IV.B-3**, new buildings on the site would be visible from SR 24. However, with development of Phase 2, the view from SR 24 would be similar to the existing built environment within view of this roadway. Scenic resources within view of this roadway, which is not an officially designated as a scenic route, would not be substantially altered. Therefore, implementation of Phase 2 would not substantially damage views from a State scenic highway and would have less-than-significant impacts on scenic highways and associated resources.

**(3) Visual Character.** Development of the proposed project would alter the visual character of the campus through the demolition of existing structures, construction of new buildings, intensification of existing land uses, alteration of the interior circulation pattern, and associated improvements. The proposed project would be subject to design review. According to the *City of Oakland Justification for Granting Non-Residential Design Review*, "Design Review is intended to ensure high quality attractive designs that will complement and benefit the surrounding neighborhood and the city as a whole." Projects that require design review, including the proposed project, and are found to be consistent with design review criteria, can generally be found to result in a less than significant impact to existing visual character or quality. The design review criteria applicable to the proposed project are listed below.

- *Criterion 1:* That the proposal will help achieve or maintain a group of facilities which are well related to one another and which, when taken together, will result in a well-composed design, with consideration given to site, landscape, bulk, height, arrangement, texture, materials, colors, and appurtenances; the relation of these factors to other facilities in the vicinity; and the relation of the proposal to the total setting as seen from key points in the surrounding area.
- *Criterion 2:* That the proposed design will be of a quality and character which harmonizes with, and serves to protect the value of, private and public investments in the area.
- *Criterion 3:* That the proposed design conforms in all significant respects with the Oakland General Plan and with any applicable design review guidelines or criteria, district plan, or development control map which have been adopted by the Planning Commission or City Council.

Potential impacts to existing visual character of the site and vicinity are discussed below for both Phase 1 and Phase 2, with consideration of the above criteria. The analysis partly relies on visual simulations that were prepared to depict the proposed project at build out (completion of Phase 2). In consultation with City staff, six public viewpoint locations were selected for visual simulations. These locations were selected based on campus visibility and the public locations that provide the most representative views of the campus. The visual simulations were prepared using computer modeling and rendering techniques and the analysis of impacts to the existing visual character of the campus vicinity and views of the project site focuses on viewpoints that provide views of the site from public locations such as roadways. **Figure IV.B-1** shows the viewpoint locations. **Figures IV.B-2 through IV.B-7** show existing views of the campus (upper photographs) and visual simulations of the proposed project (lower photographs) from each of the selected viewpoints.

**Phase 1 Impacts.** Redevelopment activities associated with Phase 1 would primarily focus on construction of the new 6-story OPC2 building. This new building would be prominent and visible from surrounding roadways, particularly at the intersection of Martin Luther King Jr. Way and 52<sup>nd</sup> Street (as shown in **Figure IV.B-7** and further discussed below). The new OPC2 building would include varied architectural design, to provide visual interest and avoid the impression of a continuous and monotonous façade. This would serve to soften the massing of the proposed building, which would also be set back and buffered from the street front by new landscaping. The architect for the applicant has noted that the proposed architecture is also intended to be welcoming and visually interesting to children, who may be visiting the campus under scary circumstances. While the OPC2 building would be the tallest structure constructed as part of the proposed project, this building would be a continuation of the existing institutional use of the campus. It would relate appropriately to the adjacent existing parking garage and OPC1 and would be visually compatible with the surrounding buildings and types of structures visible along Martin Luther King Jr. Way, which is a major arterial that crosses through the City.

Approximately 19 protected trees, including 1 street tree, are proposed for removal from the site during construction of Phase 1.<sup>4</sup> While existing on-site and surrounding street trees provide visual interest throughout the campus, their removal would not substantially degrade the visual character of the site. New landscaping would be provided throughout the campus as various construction activities are completed within each location. In addition, implementation of SCA BIO-3 would ensure that new trees are planted per City requirements.

Based on the visual simulations that depict the completed project and review of the elevations and massing depicted in Figures III-11 through III-16 (some of which focus specifically on the OPC2 building), the proposed project would be consistent with the City's Design Review criteria. Overall, the proposed project would be visually compatible with existing uses within the site and would avoid intrusion into the existing residential neighborhoods. Therefore, the proposed project would not degrade the visual quality or character of the site and its surroundings and this impact would be less than significant.

Please refer to the following discussion under Phase 2 for a more specific analysis of changes to the visual character of the site and vicinity that would occur under build out of the proposed project.

**Phase 2 Impacts.** Redevelopment activities associated with Phase 2 would result in the demolition of several buildings and construction of several new buildings, including: a new 2-story Family Residence Building and 3-story Clinical Support Building north of 52<sup>nd</sup> Street, and a 5-story Link Building with rooftop helistop, 5-story Patient Pavilion, and 4-story Parking Structure south of 52<sup>nd</sup> Street and within the campus interior. Improvements to the existing vehicular and pedestrian circulation pattern and access points would also occur. Phase 2 would also include the acquisition and improvement of a portion of the SR 24 right-of-way currently owned by Caltrans. These changes are depicted in the representative vantage points shown in the visual simulations included in **Figures IV.B-2 through IV.B-7**, below.

- *Viewpoint 1.* As shown in **Figure IV.B-2**, three of the residential façades of the existing buildings on Dover Street would be retained, although the rear of these structures would be demolished to construct the new 2-story Family Residence Building. The new 2-story Family Residence Building would therefore be substantially set back from 53<sup>rd</sup> Street and would not be prominently visible from the roadway. As shown, the new structure would be similar to the scale of existing residential buildings found both within the campus (south of 53<sup>rd</sup> Street) and north of the campus as the residential scale and massing would be retained along the street front. In addition, two of the residential buildings currently located on 52<sup>nd</sup> Street, east of Dover Street, would be relocated to 53<sup>rd</sup> Street and are visible in the simulation, just east of the new Family Residence Building and associated residential façades. These two buildings would replace the existing modular residential building; the modular building would be demolished. Relocation of these structures to the 53<sup>rd</sup> Street frontage would enhance the visual character of the area at completion of Phase 2 and would represent a continuation of the existing low-scale, residential appearance of buildings on 53<sup>rd</sup> Street, east of Dover Street. These two residential buildings better reflect the visual character and scale of residential development on the north side of the street. Therefore, as

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<sup>4</sup> The City will review the proposed landscaping plans and verify the number of trees to be removed and replaced prior to issuance of demolition and construction permits for Phase 1.

seen from Viewpoint 1, the proposed project would not degrade the visual quality or character of the site or its surroundings and this impact would be less than significant.

- *Viewpoint 2.* As shown in **Figure IV.B-3**, new facilities on the campus would be highly visible from certain vantage points along westbound SR 24, which offers direct and open views of the CHRCO campus. As shown from left to right in the simulation, the new 3-story parking garage, 5-story Patient Pavilion, helistop pad, and 3-story Clinical Support Building would be visible from this vantage point. New landscaping along the eastern boundary of the expanded campus would also be visible and would somewhat obstruct some of the existing and new buildings. Existing buildings towards the western boundary of the campus would be somewhat obscured by the new buildings. Portions of the historic A/B Wing would however continue to be visible. New buildings on the campus would generally blend with existing campus development and, although campus facilities would extend closer to SR 24, as seen from the roadway, the overall bulk, scale, and massing shown would be similar to the existing view and new and existing vegetation would continue to provide a buffer between the roadway and the campus. Therefore, as seen from Viewpoint 2, the proposed project would not degrade the visual quality or character of the site or its surroundings and this impact would be less than significant.
- *Viewpoint 3.* As shown in **Figure IV.B-4**, new and remodeled facilities within the campus would be visible to motorists and pedestrians traveling through the campus along 52<sup>nd</sup> Street. As shown from this vantage point, the remodeled D&T Building and Cardiac Catheterization Lab and new landscaping can be seen on the south side of 52<sup>nd</sup> Street and the new Clinical Support Building and new landscaping can be seen on the north side of the street. The proposed OPC2 building is not visible from this vantage point because of the distance from OPC2, because the façade of OPC2 would be set back from 52<sup>nd</sup> Street by approximately 13 feet more than the existing OPC1 building, and because the roofline is only about 15 feet taller than the existing OPC1 building. The new Link Building and helistop are partially visible to the left of the frame. In addition, improvements to the street scape include the removal of overhead utility lines, new landscaping, and restriping of the roadway. With the setbacks proposed for the new Clinical Support Building, the sidewalk on the north side of the roadway would be widened and new landscaping would be developed. As seen from 52<sup>nd</sup> Street, new and remodeled facilities on the campus and related improvements would generally blend with or complement the existing campus environment. Existing homes on the north side of 52<sup>nd</sup> Street and west of Dover Street, would continue to be visible from this viewpoint. Although the new Clinical Support Building would be taller than these existing homes, the building would be set back from the street front and would not be directly adjacent to these lower scale buildings, which are already surrounded by taller, more massive structures. The visual character of these buildings would not be substantially altered with development of the proposed project. Therefore, as seen from Viewpoint 3, the proposed project would not degrade the visual quality or character of the site or its surroundings and this impact would be less than significant.
- *Viewpoint 4.* As shown in **Figure IV.B-5**, new facilities along the western boundary of the campus would be visible to motorists and pedestrians traveling in either direction along Martin Luther King Jr. Way. As shown the new 5-story Patient Pavilion and Central Utility Plant would be visible from this vantage point and the existing mature street tree shown would remain. Removal of some existing mature vegetation within the campus would result

from proposed changes to internal pathways and driveways and surrounding public sidewalks; however, much of the existing landscaping along the campus boundary would be either retained or replaced and would continue to obstruct views of the campus from the existing roadway. In addition, the new facilities shown in this vantage point would generally represent an improvement over the existing view of temporary trailers and mechanical equipment. The new buildings would blend with the existing institutional buildings already on the site. Therefore, as seen from Viewpoint 4, the proposed project would not degrade the visual quality or character of the site or its surroundings and this impact would be less than significant.

- *Viewpoint 5.* As shown in **Figure IV.B-6**, the new Central Utility Plant and Patient Pavilion would dominate the view from this vantage point, which is within 60 feet of the project site. The new Patient Pavilion, which would be taller than the Central Utility Plant, would obstruct existing views of the campus and distant Oakland hills from the elevated BART tracks as seen from this vantage point due to the proximity of the tracks to the campus and height of the structure. The façade of the new 5-story building would include varied architectural elements to provide visual interest and avoid the impression of a continuous and monotonous façade. Views of the redeveloped campus from BART, as passengers travel adjacent to and within the vicinity of the site, would generally be comparable to the typical intermittent and urbanized views that are available as passengers travel above-ground throughout the City of Oakland. There are buildings of varying heights and distances from the BART tracks. Varied short- and long-range views are provided and views from any given point are generally limited to one second or less due to the speed at which the train travels. In addition, views of the campus from this vantage point represent only about 125 feet of the total 1,750 linear feet of the campus frontage that borders the BART tracks. Therefore, although implementation of Phase 2 would alter the view from BART as seen from Viewpoint 5, including eliminating the limited and brief view of the distant Oakland hills, this change would not substantially degrade the visual quality or character of the site or its surroundings or result in additional obstruction of existing hill views from the BART tracks, and this impact would be less than significant.
- *Viewpoint 6.* As shown in **Figure IV.B-7**, the new OPC2 building would be prominent at the northeast corner of the Martin Luther King Jr. Way and 52<sup>nd</sup> Street. The view of the existing 5-story Parking Garage would be partially obstructed by the new building. The new OPC2 building would include varied architectural design to provide visual interest and avoid the impression of a continuous and monotonous façade. This would serve to soften the massing of the proposed building, which would also be set back and buffered from the street front by new landscaping. Overall, although the OPC2 building would be the tallest structure constructed as part of the proposed project, the new building would represent a continuation of the existing institutional use of the campus and would be visually compatible with the surrounding buildings and types of structures visible along Martin Luther King Jr. Way, which is a major arterial that crosses through the City. Therefore, as seen from Viewpoint 6, the proposed project would not degrade the visual quality or character of the site or its surroundings and this impact would be less than significant.

In addition to the above described changes to the visual quality and character of the site as seen from surrounding public vantage points, various improvements would occur within the interior of the campus, such as modifications to the existing hospital entrance and courtyard areas near the southern campus boundary and to existing landscaping. Approximately 90 protected trees, including 32 street



trees would be removed from the site during construction of Phase 2, including the large southern magnolia tree that is located within the existing courtyard.<sup>5</sup> While existing on-site and surrounding street trees provide visual interest throughout the campus, their removal would not substantially degrade the visual character of the site. New landscaping would be provided throughout the campus as various construction activities are completed within each location. In addition, implementation of SCA BIO-3 would ensure that new trees are planted per City requirements.

Based on the visual simulations that depict the completed project and review of the elevations and massing depicted in Figures III-11 through III-16, the proposed project would be consistent with the City's Design Review criteria. In general, the completed project would provide similar or greater setbacks than those that currently exist throughout the campus and would generally maintain the existing setbacks along 53<sup>rd</sup> Street, which borders a residential area. The massing of new buildings would be broken up to provide variation and the taller structures would generally be concentrated within the campus interior or along major roadways. New construction and remodeled buildings would provide visual interest that creates a cohesive campus design. Overall, the proposed project would be visually compatible with existing uses within the site and would avoid intrusion into the existing residential neighborhoods. Therefore, the proposed project would not degrade the visual quality or character of the site and its surroundings and this impact would be less than significant.

**(4) Light and Glare.** Sources of light and glare on the campus are generally limited to the interior and exterior lights of campus buildings, parking garage lighting, and street lighting in the immediate vicinity. Potential increases in light and glare associated with development of Phases 1 and 2 are discussed below.

**Phase 1 Impacts.** Campus redevelopment activities associated with Phase 1 include construction of OPC2 and minor modifications to site circulation and access. During certain daylight hours, at certain times in the year, pedestrians and motorists could experience some degree of glare due to light reflecting off of the new OPC2 building, which includes glass and/or window components and is visible to surrounding roadways, including Martin Luther King Jr. Way and 52<sup>nd</sup> Street. However, glazing and window treatment for OPC2, in addition to the new landscaping proposed along these roadways would minimize glare from the new building and serve as a visual buffer between the building and roadways.

In addition, the proposed OPC2 building would create a new source of light within the campus and it is anticipated that redevelopment activities associated with Phase 1 would include sources of nighttime lighting through the incorporation of exterior lighting for pedestrian safety. The type and intensity of lighting resulting from the proposed project would constitute a continuation of the type and intensity of lighting already established in the area, and would not be expected to result in a substantial increase in light or glare over existing conditions. While the height and mass of the OPC2 building would increase light from the campus noticeable from off-site locations, it would be absorbed into the overall lighting patterns that already exist in the area.

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<sup>5</sup> The City will review the proposed landscaping plans and verify the number of trees to be removed and replaced prior to issuance of demolition and construction permits for Phase 2.

Implementation of SCA AES-1 would ensure that exterior lighting would not unnecessarily be cast onto adjacent properties, the use of reflective or mirrored glass would be minimized or muted, and light pollution would be minimized. As such, implementation of Phase 1 would not create a source of light and glare that would substantially or adversely affect day or nighttime views in the area and this impact would be less than significant.

**Phase 2 Impacts.** Campus redevelopment activities associated with Phase 2 primarily include construction of several new buildings, including: the new Family Residence Building and Clinical Support Building north of 52<sup>nd</sup> Street, and the Link Building with rooftop helistop, Patient Pavilion, and Parking Structure south of 52<sup>nd</sup> Street and within the campus interior. Modifications to on site circulation and access would also include the extension of a private roadway south of Dover Street and streetscape improvements to 52<sup>nd</sup> Street. Phase 2 also includes the acquisition of 1.5 acres of Caltrans right-of-way adjacent to the project site and improvements to that land, including retaining walls and landscaping.

The new buildings and improvements to be constructed north of 52<sup>nd</sup> Street and east of Dover Street would be 2 to 3 stories and the remaining 4- to 5-story buildings south of 52<sup>nd</sup> Street are proposed to be generally concentrated at the center of the campus and away from nearby residential areas. However, during certain daylight hours, at certain times in the year, pedestrians and motorists could experience some degree of glare due to light reflecting off of the new buildings, which includes glass and/or window components and may be visible to surrounding roadways, including Dover Street, 52<sup>nd</sup> Street, and SR 24. However, glazing and window treatments, along with new landscaping along these roadways would minimize glare from new buildings and serve as a buffer between the buildings and adjacent roadways.

New buildings would create a new source of light within the campus and it is anticipated that redevelopment activities associated with Phase 2, including the improvements proposed for the adjacent Caltrans right-of-way, would include sources of nighttime lighting through the incorporation of exterior lighting for pedestrian safety. In addition, the new helistop would be lighted similarly to the existing helistop and would include 16 green LED perimeter lights, a lighted windcone that would provide wind direction and speed information, steady-burning red obstruction lights, a three color (green-white-clear) helistop beacon, four low flood lights, foot lights, and upper elevator lobby lighting. Proposed lighting is more fully described in Chapter III, Project Description. Except for the red obstruction lights, all proposed lighting would be needed only to accommodate the occasional nighttime landing or takeoff; however, the CHRCO design team would decide how and when the lights would be activated during the entitlement and design process. The new helistop would be located within the interior of the campus, south of 52<sup>nd</sup> Street and approximately 250 feet north of the existing helistop location, with similar limited visibility from nearby existing residential areas.

The type and intensity of lighting resulting from the proposed project would constitute a continuation of the type and intensity of lighting already established in the area, and would not be expected to result in a substantial increase in glare over existing conditions. While the height and mass of the new buildings would make light from the campus noticeable from off-site locations, it would be absorbed into the overall lighting patterns that already exist in the area. Implementation of SCA AES-1 would ensure that exterior lighting would not unnecessarily be cast onto adjacent properties, the use of reflective or mirrored glass would be minimized, and that light pollution would be minimized. As such, implementation of Phase 2 would not create a source of light and glare that would substantially or adversely affect day or nighttime views in the area and this impact would be less than significant.

**(5) Shade and Shadow Cast by Buildings Affecting Solar Collectors.** Shade and shadow impacts occur when a structure's height or its width (or a combination of these two characteristics) substantially reduces the access to sunlight. In a built urban environment like the project area, nearly all land uses create shade and shadow and, in turn, are subject to shade and shadows from neighboring structures. Existing buildings within the campus, particularly the larger 5-story Parking Garage, OPC1, and 1982 Tower currently cast some shadows onto adjacent areas both within and outside of the campus. The City of Oakland considers potential impacts to open spaces, solar collectors, and historical resources (as defined by CEQA Section 15064.5(a)) when determining the significance of changed shadow patterns.

Redevelopment of the campus would introduce new structures onto the site, which would alter existing shadow patterns on and within the vicinity of the site. This section describes the potential for Phase 1 and Phase 2 development to cast new shadows and addresses potential impacts of new buildings to solar collectors. Impacts related to open space and historical resources are discussed in the following sections.

The City of Oakland's list of permitted solar collectors was used to identify solar collectors, including passive solar heat collection, solar collectors for hot water, and photovoltaic solar collectors, in the project vicinity. There are no solar collectors within the existing CHRCO campus or within the immediate vicinity. Based on a review of the surrounding area and the City's list of permitted solar collectors, the nearest solar collector to the site is located at 54<sup>th</sup> and Dover Street, which is at least one block north of the northern campus boundary.

**Phase 1 Impacts.** Redevelopment activities associated with Phase 1 would result in demolition of the residential building located at 5204 Martin Luther King Jr. Way to make way for construction of the 6-story OPC2 building. OPC2 would likely cast shadows onto adjacent structures and nearby roadways. No other structures would be constructed on the campus as part of Phase 1 that could cast new shadows. No existing solar collectors are located within the immediate vicinity of the proposed OPC2 building. Therefore, shadow-related impacts to solar collectors associated with development of Phase 1 would be less than significant.

**Phase 2 Impacts.** Redevelopment activities associated with Phase 2 would result in the demolition of several buildings and construction of several new buildings, including: a new 2-story Family Residence Building and 3-story Clinical Support Building north of 52<sup>nd</sup> Street, and a 5-story Link Building with rooftop helistop, 5-story Patient Pavilion, and 4-story Parking Structure south of 52<sup>nd</sup> Street and within the campus interior. These new buildings would cast shadows onto adjacent structures and roadways, both within and outside of the campus. None of these new structures would be located within the vicinity of any existing solar collectors. Therefore, shadow-related impacts to solar collectors associated with development of Phase 2 would be less than significant.

**(6) Shade and Shadow Cast by Landscaping Affecting Solar Collectors.** As discussed above, no existing solar collectors are located within the immediate vicinity of the project site. New landscaping proposed by the project would be limited to the campus interior and surrounding public sidewalks. Mature trees would be planted to the extent feasible. However, because no existing solar collectors are located within the vicinity of the site, newly introduced landscaping would not adversely affect access to solar collectors, now or in the future when newly planted trees reach maturity. Therefore, shadow-related impacts to solar collectors associated with new landscaping developed as part of Phases 1 and 2 would be less than significant.

**(7) Shade and Shadow Affecting Public Open Space.** Aerial photography and City maps were utilized to locate public or quasi-public parks, lawns, gardens, or open space. Public open spaces within the vicinity of the site are limited to the Helen McGregor Plaza Park, which is located west of the site across Martin Luther King Jr. Way. This park is already heavily shaded due to mature landscape trees that are located throughout the park. The nearest building on the campus is the Parking Garage and, at over 100 feet away from the park, it does not currently cast shadows onto the park. Potential shade and shadow impacts to Helen McGregor Plaza Park are discussed below.

**Phase 1 Impacts.** The proposed OPC2 building would be located across Martin Luther King Jr. Way from Helen McGregor Plaza Park; however, due to the distance from the park (over 100 feet) and height of the building (no greater than 85 feet), new shadows cast by the building would not reach the plaza. Furthermore, this plaza is currently shaded by landscape trees and the elevated BART tracks. Therefore, shadow-related impacts to public open space areas associated with development of Phase 1 would be less than significant.

**Phase 2 Impacts.** As discussed above, the proposed OPC2 building developed as part of Phase 1 would be the nearest new structure to the existing Helen McGregor Plaza Park. The closest building proposed in Phase 2 would be the Central Utility Plant, approximately 550 feet southeast of the park. Therefore, shadow-related impacts to public open space areas associated with development of Phase 2 would be less than significant.

**(8) Shade and Shadow Affecting Historic Resources.** Historical resources on and within the vicinity of the site are described in detail in Section IV.C, Cultural and Historic Resources. As discussed, the A/B Wing on the project site is eligible for listing in the Local Register and is considered a historical resource for the purposes of CEQA. In addition, seven existing residential buildings on the campus are considered to be contributors to the 55<sup>th</sup> and Dover Residential District and are considered historical resources under CEQA due to their eligibility for listing in the California Register and for being identified as significant (e.g., rated 1-5) in a historical resource survey (refer to Table IV.C-2 for additional detail). Potential impacts of Phase 1 and Phase 2 development to historic resources are discussed below.

**Phase 1 Impacts.** No existing historic resources are located within the immediate vicinity of the proposed OPC2 building (see Figure IV.C-1), which would be surrounded by the existing Parking Garage, OPC1, 52<sup>nd</sup> Street, and Martin Luther King Jr. Way. Therefore, shadow-related impacts to historic resources associated with development of Phase 1 would be less than significant.

**Phase 2 Impacts.** Phase 2 development activities would occur within the vicinity of potentially-designated historic structures, including potential contributors to the 55<sup>th</sup> and Dover Residential District, and within the vicinity of the A/B Wing. As discussed in more detail below, new structures would likely cast shadows onto some of these structures, although these new shadows would not be so substantial as to materially alter the physical characteristics of these resources that convey their historical significance or affect their eligibility for listings in the California Register.

New construction associated with the 2-story Family Residence Building would be substantially set back from 53<sup>rd</sup> Street and the existing façades of three residential structures facing 53<sup>rd</sup> Street (two of which are potentially-designated historic structures) would be retained. New shadows cast by this building would not reach homes located north of 53<sup>rd</sup> Street, which would be located about 75 feet from the new structure and are outside of the project site but located within the 55<sup>th</sup> and Dover

Residential District. The nearest contributor to the 55<sup>th</sup> and Dover Residential District within the project site is located at 5225 Dover Street, at the southwest intersection of 53<sup>rd</sup> and Dover Streets and new shadows cast by the proposed Family Residence Building would not reach this structure as it is at least 100 feet away. Additionally, the proposed Clinical Support Building would be located across Dover Street from 5203 Dover Street which is also a contributing resource. However, due to the relatively low scale of the proposed building and distance from the residential structure (about 50 feet), it is not anticipated that the proposed 3-story Clinical Support Building would cast new shade or shadows onto this structure such that its significance as a contributing resource would be materially impaired.

Four- to five-story buildings proposed as part of Phase 2 would be concentrated south of 52<sup>nd</sup> Street, within the campus interior, and would not be adjacent to any of the seven potentially-designated historic properties that are contributors to the 55<sup>th</sup> and Dover Residential District located north of 52<sup>nd</sup> Street and within the site. The existing 3-story B/C Wing is immediately adjacent to the A/B Wing and casts some shadows onto the A/B Wing due to its proximity. Under Phase 2, the B/C Wing would be demolished and new buildings near the A/B Wing would include the 5-story Link Building and Patient Pavilion. These new buildings could cast some new shadows onto the A/B Wing; however, these shadows would not affect the historical significance of the structure, which is already located within a compact campus setting and is already shaded by adjacent structures during certain periods. Therefore, shadow-related impacts to historic resources associated with development of Phase 2 would be less than significant.

**(9) Conflicts with Existing Regulations Providing for Adequate Light.** The proposed project does not propose any exceptions or variances to the policies and regulations of the General Plan, Planning Code, or Uniform Building Code that would in turn create a conflict with regulations that govern the provision of adequate light related to appropriate uses. Security lighting would be provided throughout the campus interior and along adjacent street frontages, as appropriate. In addition, the proposed helistop structure would include the appropriate safety lighting. Refer to Table IV.A-1 for a description of potential General Plan policy conflicts. There would be no impact associated with the provision of adequate lighting for the project.

**(10) Wind.** A building's exposure, massing, and orientation can affect nearby ground-level wind accelerations, which can in turn affect the comfort of pedestrians. In the City of Oakland, wind analysis only needs to be performed if the project's height is 100 feet or greater (measured to the roof) and one of the following conditions exists: the project is located adjacent to a substantial water body (i.e., Oakland Estuary, Lake Merritt, or San Francisco Bay) or the project is located in Downtown. The City has determined that a building of over 100 feet in height in any of these locations could generate winds in excess of 36 miles per hour, which are well above typical wind conditions in the area and could in turn affect the comfort level of the pedestrian environment.

The project site is not located adjacent to a substantial water body (i.e., Oakland Estuary, Lake Merritt, or San Francisco Bay) or in or near Downtown Oakland. In addition, the proposed project would not result in the construction of any buildings that are 100 feet tall or greater. At build out, the tallest building on the site would be the approximately 80-foot-tall 6-story OPC2 building. Therefore, based on the City's thresholds of significance, the proposed project is not anticipated to generate winds in excess of 36 miles per hour, would not otherwise substantially alter wind patterns on the site or surrounding area, or create new winds that would otherwise exceed City standards.

**c. Cumulative Impacts.** The geographic area considered for the cumulative aesthetics analysis includes the neighborhoods within close proximity to the project site and landscape within the immediate viewshed. Because the project site is not generally visible from distant areas, the project's impacts related to aesthetics and shadow only generally affect the immediate surroundings. As discussed above, the project would not adversely obstruct scenic views available from within the vicinity of the campus. Significant impacts to visual resources associated with new sources of light and glare would be site-specific and would generally not contribute to cumulative impacts with implementation of SCA AES-1. In addition, tree removal would not result in cumulative impacts to the loss of protected trees within implementation of SCA BIO-3. The projects identified in the Major Projects List have been or will be designed or conditioned, in accordance with City and policies, to avoid significant adverse effects on visual quality or other elements of the aesthetic environment, including limiting adverse effects associated with new sources of light and glare or increased shading of public spaces, historic resources, or existing solar collection sites. Therefore, past, present, and future projects in the area are not expected to result in a significant cumulative impact to visual resources, and the project would not make a considerable contribution to such an impact. As such, the project would result in less than significant cumulative impacts related to aesthetics and shadow.

## C. CULTURAL AND HISTORIC RESOURCES

This section describes existing cultural resources conditions in the project vicinity, identifies potentially significant impacts to such resources that may result from project implementation, and recommends mitigation measures to reduce the severity of potentially significant impacts.

Cultural resources are sites, buildings, structures, objects, and districts that may have traditional or cultural value for their historical significance. Cultural resources include a broad range of resources, examples of which include archaeological sites, historic roadways, landscapes, and buildings of architectural significance. For a cultural resource to be considered a historical resource (i.e., eligible for listing in the California Register of Historical Resources), it generally must be 50 years or older<sup>1</sup> and 1) be listed in, or determined eligible for listing in, the California Register of Historical Resources by the State Historical Resources Commission; 2) be included in a local register of historical resources, as defined in section 5020.1(k) or identified as part of a survey meeting the requirements of section 5024.1(g) of the Public Resources Code; or 3) be determined by the lead agency as historically significant.

Under CEQA, paleontological resources are a subset of cultural resources and include fossil plants and animals, and evidence of past life such as trace fossils and tracks. Ancient marine sediments may contain invertebrate fossils representing snails, clam and oyster shells, sponges, and protozoa; and vertebrate fossils such as fish, whale, and sea lion bones. Terrestrial sediments may contain fossils that represent such vertebrate land mammals as mammoth, camel, saber tooth cat, horse, and bison.

### 1. Setting

This section describes the methods used to establish the baseline conditions for cultural resources in the project area; provides a brief historical overview of the project area; includes the State and local legislative regulatory context for cultural resources; and describes the cultural resources identified in the project site and their significance under CEQA.

This setting draws upon background information and historical resource evaluations including: *Oakland Children's Hospital and Research Center Historic Resource Evaluation Part I*;<sup>2</sup> *Historic Resource Evaluation Part I Supplement: Children's Hospital Oakland Magnolia Tree and Courtyard*;<sup>3</sup> *Oakland Children's Hospital and Research Center Historic Resource Evaluation Part II: Proposed Project Analysis*;<sup>4</sup> and State of California Department of Parks and Recreation Form 523 Record (DPR

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<sup>1</sup> California Office of Historic Preservation, 2006. *California Register and National Register: A Comparison (for purposes of determining eligibility for the California Register)*. Technical Assistance Series No. 6. California Department of Parks and Recreation, Sacramento.

<sup>2</sup> Page & Turnbull, 2013. *Oakland Children's Hospital and Research Center Historic Resource Evaluation Part I*. August 5.

<sup>3</sup> Page & Turnbull, 2013. *Historic Resource Evaluation Part I Supplement: Children's Hospital Oakland Magnolia Tree and Courtyard*. November 5.

<sup>4</sup> Page & Turnbull, 2014. *Oakland Children's Hospital and Research Center Historic Resource Evaluation Part II: Proposed Project Analysis*. July 29.

523) for the 55<sup>th</sup> and Dover Residential District.<sup>5</sup> These documents are included in Appendix B of this EIR.

**a. Methods.** The cultural resources analysis conducted for the project included archival records searches, a literature review, consultation with local Native American representatives, and a field survey. This work was done to establish the baseline conditions for cultural resources in the project site and vicinity. The results of the records searches, literature review, consultation, and field survey are presented in the cultural resource technical studies prepared for the project (Appendix B) and in subsequent sections of this chapter.

**(1) Records Searches.** Records searches were conducted to identify cultural resources within and adjacent to the project area. The records searches were conducted at the Northwest Information Center (NWIC) of the California Historical Resources Information System, Sonoma State University, Rohnert Park; and the University of California Museum of Paleontology (UCMP), Berkeley. The NWIC, an affiliate of the State of California Office of Historic Preservation, is the official State repository of cultural resources records and reports for Alameda County. The UCMP's database includes information on locations where fossils have been identified, the taxa of fossils found at a particular location, and the geological formations associated with a fossil locality.

In addition, the Oakland Cultural Heritage Survey (OCHS) files at the City Department of Planning and Building were reviewed for the project. The OCHS includes information obtained from a historical survey of every building in the City visible from the public rights-of-way and provides planning-related assistance for projects that may affect historic built-environment resources for the City's Department of Planning and Building. The OCHS has assigned preliminary property ratings to buildings that indicate their historical significance for land management and planning purposes. (See discussion under Regulatory and Legislative Context section below for additional information on the OCHS property rating system.)

As part of the records search, LSA reviewed the following State of California inventories for cultural resources in and immediately adjacent to the project:

- *California Inventory of Historic Resources*,<sup>6</sup>
- *Five Views: An Ethnic Historic Site Survey for California*,<sup>7</sup> and
- *Directory of Properties in the Historic Property Data File*.<sup>8</sup> The directory includes the listings of the National Register of Historic Places, National Historic Landmarks, the California Register of Historical Resources, California Historical Landmarks, and California Points of Historical Interest.

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<sup>5</sup> Page & Turnbull, 2014. California Department of Parks and Recreation Form 523 series record, 55<sup>th</sup> and Dover Residential District. May 5.

<sup>6</sup> California Department of Parks and Recreation, 1976. *California Inventory of Historic Resources*. California Department of Parks and Recreation, Sacramento.

<sup>7</sup> California Office of Historic Preservation 1988. *Five Views: An Ethnic Historic Site Survey for California*

<sup>8</sup> California Office of Historic Preservation, 2012. California Department of Parks and Recreation, Sacramento. April 5.



(2) **Literature Review.** Publications, maps, and photographs were reviewed for archaeological, ethnographic, historical, and environmental information about the project site and vicinity. The purpose of this review was to: 1) identify cultural resources within the project site and their historical context, and 2) identify the potential for the project site to contain such resources.

(3) **Field Survey.** Page & Turnbull architectural historians documented and evaluated all buildings 45 years old or older in the project site and completed a reconnaissance survey of properties in the 55<sup>th</sup> and Dover Residential District. An LSA archaeologist conducted a field review to assess the archaeological sensitivity of the project site. The cultural resource surveys were necessary to inform the evaluations of cultural resources for listing in the California Register of Historical Resources and the Oakland Register.

(4) **Native American Consultation** LSA initiated Native American consultation on behalf of the City for the project pursuant to California Government Code §§65352.3 and 65352.4. These sections of the California Government Code were adopted pursuant to Senate Bill 18 (SB 18) and require local governments to contact, refer plans to, and consult with tribal organizations prior to making a decision to adopt or amend a general or specific plan. The purpose of SB 18 is to obtain Native American tribal input during the planning process to avoid, or mitigate the effects to, cultural places in local government jurisdiction.

The project sponsor is proposing a General Plan Amendment, which would require consultation with local Native American representatives pursuant to California Government Code Sections 65352.2 and 65352.4. The proposed General Plan Amendment would redesignate the northeastern corner of the project site from Mixed Housing Type Residential to Institutional.

Native American consultation conducted for the project was completed in accordance with the Governor's Office of Planning and Research *Tribal Consultation Guidelines*.<sup>9</sup> Pursuant to these guidelines, LSA contacted the California Native American Heritage Commission (NAHC) for a list of tribes eligible to consult for the proposed project. The NAHC provided LSA with a list of five individuals eligible to consult with the City, each of whom was contacted on January 17, 2014, by LSA via letter sent by U.S. Postal Service Certified Mail to inform them of their opportunity to consult for the project and address possible impacts to cultural places. Pursuant to the *Tribal Consultation Guidelines* and California Government Code Section 65352.3(a)(2), Native Americans have 90 days in which to request consultation with the lead agency to discuss mitigation of potential effects to cultural places that may occur from proposed land use changes.

On February 3, 2014, Ann Marie Sayers with the Indian Canyon Mutsun Band of Costanoan contacted LSA via telephone to discuss the project's potential impacts to Native American sites. LSA stated in that conversation that no archaeological deposits have been identified in the project site, although it was acknowledged that Native American sites have been recorded along Temescal Creek, a westerly-flowing drainage in proximity to the southern end of the project site. The presence of this creek therefore, indicates an elevated sensitivity for subsurface Native American archaeological deposits and human remains.

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<sup>9</sup> Governor's Office of Planning and Research, 2005. *State of California Tribal Consultation Guidelines*. Governor's Office of Planning and Research, Sacramento. November 14.

LSA indicated to Ms. Sayers that an archaeological survey was conducted along the section of Temescal Creek at the southern end of the project site and forwarded her a copy of the study documenting that survey via email on February 4, 2014. In that email, it was requested that Ms. Sayers contact LSA if she has additional information or concerns regarding the project's potential impacts to cultural resources.

Although Ms. Sayers did not formally request consultation with the City for this project, she did request that an archaeologist and Native American monitor project ground-disturbing activities.

No other Native American individuals or organizations contacted for the project pursuant to the requirements of California Government Code Sections 65352.2 and 65352.4 requested additional information or consultation with the City within 90 days of notification.

**b. Cultural Resources Overview.** This subsection briefly describes the prehistory and ethnography, history, and paleontology of the project site vicinity as determined by the records searches and literature review described above.

**(1) Prehistory and Ethnography.** The Archaic-Emergent cultural sequence developed by Fredrickson,<sup>10</sup> recalibrated by Milliken et al.,<sup>11</sup> is commonly used to interpret the prehistoric occupation of the San Francisco Bay Area. The recalibrated sequence is broken into two broad periods: the Archaic Period, consisting of the Early Holocene Lower Archaic (8000-3500 cal B.C.), Middle Archaic (3500-500 cal B.C.), Initial Upper Archaic (500 cal B.C.-cal A.D. 430), and Late Upper Archaic (cal. A.D. 430-1050); and the Emergent Period, consisting of the Lower Emergent Period (cal A.D. 1050-1550), and Terminal Late (or Upper Emergent) Period (cal. A.D. 1550-historic).

The Early Holocene is characterized by “a generalized mobile forager pattern” as indicated by assemblages containing millingslabs and handstones and large wide-stemmed and leaf-shaped projectile points.<sup>12</sup> Archaeological sites from the Early Holocene are rare, although this may in part be an issue of visibility, with these ancient deposits likely underlying several feet of soil. Although local variations occur, the Early Period is generally marked by increased sedentism, regional trade, and symbolic integration. *Olivella* and *Haliotis* shell ornaments and the mortar and pestle first appear in the local archaeological record during this period. An evolution in symbolic integration systems and technology is witnessed in the Lower Middle Period, with the introduction of new shell bead styles and bone tools, including split-beveled and small saucer *Olivella* beads, barbless fish spears, elk femur spatula, bone tubes and whistles, and basketry awls. Culturally distinct traits appear during the Upper Middle Period, suggesting migration of a new population. This new population, referred to as the Meganos Aspect, appears to have spread from the San Joaquin Delta to the East Bay during the Upper Middle Period and is primarily characterized by its mortuary complex, which typically includes extended burial posture. The Initial Late Period represents the ethnographically documented cultures present at the time of European contact. This period is marked in part by increased sedentism; status

<sup>10</sup> Fredrickson, David A., 1974. Cultural Diversity in Early Central California: A View from the North Coast Ranges. *Journal of California Anthropology* 1(1):41-53.

<sup>11</sup> Milliken, Randall, et al., 2007. Punctuated Culture Change in the San Francisco Bay Area. In *California Prehistory*, edited by Terry L. Jones and Kathryn A Klar, pp 99-124. Rowman and Littlefield Publishers, Inc, Lanham, Maryland.

<sup>12</sup> Milliken, Randall, et al., 2007:114

ascription and social stratification observed in burial practices; and the emergence of the Kuksu Cult, a ceremonial system that unified several language groups in Central California at the time of European contact. New technology was also introduced during this period, notably the bow-and-arrow, which is evidenced in the archaeological record by small dart-sized projectile points.

Prehistoric archaeological resources in the East Bay date to at least the Middle Holocene (Middle Archaic Period), as documented at the West Berkeley (CA-ALA-307) and Ellis Landing (CA-CCO-295) shellmounds.<sup>13</sup>

Present-day Oakland is within territory once occupied by Costanoan (also commonly referred to as Ohlone) language groups. Eight Ohlone languages were spoken in the area from the southern edge of the Carquinez Strait to portions of the Big Sur and Salinas rivers south of Monterey Bay, to approximately 50 miles inland from the coast.<sup>14</sup> The project site is within ancestral territory of the Chochenyo language group of Ohlone.

Ohlone territories were comprised of one or more land holding groups that anthropologists refer to as “tribelets.” The tribelet, a nearly universal characteristic throughout native California, consists of a principle village occupied year round, and a series of smaller hamlets and resource gathering and processing locations occupied intermittently or seasonally. Populations of tribelets ranged between 50 and 500 persons and were largely determined by the carrying capacity of a tribelet’s territory. The closest known tribelet to the project area was *Huchium*, whose territory extended from Temescal Creek, north to lower San Pablo and Wildcat Creek drainages.<sup>15</sup> Members of the *Huchium* are noted on Mission San Francisco registers beginning in 1794.<sup>16</sup>

**(2) History.**<sup>17</sup> In 1820, the Spanish government granted a large tract of land to Luis Maria Peralta upon his retirement from the Spanish military. Peralta’s land grant, which encompasses the Oakland area, was divided among his four sons. The present-day areas of Central and North Oakland, Emeryville, and Piedmont were bequeathed to Vicente Peralta. In 1836 Vicente built an adobe house on a parcel now bounded by Telegraph Avenue, 55<sup>th</sup> Street, Vicente Way, and State Route 24. The Gold Rush brought opportunistic settlers to the East Bay, and Peralta sold or surrendered most of his land to squatters by 1853.

By the 1860s, the area that is now the 55<sup>th</sup> and Dover Residential District (see Project Site Cultural Resources section below) was owned by Solomon E. Alden, a wealthy farmer who had arrived in California from Connecticut in the 1850s. Alden planted (or inherited from the Peralta era) extensive

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<sup>13</sup> Milliken, Randall, et al., 2007:115.

<sup>14</sup> Shipley, William F., 1978. Native Languages of California. In *California*, edited by Robert F. Heizer, pp. 80-90. Handbook of the North American Indians, Vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

<sup>15</sup> Milliken, Randall, 1995:243. *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area, 1769-1810*. Ballena Press, Menlo Park, California.

<sup>16</sup> Ibid.

<sup>17</sup> This section adapted from *Oakland Children’s Hospital and Research Center Historic Resource Evaluation: Part I*, (Page & Turnbull, August 5, 2013); and the California Department of Parks and Recreation Form 523 series record for the 55<sup>th</sup> and Dover Residential District (Page & Turnbull, May 5, 2014).

orchards, and was listed by the Oakland Assessor as the fourth wealthiest man in Oakland by the time of his death in 1881. Alden's daughter Elsie married Harvard-educated lawyer John McElrath, and they constructed a large home on Alden family land. This house was located on 51<sup>st</sup> Street just west of Dover Street, and later served as the first home of Children's Hospital of Oakland (established as the Baby Hospital in 1912).

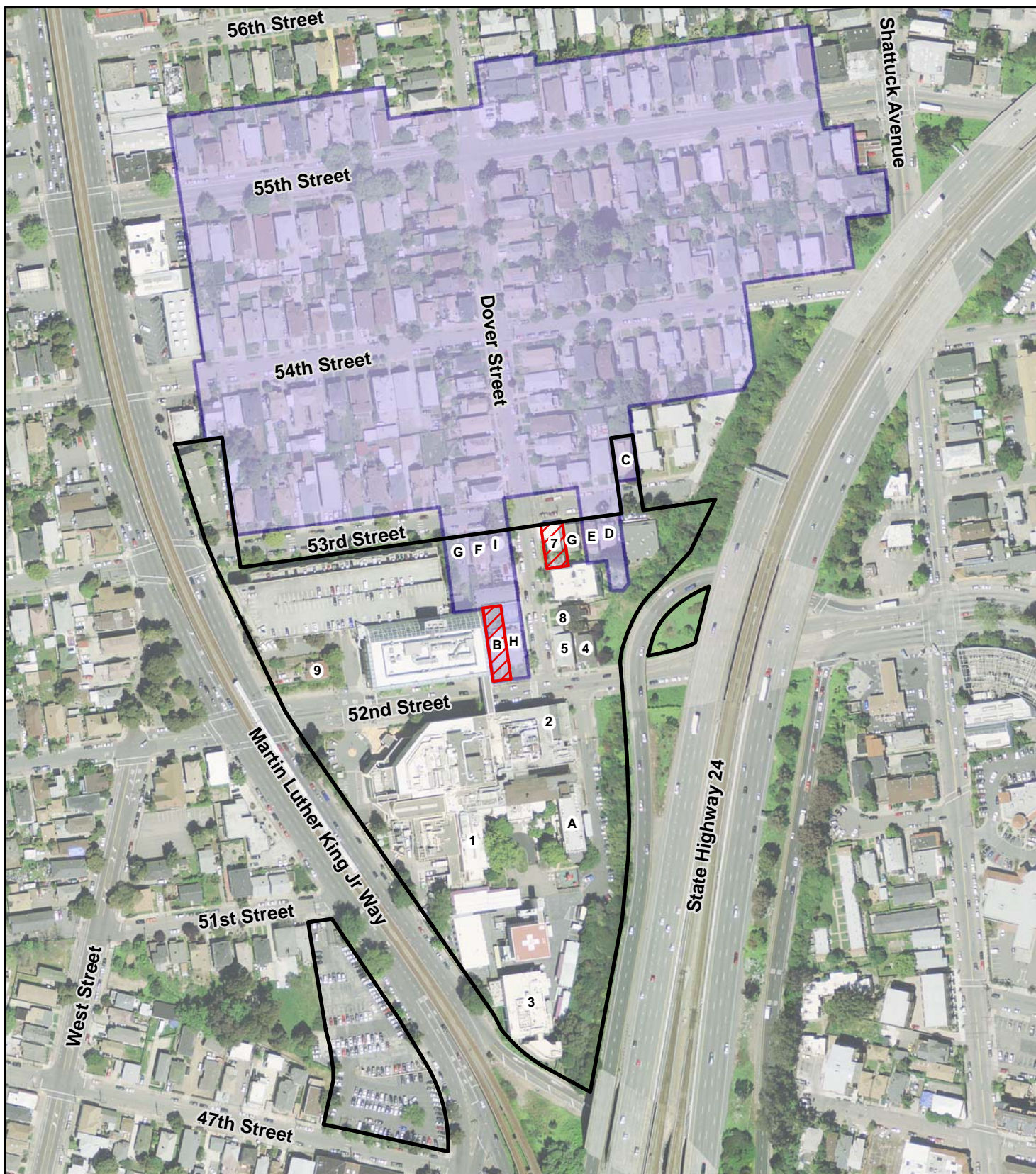
Residential settlement during the 1860s was concentrated close to the downtown core, east and west along the waterfront of the Alameda Estuary, and west into industrial areas that later became known as West Oakland. This concentration reflected the need for most people to live within walking distance of their employment and the lack of reliable public transit options at the time. By 1876, steam-powered rail service ran along Shattuck Avenue between Oakland and Berkeley, and by 1891 electric rail service of the Oakland Consolidated Street Railway ran along Grove Street (now Martin Luther King Jr. Way). These improvements had the effect of increasing commercial, residential, and even light industrial construction in the unincorporated area between Oakland and Berkeley adjacent to the new transportation lines. Reflecting this increased development, the area of North Oakland which had been known variably as Alden and Temescal officially became part of Oakland by annexation in 1897.

The San Francisco, Oakland & San Jose Railway, which later became known as the Key Route System, began operating their first streetcar line in October 1903 along Grove Street between downtown Berkeley and a ferry connection to San Francisco. The Key Route System was from its inception used by Francis Marion "Borax" Smith, the founder San Francisco, Oakland & San Jose Railway as a way to increase revenue for his vast real estate holdings, which he held under the company name of the Realty Syndicate. With the Realty Syndicate, Smith purchased large tracts of undeveloped land, and with the Key Route System, he created a way for buyers to reach this land. Although the area surrounding the 55<sup>th</sup> and Dover Residential District was never owned by the Realty Syndicate, it was owned by the Key Route's vice president, E. A. Heron, in 1906. The connection between real estate subdivision and Key Route expansion that is illustrated in this neighborhood—specifically ownership of this land by E.A. Heron—is a representative example of an important development pattern that shaped much of Oakland in the first decade of the 20<sup>th</sup> century.

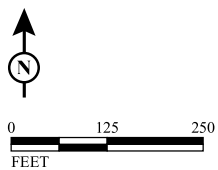
Construction of the Key Route System's E Line was completed in 1910, although partial service along the line may have begun a few years prior to 1910. Starting at the ferry pier, the route traveled east parallel to 40<sup>th</sup> Street, northeast parallel to Adeline Street, east along 55<sup>th</sup> Street, and northeast along Claremont Avenue to a terminus at the Claremont Hotel, which was constructed by the Realty Syndicate to increase ridership on the line. By 1910 the neighborhood was well connected to San Francisco and the rest of the East Bay by the Key Route System.

In addition to improvements in transportation, the drastic population increase in Oakland after the 1906 earthquake likely contributed to the rapid settlement of Oakland, including the 55<sup>th</sup> and Dover Residential District (**Figure IV.C-1**). Immediately after the earthquake, upwards of 200,000 refugees from San Francisco sought shelter in Oakland. It is estimated that only 50,000 of these people moved back to San Francisco, while the bulk of the rest remained to start life anew in Oakland. By 1910, the 55<sup>th</sup> and Dover area was owned by the real estate firm of Bowles & Fitzgerald and most of the lots had been built upon. Development was so rapid that by the time the Sanborn Fire Insurance Company returned to the area to complete their 1911 map, not only did they include the area that they had eight years ago skipped, their survey shows a residential neighborhood almost completely built out. In the area that is now the 55<sup>th</sup> and Dover Residential District, which today includes 143 buildings, there





LSA



#### LEGEND

- Project Boundary
- 55th and Dover Residential District, Area of Secondary Importance (ASI)
- A-I** Historical Resource under CEQA (See Table IV.C-2)
- 1-9** Not a Historical Resource under CEQA (See Table IV.C-2)
- Private Residence – Parcel not owned by CHRCO

FIGURE IV.C-1

*CHRCO Campus Master Plan Project EIR*  
 Project Area Buildings Evaluated  
 as Potential Cultural Resources

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were only 34 empty lots in 1911. Twenty-three of the undeveloped lots were along 55<sup>th</sup> Street, perhaps reflecting a slight reluctance to build directly along the Key System Route. Almost all of the buildings that were extant in 1911 are still extant today. The 1911 Sanborn Map also shows that residential development extended uniformly south to 52<sup>nd</sup> Street, in areas that have been replaced by contemporary construction by the Children's Hospital (1960-1990s) and the construction of State Route 24 in the late 1960s. A combination of information from Block Books, Sanborn Maps, and building permit records reveals that the majority of construction in the 55<sup>th</sup> and Dover Residential District took place between 1906 and 1911, and a survey of the neighborhood conducted in November 2013 reveals that the majority of these buildings remain extant.

Some properties in the 55<sup>th</sup> and Dover Residential District were constructed by their owners. Many were built by local contractors. Some contractors built more than one home in the area, including the Legris Brothers, Fred A. Muller, W. J. Bermingham, Wilson Frank and Leander T. Cook; however, no one builder or property owner dominated the area. Architectural styles included the Classic Box and the one-and-a-half story bungalow, sometimes with Classical ornament.

Representative occupations for residents of the area included musician, machinist, bank cashier, molder, partner in a livery firm, helper at a carriage construction firm, manager, and wireworker. The 1910 Federal Census indicates all residents in the area were white.

Sixteen properties were constructed in the 55<sup>th</sup> and Dover Residential District in 1912 and 1913. After that, construction slowed, with only six properties constructed between 1914 and 1921. A building boom that took place across the entire Bay Area in the 1920s added ten additional properties to the area in 1922 and 1923. Eight additional properties were constructed after 1923; six between 1924 and 1935, and two much later, circa 1970. The 1950 Sanborn Fire Insurance Map shows near complete build-out of the neighborhood.

The street pattern, lot layout, and residential pattern that was established between 1906 and 1913 has largely persevered, despite changes to the area that include the removal of the Key System Route E along 55<sup>th</sup> Street after 1958, the construction of State Route 24 in the 1960s, the construction of an elevated BART track at Martin Luther King Jr. Way in the 1970s, and the expansion of the Children's Hospital and Research Center from the 1960s through the 1990s. The area also remains well served by public transportation; after the Key Route System ceased operation in 1958, the Alameda Contra Costa Transit District (AC Transit) continued to run bus lines along Martin Luther King Jr. Way, 55<sup>th</sup> Street, and Shattuck Avenue. In combination with BART, these busy routes continue to connect the district to the broader Bay Area and bound the district in a way that reflects its historic pattern of development.

**Oakland Children's Hospital.** In 1911, Bertha Wright, a visiting nurse for the Collegiate Alumnae Association of Alameda County, formed a group called the Baby Hospital Association with the mission to explore the establishment of a hospital specifically designed for infants and children under the age of five. Although the city of San Francisco had a children's hospital, there was no such organization in the East Bay. The high death rates for young children at the turn of the 20th century, which stood at over 10 percent for newborns and children younger than two, catalyzed the formation of the association.

In 1912, the Baby Hospital Association purchased a large Queen Anne-style building known as the McElrath mansion, located on 51<sup>st</sup> Street between Grove Street (now Martin Luther King Jr. Way)



and Telegraph Avenue, to house their new hospital. The residential building immediately underwent renovations for use as a hospital facility, and a clinic was established in the carriage house on the property where patients were treated while these renovations were taking place. On September 16, 1914, the Baby Hospital in the McElrath mansion was dedicated.

In the 1920s, changes in building code necessitated the construction of a new fireproof masonry hospital building. The Baby Hospital Association secured loans for new construction, and in 1926 selected Oakland architect Edward W. Cannon to design the new hospital. Cannon designed a state-of-the-art steel frame and reinforced concrete L-shaped building in a Northern Italian Romanesque style that reflected the latest social and hygiene theory in hospital design. The new hospital building included two south-facing two-story solariums, as well as a south-facing terrace and a colonnaded porch at the entrance. The Baby Hospital (now known as the A/B Wing) was dedicated in 1928.

The population of the East Bay increased dramatically during World War II, and patient load at the Hospital rose accordingly; between 1940 and 1945, patient load grew from 10,000 visits a year to 24,500. In 1945, the Hospital hired the architecture firm of Stone and Mulloy to design a master plan for hospital expansion. The firm specialized in hospital design, and the plan they developed reflected contemporary advances in the field, including interior spaces that facilitated department cooperation. Work began on the first portion of the proposed master plan, which necessitated the demolition of the outmoded McElrath mansion. A magnolia tree located directly east of the McElrath house that had been planted around 1860 by female members of the Alden family was preserved during this demolition. The new B/C Wing of the Hospital was dedicated on October 17, 1948.

Between 1947 and 1957, the Hospital's board purchased almost all of the lots and houses surrounding the Hospital on Grove (Martin Luther King Jr. Way), 51<sup>st</sup>, 52<sup>nd</sup>, and Dover Streets. Although some of these houses served as housing and administration buildings, eventually all were demolished for hospital expansion. In 1959, the Bruce Lyon Memorial Research Laboratory, designed by Stone, Marraccini and Patterson, was constructed on the southern portion of the hospital property, and in 1962, the William H. and Helen C. Ford Diagnostic and Treatment Center, also designed by Stone, Marraccini and Patterson, was dedicated. The south-facing entrance and lobby of the A/B Wing (Baby Hospital) were expanded and remodeled in 1962, and third story additions were built at the A/B Wing and the B/C Wing.

The construction of the Grove-Shafter freeway (State Route 24) in 1968-69 hemmed in any potential Hospital expansion to the east, altered circulation patterns around the Hospital complex, and limited visual access to the A/B Wing. In the 1970s, several additions were made to the Hospital complex and approval for larger additions was granted. The West Site Plant, designed by Kaplan/McLaughlin, was constructed adjacent to the west façade of the B/C Wing in 1979. At this time, City approval was received for a new hospital building at the intersection of 52<sup>nd</sup> and Grove streets, which would adjoin the B/C Wing. The new five-story patient care facility, designed by KMD and known as the Patient Tower, opened on September 12, 1982. This addition reoriented the hospital complex so that it fronted north onto 52<sup>nd</sup> Street, and further reduced vehicular and visual access to the A/B Wing and the B/C Wing.

More recent construction at Children's Hospital includes the Cafeteria (1987), a one-story build-out at the B/C Wing (1987), the Bruce Lyon Memorial Research Center Addition (1992), the Cardiac Catheterization Laboratory (1993), and the Outpatient Center and parking garage (1993). No major new construction has taken place at Children's Hospital since completion of these projects in 1993.



**(3) Paleontology.** The project area lies on coastal plains near the eastern shore of San Francisco Bay. The sediments that underlie the project area are Quaternary (recent-2.6 million years B.P.) alluvial deposits. The Hayward Fault runs northwest to southeast 2.1 miles northeast of the project area. East of this fault, Mesozoic rocks of the Franciscan Complex rise up to form the Oakland Hills. Quaternary alluvium eroded from these hills formed the coastal plains along eastern San Francisco Bay. From the base of the Oakland Hills, sediments are progressively younger towards the bay, and much of the earth above sea level along the bay margin consists of recent artificial fill.

The surface geology of the project site consists of Holocene (11,500 year B.P. to present) alluvial fan and fluvial deposits.<sup>18</sup> Holocene alluvial gravels, sand, and clay eroded from the East Bay Hills and, transported by creeks, formed the plains along eastern San Francisco Bay. These Holocene deposits are too recent to contain significant paleontological resources (fossils). Underlying these Holocene deposits at an unknown depth are older Quaternary (i.e., Pleistocene) deposits, which have a potential to contain significant fossils. Locally, these sediments contain invertebrate and extinct vertebrate fossils, many of which are representative of the Rancholabrean land mammal age. Fossils found in alluvium of this age include, but are not limited to bison, mammoth, ground sloths, saber-toothed cats, dire wolves, cave bears, rodents, birds, reptiles and amphibians.

**c. Regulatory and Legislative Context.** CEQA, sections of the California Public Resources Code, the City's Historic Preservation Element of its General Plan, City Standard Conditions of Approval, and sections of the City Municipal Code comprise the regulatory framework for cultural resources on the project site, and each of these are described below.

**(1) CEQA Requirements.** In the City of Oakland, a "historical resource" under CEQA is a resource which meets any of the following criteria:

- A resource listed in, or determined eligible for listing in, the California Register of Historical Resources (California Register);
- A resource included in Oakland's Local Register of historical resources, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;
- A resource identified as significant (e.g., rated 1-5) in a historical resource survey recorded on Department of Parks and Recreation Form 523, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;
- Meets the criteria for listing on the California Register of Historical Resources; or
- A resource that is determined by the Oakland City Council to be historically or culturally significant even though it does not meet the other four criteria listed here.

A historical resource consists of:

"Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of

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<sup>18</sup> Helley, E.J., and R.W. Graymer, 1997. *Quaternary Geology of Alameda County and Surrounding Areas, California*. U.S. Geological Survey, Washington, D.C.

California.... Generally, a resource shall be considered by the lead agency to be ‘historically significant’ if the resource meets the criteria for listing on the California Register of Historical Resources” *CEQA Guidelines* Section 15064.5(a)(3).

In accordance with *CEQA Guidelines* Section 15064.5(b), a substantial adverse change in the significance of a historical resource is a significant effect on the environment. A substantial adverse change in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired.

**(2) Public Resources Code 5024.1: California Register of Historical Resources.** Section 5024.1 of the PRC established the California Register. Generally, a resource is considered by the lead agency to be ‘historically significant’ if the resource meets the criteria for listing on the California Register (California Code of Regulations [CCR] Title 14(3) Section 15064.5(a)(3)). For a cultural resource to qualify for listing in the California Register it must be significant under one or more of the following criteria:

- Criterion 1:* Associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- Criterion 2:* Associated with the lives of persons important in our past;
- Criterion 3:* Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Criterion 4:* Has yielded, or may be likely to yield, information important in prehistory or history.

In addition to being significant under one or more of these criteria, a resource must retain enough of its historic character and appearance to be recognizable as a historical resource and be able to convey the reasons for its significance (CCR Title 14 Section 4852(c)). Generally, a cultural resource must be 50 years or older to be eligible for the California Register.

**(3) Oakland General Plan Historic Preservation Element.** The Historic Preservation Element (HPE) of the Oakland General Plan presents goals, policies, and objectives that guide historic preservation efforts in Oakland. HPE policies define the criteria for legal significance that must be met by a resource before it is listed in Oakland’s local register of historical resources, and would, therefore, be considered a historical resource under CEQA. Based on a city-wide preliminary architectural inventory by the OCHS, pre-1945 properties have been assigned a significance rating of A, B, C, D, E, or F and assigned a number (1, 2, or 3) which indicates a building’s district status. The ranking system, described in **Table IV.C-1**, indicates a property’s status as a historical resource and identifies those properties warranting special consideration in the planning process. The individual property rating of a building is based on the following criteria:

- Visual Quality/Design: Evaluation of exterior design, interior design, materials and construction, style or type, supporting elements, feelings of association, and importance of designer.
- History/Association: Association of person or organization, the importance of any event, association with patterns, and the age of the building.

- Context: Continuity and familiarity of the building within the district.
- Integrity and Reversibility: Evaluation of the building's condition, its exterior and interior alterations, and any structural removals.

**Table IV.C-1: Oakland Cultural Heritage Survey Significance Ratings**

| Rating Level                                     | Description   |
|--|---|
| A: Properties of Highest Importance              | This designation applies to properties considered clearly eligible for individual National Register and City Landmark designation. Such properties consist of outstanding examples of an important style, type, or convention, or intimately associated with a person, organization, event, or historical pattern of extreme importance at the local level or of major importance at the state or national level.   |
| B: Properties of Major Importance                | These are properties of major historical or architectural value but not sufficiently important to be rated "A". Most are considered individually eligible for the National Register, but some may be marginal candidates. All are considered eligible for City Landmark designation and consist of especially fine examples of an important type, style, or convention, or intimately associated with a person, organization, event, or historical pattern of major importance at the local level or of moderate importance at the state or national level. |
| C: Properties of Secondary Importance            | These are properties that have sufficient visual/architectural or historical value to warrant recognition but do not appear individually eligible for the National Register. Some may be eligible as City Landmarks and are superior or visually important examples of a particular type, style, or convention, and include most pre-1906 properties  |
| D: Properties of Minor Importance                | These are properties which are not individually distinctive but are typical or representative examples of an important type, style, convention, or historical pattern. The great majority of pre-1946 properties are in this category.  |
| E, F, or *: Properties of No Particular Interest | Properties that are less than 45 years old or modernized.   |
| District Status                                  | Description   |
| 1  | A property in an API or National Register-quality district. An API is a historically or visually cohesive area or property group identified by the OCHS which usually contains a high proportion of individual properties with ratings of "C" or higher.  |
| 2  | A property in an Area of Secondary Importance (ASI) or a district of local significance. An ASI is similar to an API except that an ASI does not appear eligible for the National Register.   |
| 3  | A property not within a historic district.  |

Note: Properties with ratings of "C" or higher or are contributors to or potential contributors to an API or ASI are considered Potential Designated Historic Properties (PDHP) that may warrant consideration for preservation by the City. The OCHS has assigned some properties a contingency rating, indicated by a lower-case letter. A contingency rating is a potential rating under some condition, such as "if restored" or "when older" or "with more information."

Source: City of Oakland, 1994. *Historic Preservation Element*.

The HPE also establishes the following policy and action with respect to historical resources under CEQA:

- Policy 3.8: For the purposes of environmental review under CEQA, the following properties will constitute the City of Oakland's Local Register:

- All “Designated Historic Properties,” i.e., those properties that are City Landmarks, which contribute to or potentially contribute to Preservation Districts, and Heritage Properties;
- Those “Potential Designated Historic Properties” that have an existing rating of “A” or “B” or are located within an “Area of Primary Importance;”
- Until complete implementation of Action 2.1.2 (Redesignation), the “Local Register” will also include the following designated properties: Oakland Landmarks, S-7 Preservation Combining Zone properties, and Preservation Study List properties.
- Action 3.8.1: Include historic preservation impacts in City’s environmental review regulations. Measures appropriate to mitigate significant effects to a historical resource may include one or more of the following measures depending on the extent of the proposed addition or alteration:
  - Modification of the project design to avoid adversely affecting the character-defining elements of the property;
  - Relocation of the affected historical resource to a location consistent with its historical or architectural character.

If the above measures are not feasible, then other measures may be considered including, but not limited to the following:

- Modification of the project design to include restoration of the remaining historic character of the property;
- Modification of the project design to incorporate or replicate elements of the building’s original architectural design;
- Salvage and preservation of significant features and materials of the structure in a local museum or within the new project;
- Measures to protect the historical resource from effects of on-site or other construction activities;
- Documentation in a Historic American Buildings Survey report or other appropriate format: photographs, oral history, video, etc.;
- Placement of a plaque, commemorative marker, or artistic or interpretive display on the site providing information on the historical significance of the resource;
- Contribution to a Façade Improvement Fund, the Historic Preservation Revolving Loan Fund, the OCHS, or other program appropriate to the character of the resource.

The HPE includes other policies that seek to encourage the preservation of Oakland’s significant historical resources within the context of balanced development and growth. These policies are presented below.

- Policy 3.1: Avoid or Minimize Adverse Historic Preservation Impacts Related to Discretionary City Actions. The City will make all reasonable efforts to avoid or minimize adverse effects on the Character-Defining Elements of existing or Potential Designated Historic Properties which could result from private or public projects requiring discretionary actions.
- Policy 3.4: City Acquisition of Historic Preservation Where Necessary. Where all other means of preservation have been exhausted, the City will consider acquiring, by eminent domain if necessary, existing or Potential Designated Historic Properties.
- Policy 3.5: Historic Preservation and Discretionary Permit Approvals. For any project involving the complete demolition of Heritage Properties or Potential Designated Historic Properties requiring discretionary City permits, the City will make a finding that: 1) the design quality of the proposed

project is at least equal to that of the original structure and is compatible with the character of the neighborhood; or 2) the public benefits of the proposed project outweigh the benefit of retaining the original structure; or 3) the existing design is undistinguished and does not warrant retention and the proposed design is compatible with the character of the neighborhood.

- **Policy 3.7:** Property Relocation Rather than Demolition. As a condition of approval for all discretionary projects involving demolition of existing or Potential Designated Historic Properties, the City will normally require that reasonable efforts be made to relocate the properties to an acceptable site.

Although the HPE focuses primarily on built environment resources, prehistoric and historical archaeological resources are considered under the following policy:

- **Policy 4.1:** Archaeological Resources. To protect significant archaeological resources, the City will take special measures for discretionary projects involving ground disturbances located in archaeologically sensitive areas. This policy entails that mitigation measures are typically incorporated into the project as part of the environmental review process, which can include a surface reconnaissance by an archaeologist to identify archaeological deposits; monitoring of ground disturbance during construction to identify archaeological resources and stopping work if necessary to provide recommendations for the treatment of uncovered archaeological materials; and performing limited pre-construction archaeological excavations to determine whether archaeological materials are present.

**(4) City of Oakland Standard Conditions of Approval.** The City's Standard Conditions of Approval (SCA) relevant to this impact topic are listed below for reference. The Conditions of Approval will be adopted as requirements of the proposed project if the project is approved by the City. In addition to the SCAs listed below, SCA NOI-7 addresses vibration impacts adjacent to historic structures and requires preparation of a Vibration Analysis prior to issuance of demolition, grading, or building permits. This SCA is further described in Section IV.G, Noise.

**SCA CUL-1: Archaeological Resources.** *Ongoing throughout demolition, grading, and/or construction*

- a) Pursuant to *CEQA Guidelines* section 15064.5 (f), "provisions for historical or unique archaeological resources accidentally discovered during construction" should be instituted. Therefore, in the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the project applicant and/or lead agency shall consult with a qualified archaeologist or paleontologist to assess the significance of the find. If any find is determined to be significant, representatives of the project proponent and/or lead agency and the qualified archaeologist would meet to determine the appropriate avoidance measures or other appropriate measure, with the ultimate determination to be made by the City of Oakland. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report prepared by the qualified archaeologist according to current professional standards.
- b) In considering any suggested measure proposed by the consulting archaeologist in order to mitigate impacts to historical resources or unique archaeological resources, the project applicant shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while measure for historical resources or unique archaeological resources is carried out.

- c) Should an archaeological artifact or feature be discovered on-site during project construction, all activities within a 50-foot radius of the find would be halted until the findings can be fully investigated by a qualified archaeologist to evaluate the find and assess the significance of the find according to the CEQA definition of a historical or unique archaeological resource. If the deposit is determined to be significant, the project applicant and the qualified archaeologist shall meet to determine the appropriate avoidance measures or other appropriate measure, subject to approval by the City of Oakland, which shall assure implementation of appropriate measure measures recommended by the archaeologist. Should archaeologically-significant materials be recovered, the qualified archaeologist shall recommend appropriate analysis and treatment, and shall prepare a report on the findings for submittal to the Northwest Information Center.

The following additional SCAs (SCA CUL-1a through SCA CUL-1d) are added to further implement SCA CUL-1, Archaeological Resources, to decrease the potential for adverse damage of archaeological resources, paleontological resources and human remains during construction.

To implement the additional SCAs, a project applicant may choose to either implement SCA CUL-1a (Intensive Pre-Construction Study) or SCA CUL-1d (Construction ALERT Sheet). If in either case a high potential presence of historic period archaeological resources on the project site is indicated, or a potential resource is discovered, the project applicant shall also implement:

- SCA CUL-1b (Construction-Period Monitoring); and
- SCA CUL-1c (Avoidance and/or Find Recovery).

If in either case a high potential presence of historic-period archaeological resources is not indicated, or a potential resource is not discovered, SCA CUL-1 shall apply and be adequate to decrease the potential for adverse damage of archaeological resources, paleontological resources and human remains during construction.

SCA CUL-1a through SCA CUL-1d are detailed as follows:

**SCA CUL-1a: Intensive Pre-Construction Study.** *Prior to demolition, grading and/or construction.* The project applicant, upon approval from the City Planning Department, may choose to complete a site-specific, intensive archaeological resources study prior to soil-disturbing activities occurring on the project site. The purpose of the site-specific, intensive archaeological resources study is to identify early the potential presence of history-period archaeological resources on the project site. If that approach is selected, the study shall be conducted by a qualified archaeologist approved by the City Planning Department.

If prepared, at a minimum, the study shall include:

- An intensive cultural resources study of the project site, including subsurface presence/absence studies, of the project site. Field studies conducted by the approved archaeologist(s) may include, but are not limited to, auguring and other common methods used to identify the presence of archaeological resources;
- A report disseminating the results of this research;
- Recommendations for any additional measures that could be necessary to mitigate any adverse impacts to recorded and/or inadvertently discovered cultural resources.

If the results of the study indicate a high potential presence of historic-period archaeological resources on the project site, or a potential resource is discovered, the project applicant shall hire a qualified archaeologist to monitor any ground disturbing activities on the project site during construction (see SCA CUL-1b, Construction-Period Monitoring, below), implement avoidance and/or find recovery measures (see SCA CUL-1c, Avoidance and/or Find Recovery, below), and prepare an ALERT Sheet that details what could potentially be found at the project site (see SCA CUL-1d, Construction ALERT Sheet, below). If no potential resources are discovered during the preconstruction study, SCA CUL-1, Archaeological Resources, shall apply and be adequate to reduce any potentially significant impact to less-than-significant.

**SCA CUL-1b: Construction-Period Monitoring.** *Ongoing throughout demolition, grading and/or construction.* Archaeological monitoring would include briefing construction personnel about the type of artifacts that may be present (as referenced in the ALERT Sheet, require per SCA CUL-1d, Construction ALERT Sheet, below) and the procedures to follow if any are encountered, field recording and sampling in accordance with the Secretary of Interior's *Standards and Guidelines for Archaeological Documentation*, notifying the appropriate officials if human remains or cultural resources are discovered, or preparing a report to document negative findings after construction is completed. If a significant archaeological resource is discovered during the monitoring activities, adherence to SCA CUL-1c, Avoidance and/or Find Recovery, discussed below), would be required to reduce the impact to less than significant. The project applicant shall hire a qualified archaeologist to monitor all ground-disturbing activities on the project site throughout construction.

**SCA CUL-1c: Avoidance and/or Find Recovery.** *Ongoing and throughout demolition, grading and/or construction.*

If a significant archaeological resource is present that could be adversely impacted by the proposed project, the project applicant of the specific project site shall either:

- Stop work and redesign the proposed project to avoid any adverse impacts on significant archaeological resource(s); or,
- If avoidance is determined infeasible by the City, design and implement an Archaeological Research Design and Treatment Plan (ARDTP). The project applicant shall hire a qualified archaeologist who shall prepare a draft ARDTP that shall be submitted to the City Planning Department for review and approval. The ARDTP is required to identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The ARDTP shall identify the scientific/historic research questions applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. The ARDTP shall include the analysis and specify the curation and storage methods. Data recovery, in general, shall be limited to the portions of the archaeological resource that could be impacted by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical. The project applicant shall implement the ARDTP. Because the intent of the ARDTP is to save as much of the archaeological resource as possible, including moving the resource, if feasible, preparation and implementation of the ARDTP would reduce the potential adverse impact to less than significant.

**SCA CUL-1d: Construction ALERT Sheet.** *Prior to and during all subsurface construction activities for the Project.*

The project applicant, upon approval from the City Planning Department, may choose to prepare a construction ALERT sheet prior to soil-disturbing activities occurring on the project site, instead of conducting site-specific, intensive archaeological resources pursuant to SCA CUL-1a, above. The project applicant shall submit for review and approval by the City prior to subsurface construction activity an "ALERT" sheet prepared by a qualified archaeologist with visuals that depict each type of artifact that could be encountered on the project site. Training by the qualified archaeologist shall be provided to the project's prime contractor; any project

subcontractor firms (including demolition, excavation, grading, foundation, and pile driving); and/or utilities firm involved in soil-disturbing activities within the project site. The ALERT sheet shall state, in addition to the basic measures of SCA CUL-1, that in the event of discovery of the following cultural materials, all work must be stopped in the area and the City's Environmental Review Officer contacted to evaluate the find: concentrations of shellfish remains; evidence of fire (ashes, charcoal, burnt earth, firecracked rocks); concentrations of bones; recognizable Native American artifacts (arrowheads, shell beads, stone mortars [bowls], humanly shaped rock); building foundation remains; trash pits, privies (outhouse holes); floor remains; wells; concentrations of bottles, broken dishes, shoes, buttons, cut animal bones, hardware, household items, barrels, etc.; thick layers of burned building debris (charcoal, nails, fused glass, burned plaster, burned dishes); wood structural remains (building, ship, wharf); clay roof/floor tiles; stone walls or footings; or gravestones.

Prior to any soil-disturbing activities, each contractor shall be responsible for ensuring that the ALERT sheet is circulated to all field personnel, including machine operators, field crew, pile drivers, and supervisory personnel. If the project applicant chooses to implement SCA CUL-1d, Construction ALERT Sheet, and a potential resource is discovered on the project site during ground disturbing activities during construction, the project applicant shall hire a qualified archaeologist to monitor any ground disturbing activities on the project site during construction (see SCA CUL-1b, Construction-Period Monitoring, above), implement avoidance and/or find recovery measures (see SCA CUL-1c, Avoidance and/or Find Recovery, above), and prepare an updated ALERT Sheet that addresses the potential resource(s) and other possible resources based on the discovered find found on the project site. If no potential resource(s) are discovered during ground disturbing activities during construction pursuant to the construction ALERT sheet, SCA CUL-1, Archaeological Resources, shall apply and be adequate to reduce any potentially significant impact to less than significant.

**SCA CUL-2: Human Remains.** *Ongoing throughout demolition, grading, and/or construction.* In the event that human skeletal remains are uncovered at the project site during construction or ground-breaking activities, all work shall immediately halt and the Alameda County Coroner shall be contacted to evaluate the remains, and following the procedures and protocols pursuant to Section 15064.5 (e)(1) of the CEQA Guidelines. If the County Coroner determines that the remains are Native American, the City shall contact the California Native American Heritage Commission (NAHC), pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, and all excavation and site preparation activities shall cease within a 50-foot radius of the find until appropriate arrangements are made. If the agencies determine that avoidance is not feasible, then an alternative plan shall be prepared with specific steps and timeframe required to resume construction activities. Monitoring, data recovery, determination of significance and avoidance measures (if applicable) shall be completed expeditiously.

**SCA CUL-3: Paleontological Resources.** *Ongoing throughout demolition, grading, and/or construction.* In the event of an unanticipated discovery of a paleontological resource during construction, excavations within 50 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist (per Society of Vertebrate Paleontology standards (SVP 1995,1996)). The qualified paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in Section 15064.5 of the CEQA Guidelines. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the City determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important, and such plan shall be implemented. The plan shall be submitted to the City for review and approval.

**SCA CUL-4: Compliance with Policy 3.7 of the Historic Preservation Element (Property Relocation Rather than Demolition).** *Prior to issuance of a demolition permit.* The project applicant shall make a good faith effort to relocate the buildings located at 5204 Martin Luther King Jr. Way to a site acceptable to the Planning and Zoning Division and the Oakland Cultural Heritage Survey. Good faith efforts include, at a minimum, the following:



- a) Advertising the availability of the building by: (1) posting of large visible signs (such as banners, at a minimum of 3'x 6' size or larger) at the site; (2) placement of advertisements in Bay Area news media acceptable to the City; and (3) contacting neighborhood associations and for-profit and not-for-profit housing and preservation organizations;
- b) Maintaining a log of all the good faith efforts and submitting that along with photos of the subject building showing the large signs (banners) to the Planning and Zoning Division;
- c) Maintaining the signs and advertising in place for a minimum of 90 days; and
- d) Making the building available at no or nominal cost (the amount to be reviewed by the Oakland Cultural Heritage Survey) until removal is necessary for construction of a replacement project, but in no case for less than a period of 90 days after such advertisement.

**(5) Oakland Municipal Code.** The City has adopted required findings for demolition of historical buildings (City of Oakland Municipal Code 17.136.075). The ordinance identifies three categories of properties, one of which is relevant to the current project, that are associated with a series of findings that must be met prior to acceptance of a proposal to demolish a historical building or a building within a historic district. A proposal to demolish or remove a C-rated building or a building that contributes to an ASI—as determined by the OCHS—would be granted only if the proposal conforms to appropriate design review criteria and any of the criteria below.

- **Finding 1:** The design quality of the proposed replacement project is at least equal to that of the original structure and the proposed replacement project is compatible with the character of the neighborhood; or
- **Finding 2:** The public benefits of the proposed replacement project outweigh the benefit of retaining the original structure and the proposed replacement project is compatible with the character of the neighborhood.

**(6) Health and Safety Code: Human Remains.** The California Health and Safety Code (HSC) Section 7050.5 states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

**(7) Public Resources Code: Cultural and Paleontological Resources.** California Public Resources Code (PRC) Section 5097.5 provides for the protection of cultural and paleontological resources. This PRC section prohibits the removal, destruction, injury, or defacement of archaeological and paleontological features on any lands under the jurisdiction of State or local authorities.

**d. Project Site Cultural Resources.** The background research and field survey conducted for the proposed project identified buildings 45 years old and older, and assessed the sensitivity for archaeological resources – including Native American human remains – and paleontological resources.

(1) **Built-Environment Resources.** Eighteen buildings 45 years old or older were identified and evaluated in the project site for their significance under CEQA (**Figures IV.C-1, IV.C-2**).<sup>19 20</sup> These consist of four CHRCO buildings with an initial construction date range of 1926-1962, and 14 residential and commercial properties constructed 1906-1922. Buildings evaluated in the project site for their historical significance under CEQA are summarized below and in **Table IV.C-2**.

**Children's Hospital & Research Center Oakland (CHRCO).** The four buildings on the CHRCO campus that are over 45 years old are the A/B Wing, the B/C Wing, the Ford Diagnostic and Treatment Center, and the Bruce Lyon Memorial Research Center. Only the A/B Wing is considered a "historical resource" under CEQA due to a City property rating of "B3," indicating it is a property of "major importance" and is not a contributor to a historic district. B-rated properties are eligible for listing in the Local Register and are considered "historical resources" under CEQA. The other three buildings are not historical resources under CEQA as they 1) are not eligible for listing in the California Register; 2) are not "A-" or "B-" rated properties under the City's HPE evaluation criteria or contributors to a historic district that would warrant listing in the Local Register; 3) have not been identified as significant (e.g., rated 1-5) in a historical resource survey recorded on Department of Parks and Recreation Form 523; and 4) have not been determined to be historically or culturally significant by the City Council.

In addition, the courtyard located between the A/B and B/C Wings and a magnolia tree planted around 1860 within the courtyard are character-defining features of the A/B Wing.<sup>21 22</sup> The magnolia tree contributed to the siting of the courtyard and hence the siting and design of the A/B Wing.

In addition, the CHRCO campus includes several buildings and a structure that are less than 45 years old that were evaluated for the project: the Central Plant/West Site Plant, the Patient Tower, the cafeteria, the helistop, the Outpatient Center, the parking garage, the Bruce Lyon Memorial Research Center Addition, the cardiac catheterization lab, and various portable buildings. These buildings and helistop were constructed between 1979 and 2000 and are too recent to be eligible for listing in the California Register, nor do they otherwise qualify as historical resources under CEQA.

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<sup>19</sup> Page & Turnbull, 2013. *Oakland Children's Hospital and Research Center Historic Resource Evaluation Part I*. August 5.

<sup>20</sup> Page & Turnbull, 2014. California Department of Parks and Recreation Form 523 series record, 55<sup>th</sup> and Dover Residential District. May 5.

<sup>21</sup> Page & Turnbull, 2014. *Oakland Children's Hospital and Research Center Historic Resource Evaluation Part II: Proposed Project Analysis*. July 29.

<sup>22</sup> Page & Turnbull, 2013. *Historic Resource Evaluation Part I Supplement: Children's Hospital Oakland Magnolia Tree and Courtyard*. November 5.





A/B WING, VIEW SOUTH  
CONSTRUCTED 1926, 1962



B/C WING, VIEW EAST  
CONSTRUCTED 1946, 1958, 1987



FORD DIAGNOSTIC AND TREATMENT CENTER, VIEW NORTH  
CONSTRUCTED 1962, 1974



BRUCE LYON MEMORIAL RESEARCH CENTER, VIEW  
NORTHWEST  
CONSTRUCTED 1958, 1972



682 52nd STREET, VIEW NORTH  
CONSTRUCTED 1922



688 52nd STREET, VIEW NORTH  
CONSTRUCTED 1922



720 52nd STREET, VIEW NORTH  
CONSTRUCTED 1907



670 53rd STREET, VIEW NORTH  
CONSTRUCTED 1909



671 53rd STREET, VIEW SOUTH  
CONSTRUCTED 1906



675 53rd STREET, VIEW SOUTH  
CONSTRUCTED 1908



677-679 53rd STREET, VIEW SOUTH  
CONSTRUCTED 1921



685-689 53rd STREET, VIEW SOUTH  
CONSTRUCTED 1914



707 53rd STREET, VIEW SOUTH  
CONSTRUCTED 1907



715 53rd STREET, VIEW SOUTH  
CONSTRUCTED 1906



5203 DOVER STREET, VIEW WEST  
CONSTRUCTED 1906



5212-5214 DOVER STREET, VIEW NORTH  
CONSTRUCTED 1910



5225 DOVER STREET, VIEW WEST  
CONSTRUCTED 1908



5204 MARTIN LUTHER KING JR. WAY, VIEW EAST  
CONSTRUCTED 1920s



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**Table IV.C-2: Summary of Buildings 45 Years of Age or Older Evaluated in the Project Area**

| Description   | Identifier on Figures IV.C-1, -2 | Date(s) of Construction | Historic District Contributor? | CEQA Historical Resource? |
|---|----------------------------------|-------------------------|--------------------------------|---------------------------|
| <b><i>Non-historical buildings over 45 years of age</i></b>       |                                  |                         |                                |                           |
| B/C Wing (Children's Hospital)                                    | 1                                | 1946, 1958, 1987        | No                             | No                        |
| Ford Diagnostic and Treatment Center                              | 2                                | 1962, 1974              | No                             | No                        |
| Bruce Lyon Memorial Research Center                               | 3                                | 1958, 1972              | No                             | No                        |
| 682 52 <sup>nd</sup> Street (Craftsman SFR)                       | 4                                | 1922                    | No                             | No                        |
| 688 52 <sup>nd</sup> Street (Craftsman SFR)                       | 5                                | 1922                    | No                             | No                        |
| 677-679 53 <sup>rd</sup> Street (Classical Revival Residence)     | 6                                | 1921                    | No                             | No                        |
| 685-689 53 <sup>rd</sup> Street (Mixed-use Commercial)            | 7                                | c. 1914                 | No                             | No                        |
| 5212-5214 Dover Street (Altered, Multi-family Residence)          | 8                                | 1910                    | No                             | No                        |
| 5204 Martin Luther King Jr. Way (Mediterranean Revival Residence) | 9                                | 1920s                   | No                             | No                        |
| <b><i>Historical buildings over 45 years of age</i></b>           |                                  |                         |                                |                           |
| A/B Wing (Baby Hospital)  | A                                | 1926, 1962              | No                             | Yes                       |
| 720 52 <sup>nd</sup> Street (Simple Bungalow SFR)                 | B                                | 1907                    | Yes                            | Yes                       |
| 670 53 <sup>rd</sup> Street (Simple Bungalow SFR)                 | C                                | 1909                    | Yes                            | Yes                       |
| 671 53 <sup>rd</sup> Street (Simple Bungalow SFR)                 | D                                | 1906                    | Yes                            | Yes                       |
| 675 53 <sup>rd</sup> Street (Simple Bungalow SFR)                 | E                                | 1908                    | Yes                            | Yes                       |
| 707 53 <sup>rd</sup> Street (Shingle Style SFR)                   | F                                | 1907                    | Yes                            | Yes                       |
| 715 53 <sup>rd</sup> Street (Craftsman SFR)                       | G                                | c. 1906                 | Yes                            | Yes                       |
| 5203 Dover Street (Simple Bungalow SFR)                           | H                                | c. 1906                 | Yes                            | Yes                       |
| 5225 Dover Street (Craftsman Residence)                           | I                                | 1908                    | Yes                            | Yes                       |

Source: Page &amp; Turnbull, May 5, 2014

Buildings over 45 years old on the CHRCO campus are described below.

- **A/B Wing.** The A/B Wing (historically referred to as the “Baby Hospital”) was constructed in 1926 and is the oldest extant building on the 11-acre CHRCO campus. The A/B Wing was designed by architect Edward W. Cannon as a two- and three-story, L-shaped, Northern Italian Renaissance style building. It replaced the original Baby Hospital on the CHRCO campus, originally housed in a Queen Anne-style building known as the McElrath mansion. The primary entrance to the building is at the center of the south façade, at the ground floor of a two-story brick addition that was constructed in 1962.

The historical evaluation conducted for the project concluded that the A/B Wing is significant: 1) under California Register Criterion 1 (events) as the earliest purpose-built hospital for children in the East Bay, for its unique role in providing medical care to children, and as a teaching hospital; and 2) Criterion 3 as a representative example of early 20<sup>th</sup> century hospital design trends (i.e., through the use of narrow, linear form; brick and terracotta fireproof materials; and maximum exposure to sunlight), and for possessing high artistic values, including fluted columns with capitals that feature acanthus leaves, urns, fleur de lys, cherubs heads, griffins, and various ornamentation. In addition to its architectural elements and design, other character-defining features of the A/B Wing include the spatial openness of the adjacent courtyard and the magnolia tree to the west of the building, planted around 1860 by female members of the Alden family. Due to compromised integrity of setting and feeling from its period of significance (1926), however, the A/B

Wing is not eligible for listing in the California Register. When evaluated within the context of the City's 14 evaluative criteria,<sup>23</sup> however, the property has a rating of "B3", indicating it is a property of "major importance" and is not a contributor to a historic district. B-rated properties are eligible for listing in the Local Register and are considered "historical resources" under CEQA.

- **B/C Wing.** The B/C Wing was constructed in 1946 to replace the McElrath mansion, which housed the original Baby Hospital. The McElrath mansion was demolished to accommodate the B/C Wing, although a magnolia tree planted around 1860 once associated with the mansion was preserved and is adjacent to the east façade of the B/C Wing. The B/C Wing was designed by architects Douglas D. Stone and Louis B. Mulloy as an L-shaped, two-story building adjacent to the A/B Wing. Additions were made to the B/C Wing in 1958 for a third story to the east-west axis of the building and a one-story addition in 1987 that enclosed a brick porch on the east façade.

A historical evaluation of the B/C Wing indicates that it is not a historical resource under CEQA.

- **Ford Diagnostic Treatment Center.** The Ford Diagnostic and Treatment Center (Center) was constructed in 1962 and designed by the firm Stone, Marraccini, and Patterson. The Center is a modern, reinforced concrete building roughly square in plan and is connected to the A/B Wing by a small projection from the south façade. Originally two stories in height, a third story was added to the Center in 1974.

A historical evaluation of the Center indicates that it is not a historical resource under CEQA.

- **Bruce Lyon Memorial Research Center.** The Bruce Lyon Memorial Research Center (Research Center) was constructed in 1958 by the firm Stone, Marraccini, and Patterson. The Research Center is an International style building with stack-bond brick cladding. Originally one story in height, a second story, stucco-clad addition was added to the Research Center in 1972. The second story is supported by concrete posts and projects in volume at all facades beyond the footprint of the original building.

A historical evaluation of the Research Center indicates that it is not a historical resource under CEQA.

**Residential and Commercial Buildings.** The project site includes 14 residential and commercial buildings that are over 45 years old. These consist of single- and multi-family residences at 682, 688, and 720 52<sup>nd</sup> Street; 670, 671, 675, 677-79, 707, and 715 53<sup>rd</sup> Street; 5203, 5212-14, and 5225 Dover Street; and 5204 Martin Luther King Jr. Way; and a commercial building at 685-89 53<sup>rd</sup> Street. OCHS evaluated these buildings in 1996 and identified these to be within the 55<sup>th</sup> and Dover Residential District (Residential District), an ASI. The present survey update was completed for the CHRCO project to determine the Residential District's eligibility for listing in the California Register.<sup>24</sup> This updated evaluation identified 143 properties within the Residential District, which is roughly bounded between 55<sup>th</sup> and 56<sup>th</sup> Streets on the north, 52<sup>nd</sup> Street on the south, Martin Luther

<sup>23</sup> As defined in Appendix D of the City's Historic Preservation Element.

<sup>24</sup> Page & Turnbull, Inc., 2014. California Department of Parks and Recreation Form 523 series record, 55<sup>th</sup> and Dover Residential District. May 5.

King Jr. Way on the west, and on the east and southeast by Shattuck Avenue and State Route 24 overpass.

The Residential District's predominant architectural styles are Craftsman and Colonial Revival. Most buildings in the Residential District are wood frame, one-and-a-half to two-story residences clad in wood clapboard siding, wood shingles, or stucco. In the City's opinion, the Residential District is eligible for listing in the California Register due to its association with Key Route System Vice President E.A. Heron. The Key Route System had a profound effect on population growth and residential development in the East Bay during the early 20<sup>th</sup> century. The Residential District is included within a tract purchased by Mr. Heron in 1906, and this resource, therefore, is directly associated with an individual responsible for establishing the Key Route System. The connection between real estate subdivision and Key Route expansion that is illustrated in the Residential District—specifically, ownership of this land by Key Route System Vice President E.A. Heron—was an important development pattern in Oakland in the first decade of the 20<sup>th</sup> century. The Residential District retains sufficient integrity to convey its historical importance for its period of significance (1906-1913, i.e., when the land was purchased and developed by E.A. Heron), and is, therefore, a historical resource under CEQA.

Eight buildings within the project site are contributors to the Residential District; six buildings within the project site do not contribute to the District due to a lack of integrity or association with the resource's period of significance, 1906-1913 (**Table IV.C-1**). While not individually eligible for listing in the California Register, due to their association with the Residential District, the eight Residential District contributors in the project site are considered historical resources under CEQA.

Residential buildings over 45 years old within the project site are described below. The buildings are grouped below according to whether they are “contributors” or “non-contributors” to the Residential District.

#### ***Contributors to the 55<sup>th</sup> and Dover Residential District***

None of the contributors to the Residential District within the project site appear individually eligible for listing in the California Register or Oakland's Local Register; however, these buildings are “historical resources” under CEQA as they contribute to the California Register-eligible Residential District.<sup>25</sup> The eight residential buildings within the project site that contribute to the Residential District consist of:

- **720 52<sup>nd</sup> Street.** Built in 1907, 720 52<sup>nd</sup> Street is a one-story, wood-frame, single-family residence designed in a modified Simple Bungalow style. The rectangular building, clad in wood clapboard siding, is capped by a hip roof covered with asphalt shingles.
- **670 53<sup>rd</sup> Street.** Built in 1909, 670 53<sup>rd</sup> Street is a one-story, wood-frame, single-family residence designed in the Simple Bungalow style. The rectangular building, clad in wood shingles, is capped by a hip roof clad in asphalt shingles.

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<sup>25</sup> Ibid.

- **671 53<sup>rd</sup> Street.** Built in 1906, 671 53<sup>rd</sup> Street is a one-story, wood-frame residence designed in the Simple Bungalow style. The rectangular building, clad in wood shingles, is capped by a hip roof clad in asphalt shingles.
- **675 53<sup>rd</sup> Street.** Built in 1908, 675 53<sup>rd</sup> Street is a one-story over raised basement, wood-frame, single-family residence designed in the Simple Bungalow style. The rectangular building, clad in textured stucco, is capped by a hip roof covered with asphalt shingles.
- **707 53<sup>rd</sup> Street.** Built in 1907, 707 53<sup>rd</sup> Street is a two-story, wood-frame residence designed in the Shingle style. The rectangular building, clad in wood shingles, is capped by a steep hip roof covered with asphalt shingles and features large hip-roof dormers and flared eaves.
- **715 53<sup>rd</sup> Street.** Built c. 1906, 715 53<sup>rd</sup> Street is a one-story, wood-frame residence designed in the Craftsman style. The rectangular building, clad in wood clapboard siding, is capped by a hip roof clad in asphalt shingles.
- **5203 Dover Street.** Built c. 1906, 5203 Dover Street is a one-story, wood-frame, single-family residence designed in the Simple Bungalow style with Classical Revival detail. The rectangular building, clad in wood channel-drop and clapboard siding, is capped by a hip roof covered with asphalt shingles.
- **5225 Dover Street.** Built in 1908, 5225 Dover Street is a two-story over exposed basement, wood-frame residence designed in Craftsman style. The rectangular building is clad in asbestos shingle siding and capped with a double cross-gable roof.

Although not individually eligible for the California Register, the above residences are contributors to the Historic District and are therefore considered to be historical resources under CEQA.

#### *Non-Contributors to the 55<sup>th</sup> and Dover Residential District*

The buildings listed below within the project site are not individually eligible for the California Register or Oakland's Local Register, nor do they otherwise contribute to the Residential District or qualify as historical resources under CEQA. The six residential buildings within the project site that do not contribute to the Residential District consist of:

- **682 52<sup>nd</sup> Street.** Built in 1922, 682 52<sup>nd</sup> Street is a one-story, wood-frame, single-family residence designed in the Craftsman style. The rectangular building is clad in stucco on the primary façade and wood clapboard siding on the secondary facades.
- **688 52<sup>nd</sup> Street.** Built in 1922, 688 52<sup>nd</sup> Street is a one-story, wood frame, single family residence designed in the Craftsman style. The rectangular building, clad in smooth stucco, is capped by a gable roof covered with asphalt shingles.
- **677-679 53<sup>rd</sup> Street.** Built in 1921, 677-679 53<sup>rd</sup> Street is a two-story, wood-frame, two-unit residence in a simplified Classical Revival style. The rectangular building, clad in stucco, is capped by a hip roof clad in asphalt shingles.
- **685-689 53<sup>rd</sup> Street.** Built c. 1914, 685-689 53<sup>rd</sup> Street is a one-story, wood-frame, mixed-use building with no discernible style. The rectangular building, clad in smooth stucco, is capped by a flat roof. Although this building may fall within the period of significance of the District (1906-1913), the building lacks integrity of design, materials, workmanship, and feeling as a mixed-use building from the 1910s.



- **5212-5214 Dover Street.** Built in 1910, 5212-5214 Dover Street is a two-story, wood-frame, multi-family residence that has been altered from its original style. The rectangular building is clad in wood clapboard siding on the primary façade and stucco on the secondary facades.
- **5204 Martin Luther King Jr. Way.** Estimated to have been built during the 1920s, 5204 Martin Luther King Jr. Way is a two-story, wood frame residence set over an internal garage. It is designed in the Mediterranean Revival style. The rectangular building, clad in smooth stucco, is capped by a cross-gable roof clad with red asphalt shingles and red tile decoration at the gable ends. Although the OCHS identified this residence as a contributor to the Residential District, an ASI, the historical resources survey and evaluation completed for this project determined the building does not fall within the district's period of significance (1906-1913), and it is outside of the boundary of the Residential District, as defined for CEQA purposes.<sup>26</sup>

(2) **Archaeological Resources and Human Remains.** No archaeological resources or associated Native American human remains are recorded in the project site. The closest recorded archaeological site to the project is P-01-010600, a prehistoric site where marine shell artifacts were identified on the surface. This resource is within a 1/2-mile of the project site.

A Caltrans-sponsored archaeological sensitivity assessment conducted for the East Bay, from the bayshore to the Berkeley Hills ridge top and between Strawberry and Sausal Creeks, identified over 20 recorded prehistoric archaeological sites.<sup>27</sup> The sensitivity assessment identified most recorded prehistoric sites to be located on the alluvial plain, from the bayshore to the foot of the Berkeley Hills, and consist of shell middens or mounds with and without human burials. The presence of these prehistoric archaeological deposits indicate Native American habitation beginning in the East Bay by at least the Middle Holocene (Middle Archaic Period), as documented at the West Berkeley (CA-ALA-307) and Ellis Landing (CA-CCO-295) shellmounds.<sup>28</sup>

The Caltrans study included a predictive model, based on environmental variables, to assess the sensitivity of locations for containing subsurface prehistoric archaeological deposits. Locations of high sensitivity for prehistoric archaeological deposits and associated human remains include areas adjacent to inland creeks. Historically, Temescal Creek flowed eastward toward the bayshore at the southern corner of the project site, and this area is of high sensitivity for prehistoric archaeological deposits.<sup>29</sup>

(3) **Paleontological Resources.** No paleontological resources (fossils) are recorded in the project site. A fossil locality search conducted for the project by the UCMP on January 13, 2014,

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<sup>26</sup> Page & Turnbull, Inc., 2014. California Department of Parks and Recreation Form 523 series record, 55<sup>th</sup> and Dover Residential District. May 5.

<sup>27</sup> California Department of Transportation, 2005. District 5. *Archaeological Survey Report, BART Seismic Retrofit Project, Berkeley Hills Tunnel to Montgomery Street Station.*

<sup>28</sup> Milliken, Randall, et al., 2007:115. Punctuated Culture Change in the San Francisco Bay Area. In *California Prehistory*, edited by Terry L. Jones and Kathryn A Klar, pp 99–124. Rowman and Littlefield Publishers, Inc, Lanham, Maryland.

<sup>29</sup> California Department of Transportation, 2005, op. cit.

however, identified 13 recorded vertebrate fossil localities within four miles of the project. Most of these fossils date from the Pleistocene (11,500 years B.P. to 2.6 million years B.P.) and include mammoth, bison, camel, and horse.

## 2. Impacts and Mitigation Measures

The following section describes potentially significant project impacts to cultural resources. This section first lists the criteria by which significance is determined, followed by a discussion of impacts.

**a. Criteria of Significance.** Implementation of the proposed project would have a significant impact on cultural resources if it would:

- (1) Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5. Specifically, substantial adverse changes include physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be “materially impaired.” The significance of a historical resource is “materially impaired” when a project demolishes or materially alters, in an adverse manner, those physical characteristics of the resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, a historical resource list. In the City of Oakland a historical resource is a property that is listed in or determined eligible for listing in the California Register of Historical Resources; a resource listed in Oakland’s Local Register of Historical Resources, unless the preponderance of evidence demonstrates that it is not historically or culturally significant; a resource identified as significant (e.g., rated 1-5) in a historical resource survey recorded on Department of Parks and Recreation Form 523, unless the preponderance of evidence demonstrates that it is not historically or culturally significant; or a resource that is determined by the City Council to be historically or culturally significant.
- (2) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5;
- (3) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- (4) Disturb any human remains, including those interred outside of formal cemeteries.

**b. Project Impacts.** The following section describes the project’s potential impacts to cultural resources. Potential impacts discussed below are differentiated between project Phase 1 and Phase 2, where applicable.

**(1) Historical Resources.** The proposed project would have a significant effect on the environment if it would cause a substantial adverse change in the significance of a historical resource as defined in *CEQA Guidelines* Section 15064.5. As described above in Project Site Cultural Resources (Section (d)(1)), the project site includes nine historical resources, consisting of the A/B Wing of the CHRCO and eight residential properties that are contributors to the Residential District. Project impacts to these historical resources include removal of the magnolia tree and courtyard adjacent to the A/B and B/C wings and new construction adjacent to the A/B Wing.

To assess the project's potential impacts to historical resources, the Rehabilitation Standards of the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, were applied to evaluate potential impacts on the A/B Wing and Residential District.<sup>30</sup> Under CEQA, a project that complies with the Rehabilitation Standards is considered to be mitigated to a level of less than a significant impact on a historical resource (*CEQA Guidelines* Section 15064.5(b)(3)). Projects that do not fully comply with the Rehabilitation Standards may or may not cause a substantial adverse change in the significance of a historical resource. The ten Rehabilitation Standards consist of:

- **Standard 1:** A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
- **Standard 2:** The historic character of a property will be retained and preserved. The removal of distinctive materials or alterations of features, spaces, and spatial relationships that characterize the property will be avoided.
- **Standard 3:** Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historical properties, will not be undertaken.
- **Standard 4:** Changes to a property that have acquired significance in their own right will be retained and preserved.
- **Standard 5:** Distinctive materials, features, finishes and construction techniques or examples of craftsmanship that characterize a property will be preserved.
- **Standard 6:** Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
- **Standard 7:** Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
- **Standard 8:** Archaeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.<sup>31</sup>
- **Standard 9:** New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale, proportion, and massing to protect the integrity of the property and environment.

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<sup>30</sup> Page & Turnbull, 2014. *Oakland Children's Hospital and Research Center Historic Resource Evaluation Part II: Proposed Project Analysis*. July 29.

<sup>31</sup> Archaeological sites may qualify as historical resources under CEQA (*CEQA Guidelines* Section 15064.5(c)). For purposes of the current analysis, potential impacts to archaeological sites are described under Archaeological Resources (Section 2(b)(2)).

- **Standard 10:** New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Based on an analysis of the project's compliance with the Rehabilitation Standards, it was determined that the project is not in compliance with Rehabilitation Standards 2, 9, and 10 due to impacts to the historic A/B Wing.<sup>32</sup> However, a project that is inconsistent with the Rehabilitation Standards would not necessarily have a significant impact on a historical resource, and such impacts are evaluated on a project-specific basis. Non-compliance with these Rehabilitation Standards is described below, followed by a discussion of specific Phase 1 and Phase 2 project impacts to historical resources.

**A/B Wing Rehabilitation Standards= Assessment.** The project is inconsistent with Rehabilitation Standards 2, 9, and 10 due to a loss of some of the A/B Wing's character-defining features and impacts to its spatial relationships, as summarized below. For a detailed discussion of those project actions that would be consistent with the Rehabilitation Standards, the reader should refer to the *Historic Resource Evaluation Part II: Proposed Project Analysis*, dated July 29, 2014 (Appendix B).

- **Standard 2:** The proposed project includes the removal of a magnolia tree planted around 1860 to the west of the future location of the A/B Wing. The magnolia tree may have contributed to the siting of the courtyard and the A/B Wing and is a supportive landscape feature that characterizes the A/B Wing. Due to the loss of this character-defining landscape feature, the proposed project is inconsistent with Rehabilitation Standard 2.
- **Standard 9:** The proposed project would not destroy any historic materials or features of the A/B Wing. The proposed project includes the removal of the magnolia tree, which has been identified as a character-defining supportive landscape feature of the A/B Wing. Therefore, the removal of the magnolia tree is inconsistent with Rehabilitation Standard 9. Demolition of the other features in the courtyard has no impact because these features are not historic.

The proposed project includes the construction of the five-story Patient Pavilion, which is to be connected to the Link Building and located west of the A/B Wing. The Patient Pavilion would have a curved footprint, slightly concave around the north/south axis of the A/B Wing. The east façade of the Patient Pavilion includes a concentration of façade ornamentation, including projecting window boxes with painted aluminum frames, painted aluminum spandrel panels, aluminum entry canopy, and aluminum cut-away signage. This ornament is different in theme, scale, color, material, and dimensional representation compared to the character-defining ornament of the A/B Wing, a concentration of which is at the solarium at the southern terminus of the north/south portion of the building, near the east façade of the Patient Pavilion. The concentration and style of decorative ornament of the Patient Pavilion façade, near the southern terminus of the A/B Wing, is not compatible with the historic style, materials, and ornament that characterize the A/B Wing. Thus, the design of the eastern façade of the Patient Pavilion is inconsistent with Rehabilitation Standard 9.

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<sup>32</sup> Page & Turnbull, 2014, op. cit.

- **Standard 10:** All new construction would be undertaken in a way that if it is removed in the future, the essential form and integrity of the A/B Wing would be unimpaired. However, the removal of the magnolia tree cannot be undone, and therefore the essential integrity of the environment of the A/B Wing would be affected by the proposed plan and is inconsistent with Rehabilitation Standard 10.

**Residential District Rehabilitation Standards Assessment.** Changes within the Residential District evaluated for the project pursuant to the Rehabilitation Standards, include demolition of the rear portions of historical resources at 671, 675, 707, and 715 53<sup>rd</sup> Street; construction of a new access driveway off Dover Street during Phase 1 behind the demolished portions of residences at 707 and 715 53<sup>rd</sup> Street; and construction of a two-story Family Residence Building during Phase 2 at the demolished portions of residences at 671, 675, and 677-679 53<sup>rd</sup> Street. As described in additional detail in the technical study prepared for the project (Appendix B), these proposed demolitions and constructions within the Residential District are consistent with the Rehabilitation Standards. These changes are consistent as they (1) do not destroy historic materials, features, or the publically visible spatial relationships that characterize the Residential District; and (2) are sufficiently differentiated from, yet compatible in use, scale, and massing with, the existing historic buildings that comprise the Residential District.

**Phase 1 Impacts.** Phase 1 includes demolition of 5204 Martin Luther King Jr. Way to allow for construction of Outpatient Center 2. The residence at 5204 Martin Luther King Jr. Way is not a historical resource under CEQA, and its demolition would not have a substantial adverse change on the environment. However, SCA CUL-4 requires the applicant to make a reasonable effort to relocate this building.

Phase 1 also includes demolition of the rear additions at 707 and 715 53<sup>rd</sup> Street (which are contributors to the Residential District and therefore CEQA historic resources) for construction of a driveway from Dover Street to access the existing maintenance area adjacent to the existing parking structure and Outpatient Center 1. As described in the technical study prepared for the project (Appendix B), these project actions are consistent with applicable Rehabilitation Standards—specifically Rehabilitation Standards 2, 5, and 9—and are, therefore, mitigated to a level of less than a significant impact (*CEQA Guidelines* Section 15064.5(b)(3)).

Implementation of Phase 1 would have less than significant impacts to historical resources.

**Phase 2 Impacts.** Phase 2 includes the demolition of several buildings, removal of the Magnolia Tree, redesign of the interior courtyard, and new construction in proximity to the A/B Wing. Potential impacts to historic resources are described below. Implementation of Phase 2 would have less than significant impacts to historical resources.

*Removal of the Magnolia Tree.* The proposed project would remove the magnolia tree, which has been identified as a character-defining supportive landscape element of the A/B Wing, a historical resource under CEQA. The magnolia tree is west of the A/B Wing of Children's Hospital, and according to a plaque that is at the base of the tree, was planted in 1860 by female members of the Alden family, original land owners of the site. The magnolia tree is therefore the oldest extant landscape feature at the CHRCO campus. The magnolia tree may have contributed to the siting of the McElrath (Alden family) house that served as the original Baby Hospital (built between 1878 and 1900), because it shaded the front porch of that house. The house was extant when the A/B Wing was

constructed. Thus, the tree served in a tangential way as an element that may have shaped the siting of the courtyard and the A/B Wing. The Children's Hospital women's auxiliary fundraising group adopted the tree as a symbol and by the time the A/B Wing was constructed in 1926, had been calling itself the Branches, in reference to the magnolia tree, for approximately ten years.

Removal of the magnolia tree in advance of construction of the Link Building would eliminate this supportive landscape feature's ability to give context to the site of the A/B Wing. However, the removal of the magnolia tree does not render the A/B Wing unable to convey its historical significance, as the building retains the majority of its character-defining features, including its footprint, massing, fenestration material and pattern, cladding, ornament, and surrounding spatial openness. Therefore, removal of the magnolia tree represents a less-than-significant impact on the A/B Wing, and no mitigation measure is required. The City, however, proposes the following recommendation to further reduce the already less than significant impact.

**Recommendation CUL-1a: Incorporate a new magnolia tree into the site plan of the proposed project, as close as possible to the historic location of the magnolia, within the constraints of the site plan.**

According to a feasibility analysis provided by arborist Deanne Ecklund of HortScience Inc. to CLEO Construction Management regarding the relocation/transplantation of the magnolia tree (April 7, 2014), the magnolia tree "has a greater potential for decline than the likelihood it would survive and thrive for many years after relocation." Although the removal of the historic magnolia tree has a less-than-significant impact on the historic significance of the A/B Wing, its loss does remove some historic continuity from the site. The incorporation of a replacement magnolia tree should be considered for the site plan, in a location that is close to the site of the historic magnolia while still enabling the CHRCO to achieve its programmatic needs. The center of the planned traffic circle, south of the A/B Wing, may be a good place for the tree; caution should be taken, however, not to impact the visibility of the solarium at the southern portion of the A/B Wing, which is a character-defining feature of the A/B Wing.

**Recommendation CUL-1b: Install a permanent high-quality plaque or simple interpretive panel near the magnolia tree that includes information about the magnolia tree, including its historic relation to the site and its influence on naming of the "Branches."**

Similar to the plaque that is currently located under the magnolia tree, a new plaque or a simple interpretive panel may be installed that explains the no-longer-extant magnolia's historic relation to the site and its influence on the naming of the Branches. The plaque or panel would help visitors understand the reason the magnolia tree was a character-defining supportive landscape feature of the A/B Wing. This plaque or interpretive panel should clearly state that the tree is a new tree, in order to avoid potential false historicism.

*Removal of Interior Courtyard.* The proposed project would remove the existing courtyard, which has been identified as a character-defining supportive landscape element of the A/B Wing—a historical resource under CEQA—and replace it with a smaller courtyard. Siting the CHRCO's first purpose-built building, the L-shaped A/B Wing, created the courtyard. The presence of the open space was integral to the design of the A/B Wing, which depended on sunlight, fresh air, and cross breeze as part of the healing intention of the hospital. It is the spatial openness of the courtyard, rather than the present individual physical elements of the courtyard, that is considered a character-defining

supporting landscape feature of the A/B Wing. This openness gives context to the programmatic design of the A/B Wing, and has the additional benefit of allowing exterior character defining features of the A/B Wing (cladding, solariums, fenestration, and ornament) to be seen. Because the present individual physical elements of the courtyard are not character-defining, the removal of the existing courtyard and its replacement with a new courtyard does not represent a negative impact on the A/B Wing. The replacement of the existing courtyard with another courtyard, although slightly smaller than the existing courtyard, retains the spatial openness that complements the A/B Wing's L-shaped design and siting, which is what makes the courtyard a supportive character-defining feature of the A/B Wing. Removal of the existing courtyard and the installation of a slightly smaller courtyard represent a less-than-significant impact on the A/B Wing, and no mitigation measure is required. The City, however, proposes the following recommendation to further reduce the already less than significant impact.

**Recommendation CUL-2: Plan and install a new courtyard that retains a level of spatial openness similar to the level of spatial openness at the extant courtyard.**

A new courtyard should include landscape design that retains a sense of spatial openness, in order to allow the A/B Wing to continue to express its historic programmatic design, which required spatial openness to allow for sunlight, fresh air, and cross breeze.

In order to minimize any potential impact on the A/B Wing, the design of the new courtyard should retain a level of spatial openness that is similar to the existing courtyard. The program of the courtyard should not include plants, trees or other elements that, through height, quantity, or density, obscure the A/B Wing or restrict spatial openness.

*New Construction in Proximity to the A/B Wing.* The proposed project includes a concentration of façade ornamentation at the eastern side of the Patient Pavilion that is not compatible in style, materials, or ornament with the character-defining façade ornament features that are concentrated at the southern end of the A/B Wing, a historical resource under CEQA. The Patient Pavilion is a five-story building with a one-story mechanical penthouse that will be located west of the A/B Wing, at the site currently occupied by the B/C Wing (**Figure IV.C-3**). The footprint of the Patient Pavilion is curved in a convex shape that slightly wraps the southern portion of the A/B Wing. The east façade of the Patient Pavilion includes a concentration of façade ornament, including projecting window boxes with painted aluminum frames, painted aluminum spandrel panels, aluminum entry canopy, and aluminum cut-away signage. This ornament is different in theme, scale, color, material, and dimensional representation from the character-defining ornament of the A/B Wing, a concentration of which is located at the solarium at the southern terminus of the north/south portion of the building, near the east façade of the Patient Pavilion. The concentration and style of decorative ornament at the east facade of the Patient Pavilion, in close proximity to the southern terminus of the A/B Wing, is not compatible with the historic style, materials, and ornament that characterize the A/B Wing.

The impact of design incompatibility with the A/B Wing is less-than-significant for the reasons listed below.

- The facades of both the historic A/B Wing and the Patient Pavilion reflect the design intent of their respective eras; the A/B Wing design reflects the early 20<sup>th</sup> century understanding that light, fresh air, and sun contributed to health, while the Patient Pavilion design reflects the current practice of providing visual interest to relax and comfort young patients. Furthermore, the design of the Patient Pavilion represents a good-faith effort to satisfy

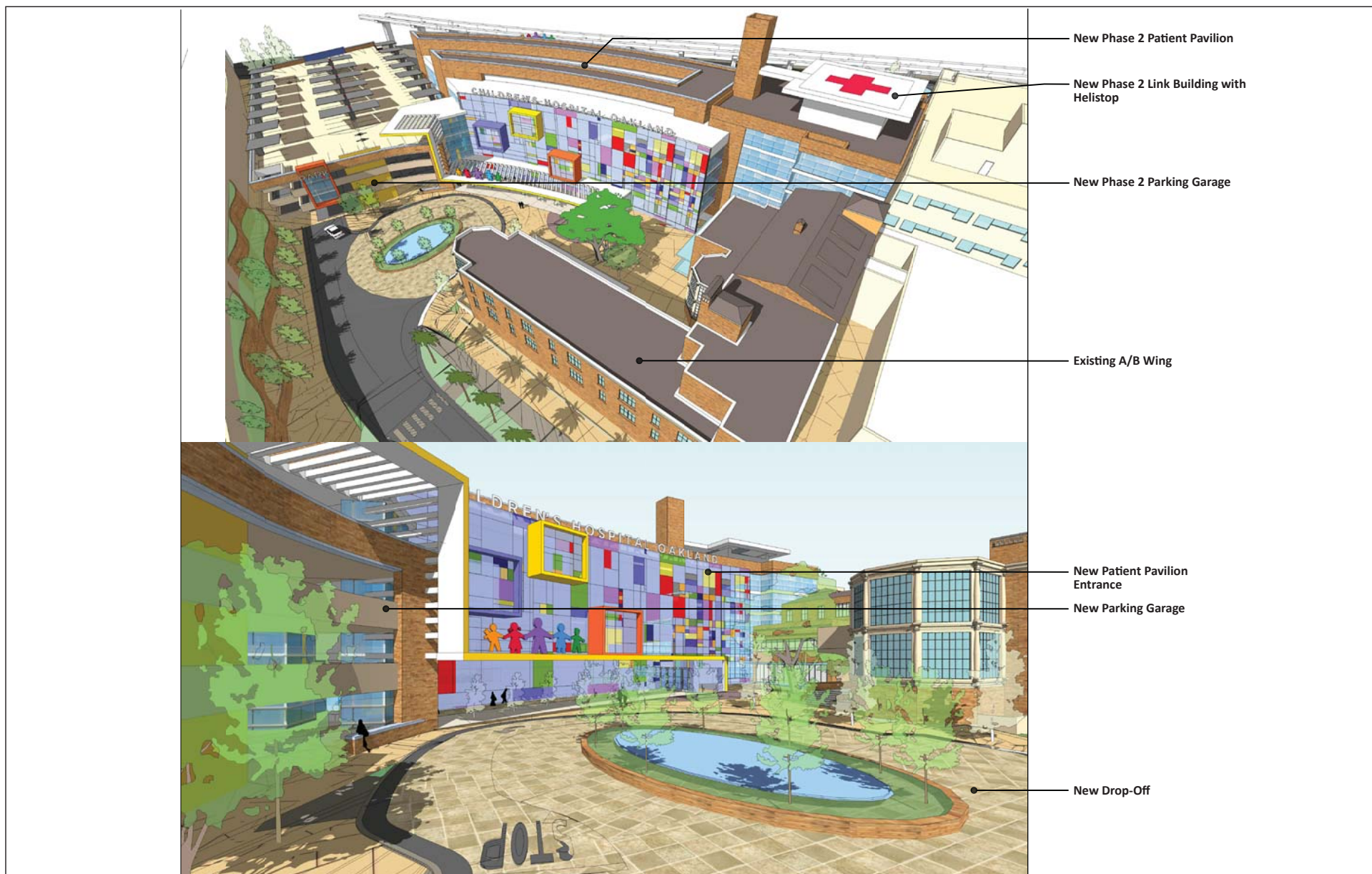
Rehabilitation Standards 9 and 10 by being differentiated from the A/B Wing and reversible, such that the Patient Pavilion could be removed in the future without impairing the essential form and integrity of the historic building.

- The overall design of the Patient Pavilion has the advantage of changing traffic circulation patterns at the CHRCO campus and bringing the A/B Wing into sight of more people. The A/B Wing is currently only partially visible to the public from State Route 24. In this way, the design of the Patient Pavilion would provide the A/B Wing greater opportunity to convey its historic significance.
- The overall design of the Patient Pavilion has the advantage of relocating a primary entrance of the CHRCO closer to its historic primary entrance at the south side of the east-west “L” of the A/B wing.
- The design of the Link Building, which is more subdued than that of the proposed Patient Pavilion, works to provide a visual “link” between the differing architectural styles of the Patient Pavilion and the A/B Wing.
- Despite the relative proximity of the east façade of the proposed Patient Pavilion to the southwest portion of the A/B Wing, the presence of a driveway and courtyard space between the two buildings provides an adequate spatial buffer to allow each building to be viewed as an independent structure, thus reducing the potential of the Patient Pavilion to visually overshadow the A/B Wing.

The construction of the Patient Pavilion with its current façade design does not render the A/B Wing unable to convey its historical significance, as the building retains its character-defining features, including its footprint, massing, fenestration material and pattern, cladding, ornament, and surrounding spatial openness. Therefore, construction of the Patient Pavilion with its current façade design represents a less-than-significant impact on the A/B Wing, and no mitigation is required. The City, however, proposes the following recommendation to further reduce the already less than significant impact.

**Recommendation CUL-3: A refinement of the design of the eastern portion of the Patient Pavilion should be given consideration by the design team. Assuming that changes to the façade design will have no negative effect on the programmatic needs of the CHRCO, recommendations include refining the curtain wall façade of the Pavilion as it transitions into the Link Building, and/or incorporating more direct design cues from the A/B Wing.**





LSA

FIGURE IV.C-3

SOURCE: HDR/TAYLOR, 2013. [B3.00/B3.01]

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CHRCO Campus Master Plan Project EIR  
Proposed A/B Wing Connection to Link Building

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**(2) Archaeological Resources.** The proposed project would have a significant effect on the environment if it would cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.

There are no prehistoric or historical archaeological deposits recorded in the project site. As described above in Archaeological Resources and Human Remains (section (d)(2)), research indicates that the project site is generally sensitive for the presence of prehistoric archaeological resources.<sup>33</sup> This sensitivity is based on the presence of Temescal Creek near the southern border of the project site, a freshwater source that would have focused Native American habitation and use along this riparian corridor during prehistory.

A previous archaeological survey of Temescal Creek near the project site, between Martin Luther King Jr. Way on the east and Adeline Street on the west, did not identify archaeological resources.<sup>34</sup> However, the potential for such intact deposits to be present under landscaping, buildings, asphalt, fill material, and native soil cannot be ruled out. Subsurface prehistoric archaeological deposits that may be affected by project activities include black-gray, midden soils containing marine shell and bone artifacts and subsistence debris, culturally flaked stone artifacts and debris (i.e., obsidian and chert), heat/fire-cracked rock, grinding implements (e.g., mortars and pestles), and human remains. Subsurface historical deposits that may be affected by project activities include those associated with the McElrath family and mansion and original Baby Hospital. The deposits may include historical trash scatters dating from the late 19<sup>th</sup> and early 20<sup>th</sup> centuries and hollow-filled features, such as foundations or wells containing historical bottles and ceramics.

**Phase 1 Impacts.** Phase 1 activities that have the potential to cause a substantial adverse change in the significance of an archaeological resource include post-demolition site preparation (i.e., grading and trenching for utilities) for construction of the Outpatient Center 2 Building and the expansion to the Central Utility Plant.

Implementation of SCA CUL-1 (Archaeological Resources) and a supplemental implementing Standard Condition (Archaeological Resources – Sensitive Areas), described above in detail in City of Oakland Standard Conditions of Approval (Section (C)(4)), would reduce any potential impacts to a less-than-significant level.

**Phase 2 Impacts.** Phase 2 activities that have the potential to cause a substantial adverse change in the significance of an archaeological resource are similar to those described above for Phase 2 impacts and include post-demolition site preparation (i.e., grading and trenching for utilities) for construction of the Family Residences Building, Link Building and helistop, Clinical Support Building, Patient Pavilion, Central Utility Plant, and Parking Garage. These project activities may have a slightly elevated likelihood of encountering historical archaeological deposits associated with the McElrath family and mansion and original Baby Hospital due to the demolition and construction of buildings at the former location of the mansion (i.e., the B/C Wing). Implementation of SCA CUL-1

<sup>33</sup> California Department of Transportation, 2005, op. cit.

<sup>34</sup> Banks, Peter, and David A. Fredrickson, 1977. *An Archaeological Investigation of Temescal Creek, between Grove Street and Adeline Street, Oakland, Alameda County, California*. Archaeological Laboratory, California State College, Sonoma, Rohnert Park.

(Archaeological Resources) and a supplemental implementing Standard Condition (Archaeological Resources – Sensitive Areas) would reduce any potential impacts to a less-than-significant level.

**(3) Paleontological Resources.** The project would have a significant effect on the environment if it directly or indirectly destroys a unique paleontological resource or site or unique geologic feature. There are no recorded paleontological resources (fossils) within the project site nor does the project site contain a unique geological feature. As described above in Paleontology (section (b)(3)), the project site is underlain by Holocene-age landforms, which are too recent to contain significant fossils. Underlying these Holocene deposits at an unknown depth are older Quaternary (i.e., Pleistocene) deposits, which have a potential to contain significant fossils, including bison, mammoth, ground sloths, saber-toothed cats, dire wolves, cave bears, rodents, birds, reptiles and amphibians.

**Phase 1 Impacts.** Phase 1 activities that have the potential to cause a substantial adverse change in the significance of a paleontological resource include post-demolition site preparation (i.e., grading and trenching for utilities below Holocene alluvium) for construction of the Outpatient Center 2 Building and the expansion to the Central Utility Plant.

Implementation of SCA CUL-3 (Paleontological Resources), described above in City of Oakland Standard Conditions of Approval (Section (C)(4)), would reduce any potential impacts to paleontological resources to a less-than-significant level.

**Phase 2 Impacts.** Phase 2 activities that have the potential to cause a substantial adverse change in the significance of a paleontological resource are similar to those described above for Phase 1 impacts and include post-demolition site preparation (i.e., grading and trenching for utilities below Holocene alluvium) for construction of the Family Residences Building, Link Building and helistop, Clinical Support Building, Patient Pavilion, Central Utility Plant, and Parking Garage. Implementation of SCA CUL-3 (Paleontological Resources) would reduce any potential impacts to paleontological resources to a less-than-significant level.

**(4) Human Remains.** The project would have a significant effect on the environment if it results in disturbance to human remains, including those interred outside of formal cemeteries. There are no human remains recorded in the project site. As described above in Archaeological Resources and Human Remains (section (d)(2)), research indicates that the project site is generally sensitive for the presence of prehistoric archaeological resources, which frequently contain Native American skeletal and cremated remains.<sup>35</sup>

**Phase 1 Impacts.** Phase 1 activities that have the potential to cause a substantial adverse change in the significance of an archaeological resource include post-demolition site preparation (i.e., grading and trenching for utilities) for construction of the Outpatient Center 2 Building and the expansion of the Central Utility Plant.

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<sup>35</sup> California Department of Transportation, 2005, op. cit.

Implementation of City of Oakland SCA CUL-2 (Human Remains) and a supplemental implementing SCA CUL-1 and CUL-1a through CUL-1b (Archaeological Resources—Sensitive Areas), described above in detail in City of Oakland Standard Conditions of Approval (Section (C)(4)), would reduce any potential impacts to human remains to a less-than-significant level.

**Phase 2 Impacts.** Phase 2 activities that have the potential to cause a substantial adverse change in the significance of an archaeological resource are similar to those described above for Phase 1 impacts and include post-demolition site preparation (i.e., grading and trenching for utilities) for construction of the Family Residences Building, Link Building and helistop, Clinical Support Building, Patient Pavilion, Central Utility Plant, and Parking Garage. Implementation of SCA CUL-2 (Human Remains) and a supplemental implementing SCA CUL-1 and CUL-1a through CUL-1b (Archaeological Resources—Sensitive Areas) would reduce any potential impacts to human remains to a less-than-significant level.

**c. Cumulative Impacts.** The proposed project would have a significant effect on the environment if it – in combination with other past, current, or reasonably feasibly foreseeable projects under review by the City – contributes to a significant cumulative impact on cultural resources. A cumulatively significant impact would occur, for example, if other closely related projects would impact the A/B Wing or Residential District, or other similar historical institutional or residential districts within the City.

Aside from the current project, there are no current or reasonably foreseeable projects planned in the City that would impact the A/B Wing or Residential District. The A/B Wing represents a unique resource in the City and is significant as the earliest, purpose-built hospital for children in the East Bay. The Residential District is significant for its direct association with E.A. Heron, vice president of the San Francisco, Oakland, & San Jose Railway (Key Route System). Mr. Heron had an important role in the early development and operation of the Key Route System, which in turn had a profound effect on population growth and residential development in the East Bay during the early 20<sup>th</sup> century. There are no current or reasonably foreseeable projects under review by the City that have the potential to impact similar resource types (i.e., early 20<sup>th</sup> century hospitals or 1906-1913 residential districts associated with Mr. Heron). Also, the project—when considered in association with other developments on the City’s Major Project List—would not contribute to cumulative impacts to historical resources given the scale of existing intervening development, which limits visual interaction between the proposed project and other anticipated development projects. Therefore, the project, which would have less-than-significant impacts on the A/B Wing and the Residential District, would not contribute to a cumulative effect on historical resources. Moreover, the project would not cause any substantial adverse changes in the significance of nearby off-site historical resources, including those that contribute to the historical significance of the Residential District. No mitigation for cumulative impacts to historical resources is required.

The potential disturbance of subsurface cultural resources that may underlie the project site, including archaeological resources, paleontological resources, and human remains, could have a considerable contribution to a cumulatively significant impact in the context of other past, present, or reasonably foreseeable local projects identified in the Major Projects List. As described above, implementation of appropriate SCAs would mitigate impacts to these resources by realizing their information potential and significance under Criterion 4 of the California Register of Historical Resources and, in the case of human remains, compliance with Section 7050.5 of the Health and Safety Code. The recovery, documentation, and interpretation of this information would enhance our knowledge of prehistory or

history and would be made available for future archaeological research, contributing to the scientific community and general public's understanding and interpretation of the past. Implementation of SCA CUL-1 and CUL-1a through CUL-1b (Archaeological Resources—Sensitive Areas), SCA CUL-2 (Human Remains), and SCA CUL-3 (Paleontological Resources) would mitigate this impact to a less-than-significant level.

## D. TRANSPORTATION AND CIRCULATION

This section describes the transportation, circulation, and parking conditions, including transit services and pedestrian and bicycle facilities in the vicinity of the proposed Children's Hospital & Research Center Oakland (CHRCO) Master Plan Project. This section also describes the regulatory setting relevant to transportation and circulation issues. Potential impacts of the proposed project are discussed and evaluated, and appropriate mitigation measures or Standard Conditions of Approval (SCA) are identified, as necessary, followed by identification of the residual impact significance after mitigation measures are implemented.

The analysis evaluates the traffic-related impacts of the project during the weekday morning and evening peak hours. The analysis was conducted in compliance with City of Oakland and Alameda County Transportation Commission (ACTC) guidelines. Traffic conditions are assessed for the following scenarios:

- **Existing** – Represents existing conditions with volumes obtained from recent traffic counts and the existing roadway system.
- **Existing Plus Phase 1 Project** – Existing conditions plus traffic generated after completion of Phase 1 of the proposed project.
- **Existing Plus Phase 2 Project** – Existing conditions plus traffic generated after completion of Phase 2 (i.e., buildout) of the proposed project.
- **2020 No Project** – Future conditions with planned population and employment growth, and planned transportation system improvements, for the year 2020. This scenario assumes no traffic growth at the project site. Traffic projections were developed using the ACTC Model.
- **2020 Plus Phase 1 Project** – 2020 No Project conditions plus traffic generated after completion of Phase 1 of the proposed project.
- **2020 Plus Phase 2 Project** – 2020 No Project conditions plus traffic generated after completion of Phase 2 (i.e., buildout) of the proposed project.
- **2035 No Project** – Future conditions with planned population and employment growth, and planned transportation system improvements, for the year 2035. This scenario assumes no traffic growth at the project site. Traffic projections were developed using the ACTC Model.
- **2035 Plus Phase 1 Project** – 2035 No Project conditions plus traffic generated after completion of Phase 1 of the proposed project.
- **2035 Plus Phase 2 Project** – 2035 No Project conditions plus traffic generated after completion of Phase 2 (i.e., buildout) of the proposed project.

Although not expressly required by CEQA, this section also includes discussion of other transportation-related topics, including bicycle and automobile parking, transit ridership, queues, signal warrant analysis, and collision history.

### 1. Setting

The existing transportation-related context in which the project would be constructed is described below, beginning with a description of the study area and the street network that serves the project site. Existing transit service, bicycle network, pedestrian facilities, and parking, in the vicinity of the

project are also described. Intersection levels of service are then defined and current conditions for roadways and intersections in the project vicinity are summarized. This subsection also discusses planned transportation improvements in the project vicinity as well as the applicable planning policies.

**a. Existing Roadway Network.** Regional and local roadways serving the project site are described below.

**(1) Regional Access.** A brief description of the regional roadway network serving the project site is provided below. Average daily traffic volumes were obtained from Caltrans' Traffic Volumes on the State Highway System (2011).

- **State Route 24 (SR 24)** is an eight-lane east-west freeway between **Interstate 580 (I 580)** in Oakland and Walnut Creek in the east. East of I 580, SR 24 continues as **Interstate 980 (I 980)**. SR 24 forms the east boundary of the project site. Ramps at 51<sup>st</sup> Street and Martin Luther King Jr. Way are the nearest freeway ramps to the project site. SR 24 has an average annual daily traffic volume (AADT) of approximately 146,000 vehicles east of I 980.
- **I 980** is an eight-lane north-south freeway west of the project site that connects SR 24 and I 580 to I 880. Ramps at Martin Luther King Jr. Way provide access between the project site and I 980. I 980 has an AADT of 113,000 vehicles near the project site.
- **I 580** is an eight-lane east-west freeway between US 101, in Marin County, and I 5 south of Tracy. Ramps at Martin Luther King Jr. Way provide access between the project site and I 580. I 580 has an AADT of approximately 230,000 vehicles per day near SR 24/I 980.
- **Interstate 80 (I 80)** is an eight to ten-lane national freeway extending west to San Francisco, and east through Berkeley, Sacramento, into Nevada and further east. I 580 provides access between the project site and I 80. I 80 has an AADT of approximately 270,000 vehicles per day just north of I 580 in Emeryville.

**(2) Local Access.** A brief description of the local and arterial streets serving the project site is provided below:

- **Martin Luther King Jr. Way** is a north-south arterial extending between Downtown Oakland and Berkeley. Martin Luther King Jr. Way provides three travel lanes in each direction near the project site.
- **52<sup>nd</sup> Street** is an east-west arterial extending from Telegraph Avenue in the east to Market Street in the west. 52<sup>nd</sup> Street generally provides one travel lane in each direction. Just west of Telegraph Avenue, 51<sup>st</sup> Street splits from 52<sup>nd</sup> Street and continues east with two travel lanes in each direction. East of Broadway, 51<sup>st</sup> Street becomes Pleasant Valley Avenue. West of Martin Luther King Jr. Way, 52<sup>nd</sup> Street is a residential street.
- **Shattuck Avenue** is a north-south arterial extending from Telegraph Avenue in the south to Berkeley in the north. Shattuck Avenue provides one travel lane in each direction near the project site.
- **Telegraph Avenue** is a major north-south arterial extending between Broadway in Downtown Oakland and Berkeley. Telegraph Avenue generally provides two travel lanes in each direction in the study area.
- **Dover Street** is a north-south residential street between 52<sup>nd</sup> Street in the south and Alcatraz Avenue in the north. Dover Street provides one travel lane in each direction.

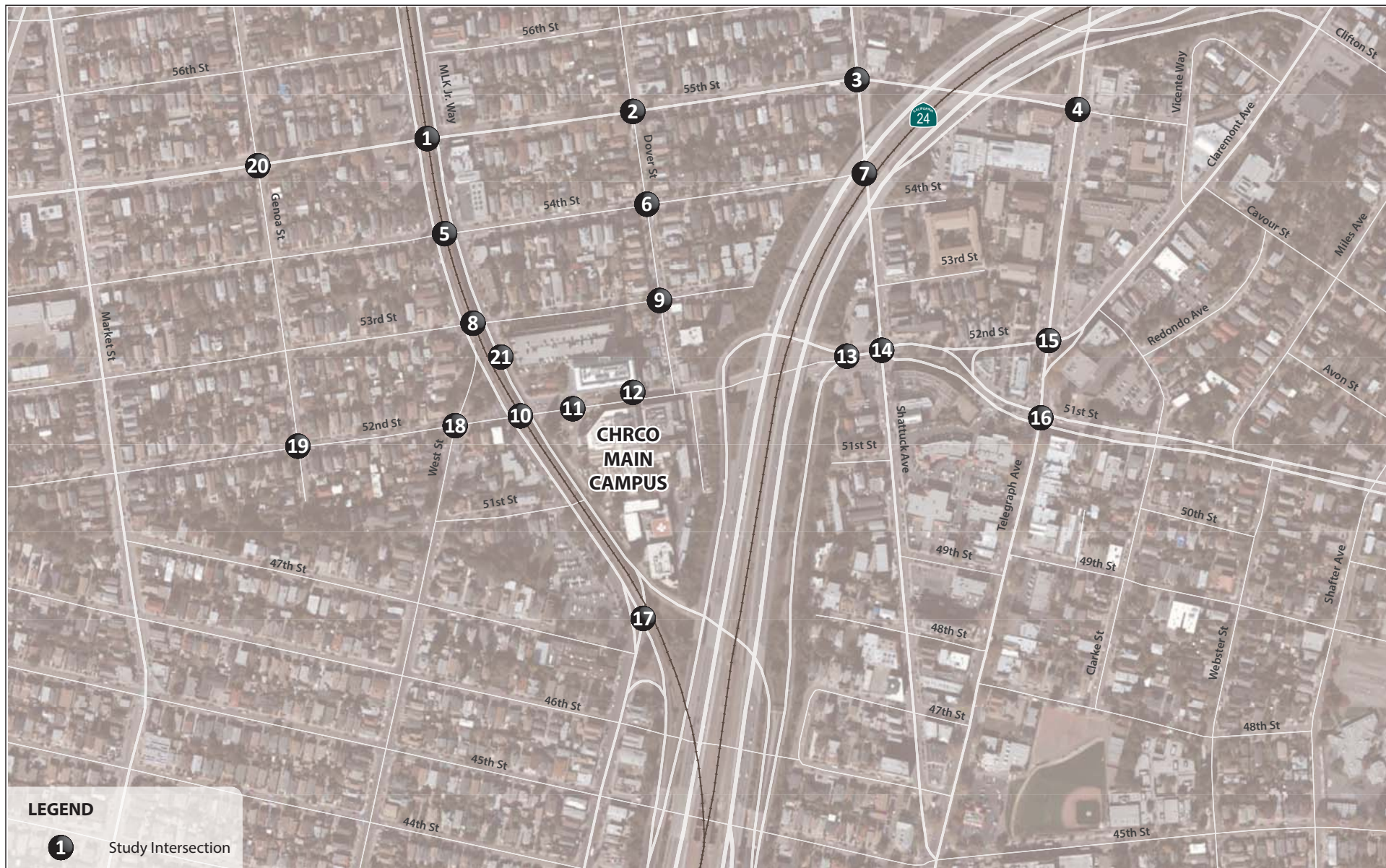


- **Genoa Street** is a north-south residential street between 52<sup>nd</sup> Street in the south and Adeline Street in the north. Genoa Street provides one travel lane in each direction.
- **West Street** is a north-south collector street between 14th Street in the south and Martin Luther King Jr. Way in the north. West Street provides one travel lane in each direction near the project site.
- **55<sup>th</sup> Street** is an east-west collector between Emeryville in the west and Telegraph Avenue in the east. 55<sup>th</sup> Street provides one travel lane in each direction in the project vicinity.
- **54<sup>th</sup> Street** is an east-west residential street between Emeryville in the west and Shattuck Avenue in the east. 54<sup>th</sup> Street provides one travel lane in each direction in the project vicinity.
- **53<sup>rd</sup> Street** is an east-west collector between Emeryville in the west and Dover Street in the east. 53<sup>rd</sup> Street provides one travel lane in each direction in the project vicinity.

**b. Study Intersections.** Intersection operations at 21 intersections in the vicinity of the project site were evaluated during the weekday morning (AM) and evening (PM) for Existing, 2020, and 2035 conditions. These time periods were selected because traffic generated by the project, in combination with background traffic, is expected to represent typical worst traffic conditions. The study intersections are listed below and shown on **Figure IV.D.-1** (study intersections located on arterials that provide direct access to Downtown are noted by \*; intersections under Caltrans jurisdiction are noted by #):

- |  |   |
|--|---|
| 1. Martin Luther King Jr. Way/55 <sup>th</sup> Street      | 13. SR 24 Ramps/52 <sup>nd</sup> Street #                                       |
| 2. Dover Street/55 <sup>th</sup> Street                    | 14. Shattuck Avenue/52 <sup>nd</sup> Street                                     |
| 3. Shattuck Avenue/55 <sup>th</sup> Street                 | 15. Telegraph Avenue-Claremont Avenue/<br>52 <sup>nd</sup> Street *             |
| 4. Telegraph Avenue/55 <sup>th</sup> Street                | 16. Telegraph Avenue/51 <sup>st</sup> Street *                                  |
| 5. Martin Luther King Jr. Way/54 <sup>th</sup> Street      | 17. SR 24 Ramps/Martin Luther King Jr.<br>Way #                                 |
| 6. Dover Street/54 <sup>th</sup> Street                    | 18. West Street/52 <sup>nd</sup> Street   |
| 7. Shattuck Avenue/54 <sup>th</sup> Street                 | 19. Genoa Street/52 <sup>nd</sup> Street  |
| 8. Martin Luther King Jr. Way/53 <sup>rd</sup> Street      | 20. Genoa Street/55 <sup>th</sup> Street  |
| 9. Dover Street/53 <sup>rd</sup> Street                    | 21. Martin Luther King Jr. Way/Garage<br>Driveway (Plus Project scenarios only) |
| 10. Martin Luther King Jr. Way/52 <sup>nd</sup> Street     |   |
| 11. CHRCO Garage Driveways/52 <sup>nd</sup> Street         |   |
| 12. Dover Street-Hospital Driveway/52 <sup>nd</sup> Street |   |

In general, major intersections where the project would increase traffic volumes by 50 or more peak-hour trips are identified as potential study intersections. This threshold is selected because it generally corresponds to 5 percent or more of current traffic volumes along major arterials, which is similar to the typical day-to-day fluctuation in traffic volumes and can be noticeable to most people. This analysis also evaluates traffic operations at other intersections likely to be impacted by the proposed project.



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FIGURE IV.D-1

SOURCE: FEHR & PEERS, 2014.

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CHRCO Campus Master Plan Project EIR  
Project Study Area and Study Intersections

c. **Transit Services.** Transit service providers in the project vicinity include AC Transit, which provides local and Transbay bus service with connections to the Transbay Terminal in San Francisco; Bay Area Rapid Transit (BART), which provides regional rail service; and the CHRCO Shuttle, which provides free shuttle service between CHRCO and MacArthur BART Station. The existing transit services provided near the project site are shown on **Figure IV.D-2** and described below.

(1) **Bus Services.** AC Transit is the primary bus service provider in 13 cities and adjacent unincorporated areas in Alameda and Contra Costa Counties, with Transbay service to destinations in San Francisco, San Mateo and Santa Clara Counties. **Table IV.D-1** summarizes the characteristics of the AC Transit routes operating in the project area. Five local routes, one Transbay route, and one night route operate in the vicinity of the CHRCO. CHRCO is directly served by Route 18, which operates adjacent to the project site on Martin Luther King Jr. Way.

**Table IV.D-2** describes the bus stops near the project site. The nearest bus stops are adjacent to the project site along southbound Martin Luther King Jr. Way just north of 52<sup>nd</sup> Street and along northbound Martin Luther King Jr. Way about midway between 52<sup>nd</sup> and 53<sup>rd</sup> Streets.

**Table IV.D-3** shows the capacity and loads (passengers) of the AC Transit routes serving the project area and vicinity. Load factor is defined as the ratio of occupied seats to the number of seats on the bus. A load factor of 100 percent or more indicates that the bus operates at or above its seated capacity. The average load factors for all busses operating in the project vicinity are well below bus capacities. Route 1R is the only route that has a maximum load factor at or above capacity. In general, Routes 1 and 1R, along Telegraph Avenue and about 1/3 of a mile east of the CHRCO, are the most heavily utilized bus routes in the study area.

(2) **Bay Area Rapid Transit (BART).** BART provides regional rail service throughout the East Bay and across the Bay to San Francisco and the Peninsula. The nearest BART station to CHRCO is the MacArthur BART Station, about 0.6 miles southeast of the CHRCO site. The station is elevated and located in the median of SR 24. Station access is provided just south of 40th Street. The Station provides designated motor vehicle parking, and pick-up/drop off facilities for automobiles, shuttle, and buses.

**Table IV.D-4** summarizes number of passengers using the MacArthur BART Stations. More than 18,000 riders access the MacArthur BART Station on a typical weekday.

The Pittsburg/Bay Point–SFO/Millbrae, Daly City/Millbrae–Richmond, and Richmond–Fremont lines provide service at the MacArthur BART Station. The station is served by about 30 trains per hour during the peak periods. **Table IV.D-5** summarizes peak-hour loads near the MacArthur BART Station. Currently, both directions of Pittsburg/Bay Point–SFO/Millbrae and Richmond–Daly City/Millbrae lines have average load factors above BART’s planning capacity during peak periods, while all lines except both directions of Richmond–Fremont lines have absolute maximum loads above BART’s planning capacity.

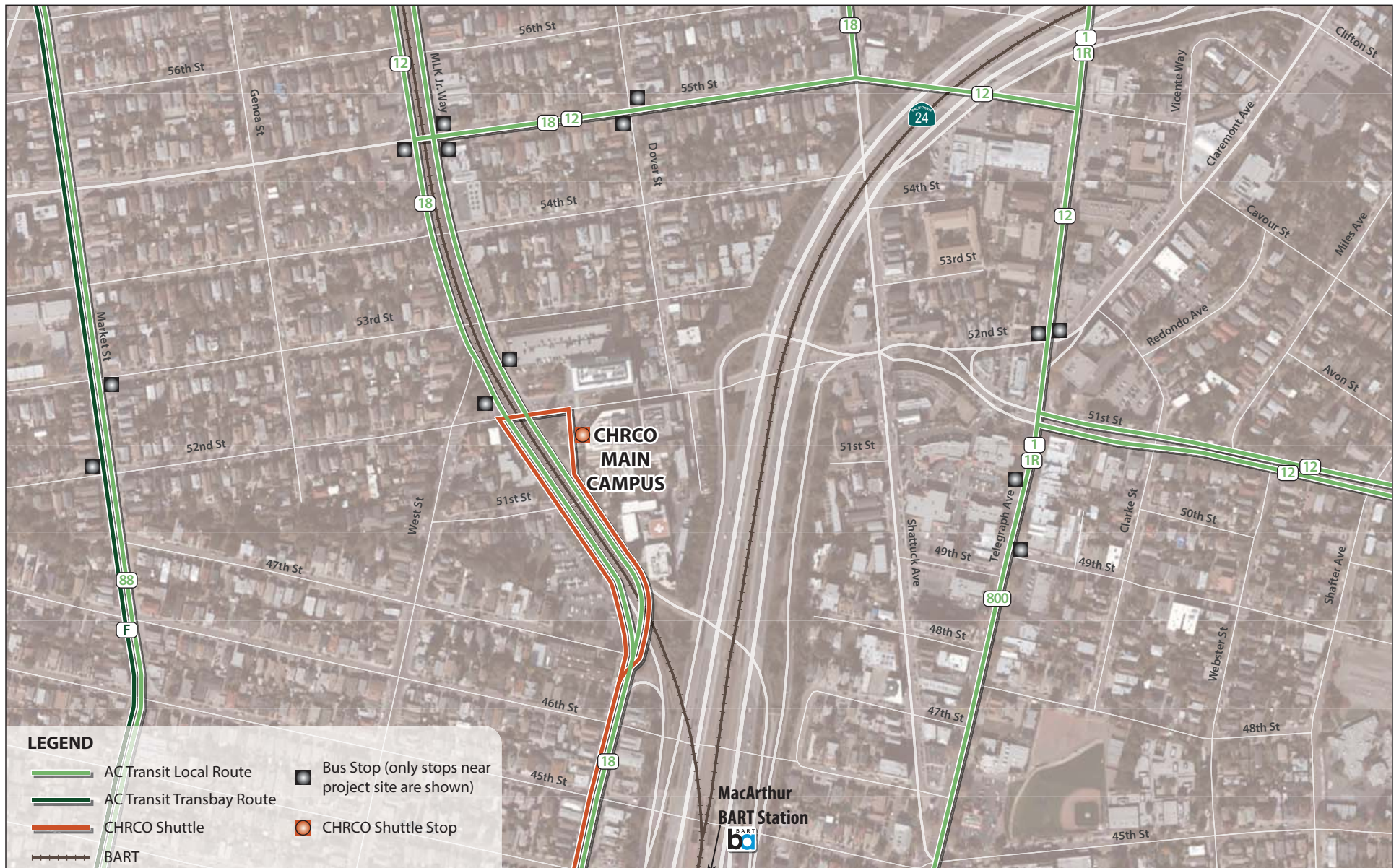
**Table IV.D-1: AC Transit Routes in the Project Vicinity**

| Route  | Route   | Nearest Stops   | Weekday                       |                      | Weekend  |                      | Bus Type  |
|--|---|---|-------------------------------|----------------------|--|----------------------|---|
|  |   |   | Hours                         | Headway <sup>a</sup> | Hours  | Headway <sup>a</sup> |   |
| Local Routes   |   |   |                               |                      |  |                      |   |
| 1<br>(Telegraph/<br>International<br>Blvd)           | Downtown<br>Berkeley to Bay Fair<br>BART station                        | Telegraph Ave. at<br>51 <sup>st</sup> St. and 52 <sup>nd</sup> St./<br>Claremont Ave.               | 5:20 a.m.<br>to<br>1:00 a.m.  | 15-20<br>minutes     | 5:30 a.m.<br>to<br>1:05 a.m.   | 20<br>minutes        | 60-foot<br>articulated buses<br>with a 47-person<br>seating capacity    |
| 1R<br>(Telegraph/<br>International<br>Blvd Rapid)    | Downtown<br>Berkeley to Bay Fair<br>BART station<br>(limited stops)     | Telegraph Ave. at<br>49 <sup>th</sup> St./ Temescal<br>Plaza  | 6:30 a.m.<br>to<br>8:20 p.m.  | 12<br>minutes        | 8:30 a.m.<br>to<br>7:00 p.m.   | 15<br>minutes        |   |
| 12<br>(Temescal<br>District/<br>Downtown<br>Oakland) | Downtown Berkeley<br>to Downtown<br>Oakland                             | Martin Luther King<br>Jr. Way at 55 <sup>th</sup> St<br>and 55 <sup>th</sup> St. at<br>Dover Street | 6:15 a.m.<br>to<br>10:45 p.m. | 20-30<br>minutes     | 6:05 a.m.<br>to<br>10:50 p.m.  | 30<br>minutes        | 30-foot buses<br>with a 25-person<br>seating capacity                   |
| 18<br>(University<br>Village/<br>Montclair)          | University Village in<br>Albany to Montclair<br>via Downtown<br>Oakland | Martin Luther King<br>Jr. Way at 52 <sup>nd</sup><br>St./53 <sup>rd</sup> St.                       | 5:15 a.m.<br>to<br>12:40 a.m. | 15-20<br>minutes     | 6:00 a.m.<br>to<br>12:35 a.m.  | 20-25<br>minutes     | 40-foot buses<br>with a 32-person<br>seating capacity                   |
| 88<br>(Berkeley<br>BART/<br>Market St.)              | Downtown Berkeley<br>to Lake Merritt<br>BART                            | Market St. at 52 <sup>nd</sup><br>St. and 53 <sup>rd</sup> St.                                      | 5:25 a.m.<br>to<br>10:45 p.m. | 20-30<br>minutes     | 5:35 a.m.<br>to<br>10:45 p.m.  | 30<br>minutes        | 60-foot<br>articulated<br>buses with a<br>47-person<br>seating capacity |
| Transbay Routes                                      |   |   |                               |                      |  |                      |   |
| F<br>(UC Campus)                                     | UC Berkeley to San<br>Francisco Transbay<br>Terminal                    | Market St. at 52 <sup>nd</sup><br>St. and 53 <sup>rd</sup> St.                                      | 5:10 a.m.<br>to<br>12:50 a.m. | 30<br>minutes        | 5:15 a.m.<br>to<br>11:50 a.m.  | 30<br>minutes        | 60-foot<br>articulated buses<br>with a 47-person<br>seating capacity    |
| Night Routes   |   |   |                               |                      |  |                      |   |
| 800<br>(All-Nighter)                                 | Downtown San<br>Francisco to the<br>Richmond BART<br>station            | Telegraph Ave. at<br>51 <sup>st</sup> St. and 52 <sup>nd</sup> St./<br>Claremont Ave.               | 12:40 a.m.<br>to<br>6:25 a.m. | 60<br>minutes        | 12:40 a.m.<br>to<br>7:25 a.m.<br>(Sat)<br>12:40 a.m.<br>to<br>7:40 a.m.<br>(Sun) | 60<br>minutes        | 60-foot<br>articulated buses<br>with a 47-person<br>seating capacity    |

<sup>a</sup> The frequency, or interval of time between buses traveling in any given direction along a designated route.

Source: AC Transit website, summarized by Fehr & Peers, 2014.





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FIGURE IV.D-2

SOURCE: FEHR & PEERS, 2014.

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CHRCO Campus Master Plan Project EIR  
Existing Transit Service

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**Table IV.D-2: AC Transit Bus Stops in the Project Vicinity**

| Street                     | Direction | Location   | Bus Routes | Bus Stop Amenities   | Nearest Pedestrian Crossing  |
|----------------------------|-----------|--|------------|--|--|
| Martin Luther King Jr. Way | NB        | Between 52 <sup>nd</sup> St. and 53 <sup>rd</sup> St.          | 18         | Bus stop sign, shelter, bench, map, schedule, trash receptacle | Signalized Martin Luther King Jr. Way/52 <sup>nd</sup> Street and Martin Luther King Jr. Way/53 <sup>rd</sup> Street intersections |
|                            | SB        | Before 52 <sup>nd</sup> Street                                 | 18         | Bus stop sign, shelter, bench, map, schedule, trash receptacle | Signalized Martin Luther King Jr. Way/52 <sup>nd</sup> Street Intersection   |
|                            | NB        | After 55 <sup>th</sup> Street                                  | 12         | Bus stop sign  | Signalized Martin Luther King Jr. Way/55 <sup>th</sup> Street intersection   |
|                            | SB        | After 55 <sup>th</sup> Street                                  | 12         | Bus stop sign, trash receptacle                                | Signalized Martin Luther King Jr. Way/55 <sup>th</sup> Street intersection   |
| 55 <sup>th</sup> Street    | EB        | Before Dover Street  | 12, 18     | Bus stop sign  | Unmarked crosswalks at the unsignalized Dover St./55 <sup>th</sup> St intersection   |
|                            | WB        | Before Dover Street  | 12, 18     | Bus stop sign  | Unmarked crosswalks at the unsignalized Dover St./55 <sup>th</sup> St intersection   |
| Telegraph Avenue           | NB        | After 52 <sup>nd</sup> St./ Claremont Ave.                     | 1, 12, 800 | Bus stop sign, bench, schedule, trash receptacle               | Signalized Telegraph Ave./52 <sup>nd</sup> St./Claremont Ave. intersection   |
|                            | SB        | Before 52 <sup>nd</sup> St./ Claremont Ave.                    | 1, 12, 800 | Bus stop sign, bench, schedule, trash receptacle               | Signalized Telegraph Ave./52 <sup>nd</sup> St./Claremont Ave. intersection   |
|                            | NB        | After 49 <sup>th</sup> Street                                  | 1/1R, 800  | Bus stop sign, bench, trash receptacle                         | High visibility crosswalk across Telegraph Ave. at the unsignalized Telegraph Avenue/49th St. intersection                         |
|                            | SB        | Before Temescal Plaza driveway (North of 49 <sup>th</sup> St.) | 1/1R, 800  | Bus stop sign, shelter, bench, map, schedule, trash receptacle | Signalized Telegraph Ave./Temescal Plaza intersection  |
| Market Street              | NB        | Before 53 <sup>rd</sup> Street                                 | 88, F      | Bus stop sign  | Unmarked crosswalks at the unsignalized Market Street/52 <sup>nd</sup> St. intersection.   |
|                            | SB        | Before 52 <sup>nd</sup> Street                                 | 88, F      | Bus stop sign, schedule  | Unmarked crosswalks at the unsignalized Market Street/52 <sup>nd</sup> St. intersection.   |

Source: Fehr &amp; Peers, 2014.

**Table IV.D-3: AC Transit Boardings and Alightings (Weekday)**

| Bus Route and Stop Location  | Direction | Average Capacity (Seats) | Average Load <sup>a</sup> (Passengers) | Average Load Factor <sup>b</sup> | Maximum Load <sup>c</sup> (Passengers) | Maximum Load Factor <sup>d</sup> | Boardings (Ons) <sup>e</sup> | Alightings (Offs) <sup>f</sup> |
|--|-----------|--------------------------|--|----------------------------------|--|----------------------------------|------------------------------|--------------------------------|
| Route 1 on Telegraph Ave. at 52 <sup>nd</sup> St./ Claremont Ave                     | NB        | 47                       | 19.3                                   | 41%                              | 36                                     | 77%                              | 24                           | 71                             |
|  | SB        |                          | 15.8                                   | 34%                              | 32                                     | 68%                              | 28                           | 21                             |
| Route 1R on Telegraph Ave. at 49 <sup>th</sup> St./50 <sup>th</sup> St.              | NB        | 47                       | 22.4                                   | 48%                              | 45                                     | 96%                              | 100                          | 252                            |
|  | SB        |                          | 19.1                                   | 41%                              | <b>47</b>                              | <b>100%</b>                      | 237                          | 92                             |
| Route 12 on 55 <sup>th</sup> St. at Dover St.  | EB        | 25                       | 8.3                                    | 33%                              | 16                                     | 64%                              | 3                            | 2                              |
|  | WB        |                          | 9.3                                    | 37%                              | 20                                     | 80%                              | 3                            | 5                              |
| Route 12 on Martin Luther King Jr. Way at 55 <sup>th</sup> St./ 54 <sup>th</sup> St. | NB        | 25                       | 9.4                                    | 38%                              | 21                                     | 84%                              | 15                           | 12                             |
|  | SB        |                          | 8.3                                    | 33%                              | 16                                     | 64%                              | 13                           | 14                             |
| Route 18 on Martin Luther King Jr. Way at 52 <sup>nd</sup> /53 <sup>rd</sup> St.     | NB        | 32                       | 13.4                                   | 42%                              | 26                                     | 81%                              | 29                           | 50                             |
|  | SB        |                          | 13.7                                   | 43%                              | 24                                     | 75%                              | 37                           | 22                             |
| Route 18 on 55 <sup>th</sup> St. at Dover St.  | EB        | 32                       | 13                                     | 41%                              | 23                                     | 72%                              | 13                           | 20                             |
|  | WB        |                          | 13                                     | 41%                              | 26                                     | 81%                              | 15                           | 9                              |

<sup>a</sup> Number of passengers on the bus averaged on a typical weekday.<sup>b</sup> Average load divided by average seated capacity.<sup>c</sup> Maximum number of passengers on the bus observed on a typical weekday.<sup>d</sup> Maximum load divided by average seated capacity.<sup>e</sup> Average number of passengers boarding the bus at this location on a typical weekday.<sup>f</sup> Average number of passengers alighting the bus at this location on a typical weekday.**Bold** indicates load factor above 100 percent.

Source: Fall 2012 data provided by AC Transit in November 2013.

**Table IV.D-4: MacArthur BART Station Entries and Exits (Weekday)**

|                          | AM Peak Hour<br>(7:30 a.m. to 8:30 a.m.) | PM Peak Hour<br>(5:00 p.m. to 6:00 p.m.) | Daily         |
|--------------------------|--|--|---------------|
| Entries                  | 1,260                                    | 950                                      | 9,120         |
| Exits                    | 820                                      | 1,180                                    | 9,250         |
| <b>Total<sup>a</sup></b> | <b>2,080</b>                             | <b>2,130</b>                             | <b>18,370</b> |

<sup>a</sup> Does not include passengers transferring between lines at the platform level.

Source: November 2012 data provided by BART in November 2013.



**Table IV.D-5: BART Peak-hour Loads by Line**

| Line                               | Trains During Peak Hour | Average Cars per Peak Hour Train | Maximum Load Peak Hour | Peak Hour Average Maximum Load |                          | Absolute Maximum Load         |                          |
|------------------------------------|-------------------------|----------------------------------|------------------------|--------------------------------|--------------------------|-------------------------------|--------------------------|
|                                    |                         |                                  |                        | Maximum Load (Passengers/Car)  | Load Factor <sup>a</sup> | Maximum Load (Passengers/Car) | Load Factor <sup>a</sup> |
| Pittsburg/Bay Point – SFO/Millbrae | 8                       | 9                                | 8:00 a.m. – 9:00 a.m.  | <b>117</b>                     | <b>1.09</b>              | <b>138</b>                    | <b>1.29</b>              |
| SFO/Millbrae – Pittsburg/Bay Point | 5                       | 9                                | 4:00 p.m. – 5:00 p.m.  | 103                            | 0.96                     | <b>123</b>                    | <b>1.15</b>              |
| Daly City/Millbrae – Richmond      | 4                       | 9                                | 5:00 p.m. – 6:00 p.m.  | 106                            | 0.99                     | <b>159</b>                    | <b>1.49</b>              |
| Richmond–Daly City/Millbrae        | 4                       | 9                                | 8:00 a.m. – 9:00 a.m.  | <b>113</b>                     | <b>1.06</b>              | <b>129</b>                    | <b>1.21</b>              |
| Fremont–Richmond                   | 4                       | 6                                | 5:00 p.m. – 6:00 p.m.  | 68                             | 0.64                     | 88                            | 0.82                     |
| Richmond–Fremont                   | 4                       | 6                                | 5:00 p.m. – 6:00 p.m.  | 54                             | 0.50                     | 62                            | 0.58                     |

**Bold** indicates load above capacity.

<sup>a</sup> BART defines total capacity as including 67 seated and 40 standing passengers.

Source: November 2012 data provided by BART in November 2013 and summarized by Fehr & Peers.

(3) **CHRCO Shuttle.** CHRCO operates a free shuttle between the MacArthur BART Station and the main campus for its employees, patients, and visitors. At CHRCO, the shuttle stop is in the Main Plaza (i.e., Main Hospital pick-up/drop off area) in the southeast corner of Martin Luther King Jr. Way/52<sup>nd</sup> Street intersection. Currently, the shuttle operates on weekdays from 6:00 a.m. to midnight with approximately 12 to 15 minute headways. CHRCO uses 24-passenger shuttles during the day and eight-passenger shuttles during the evening and night. The shuttles currently transport about 455 passengers each day.<sup>1</sup>

d. **Bicycle Network.** City of Oakland's 2007 Bicycle Master Plan Update (BMP) identifies the following bicycle facility types:

- **Class 1 Paths.** These facilities are located off-street and can serve both bicyclists and pedestrians. Recreational trails can be considered Class 1 facilities. Class 1 paths are typically 8 to 10 feet wide excluding shoulders and are generally paved. There are no Class 1 paths in the vicinity of the project.
- **Class 2 Bicycle Lanes.** These facilities provide a dedicated area for bicyclists within the paved street width through the use of striping and appropriate signage. These facilities are typically 5 to 6 feet wide.
- **Class 3 Bicycle Routes.** These facilities are found along streets that do not provide sufficient width for dedicated bicycle lanes. The street is then designated as a bicycle route through the use of signage informing drivers to expect bicyclists.
- **Class 3A Arterial Bicycle Routes.** These facilities are found along some arterial streets where bicycle lanes are not feasible and parallel streets do not provide adequate

<sup>1</sup> May 2013 ridership data provided by CHRCO.

connectivity. Speed limits as low as 25 miles per hour (mph), and shared-lane bicycle stencils, wide curb lanes, and signage are used to encourage shared use.

- **Class 3B Bicycle Boulevards.** These facilities are found along residential streets with low traffic volumes. Assignment of right-of-way to the route, traffic calming measures and bicycle traffic signal actuation are used to prioritize through-trips for bicycles.

**Figure IV.D-3** shows the existing and planned bicycle facilities in the project vicinity. Currently, the CHRCO campus is not directly served by any designated bicycle facilities. Existing bicycle facilities in the project vicinity include Class 2 bicycle lanes on Market Street, West Street, Shattuck Avenue, and 55<sup>th</sup> Street west of Shattuck Avenue, Class 3A arterial bike routes on 55<sup>th</sup> Street between Shattuck and Telegraph Avenues and on Telegraph Avenue between 55<sup>th</sup> and Aileen Streets, and Class 3B bicycle boulevards on Genoa Street and 52<sup>nd</sup> Street between Genoa and West Streets. In addition, although Dover Street is not a designated bicycle facility, it is used as a local access route by cyclists.

Based on the BMP, proposed bicycle facilities in the project vicinity include Class 2 bicycle lanes on Telegraph Avenues, which is currently under study as part of the Telegraph Avenue Complete Streets Project, and Claremont Avenue, and Class 3A arterial bike routes on 51<sup>st</sup> Street east of Shattuck Avenue.

**e. Existing Pedestrian Network.** The City of Oakland's Pedestrian Master Plan (PMP, November 2002) designates Martin Luther King Jr. Way as a City Route, and Dover Street and 52<sup>nd</sup>, and 53<sup>rd</sup> Streets as Neighborhood Routes. The PMP (section 4.a.(2)) states the following about these types of routes:

- "City routes designate streets that are destinations in themselves – places to live, work, shop, socialize and travel. They provide the most direct connections between walking and transit and connect multiple districts in the City."
- "Neighborhood routes are local streets that connect schools, parks, recreational centers, and libraries. They are places for people to meet and they provide the basis for neighborhood life. They are used for walking to school, walking for exercise, and safe walking at night."

For each type of route, PMP presents minimum design guidelines, which consists of the through passage zone, utility zone, and total sidewalk width. The through passage zone is the paved part of the sidewalk usable by pedestrians. The utility zone includes features such as street furnishings, vegetation, and signage. City Routes require an eight-foot through passage zone, and a four-foot utility zone, for a 12-foot total sidewalk width. Neighborhood Routes requires a five-foot wide through passage zone, and a four-foot utility zone, for a nine-foot total sidewalk width.

Pedestrian facilities include sidewalks, crosswalks, and pedestrian signals. **Figure IV.D-4** summarizes pedestrian facilities in the study area and shows the major pedestrian routes to and from the project site. These routes include routes between CHRCO buildings and garages, and nearby bus stops and commercial areas. All streets in the study area provide sidewalks. None of the streets adjacent to the project site provide pedestrian-scale street lighting. Pedestrian facilities on the streets adjacent to the project site include:

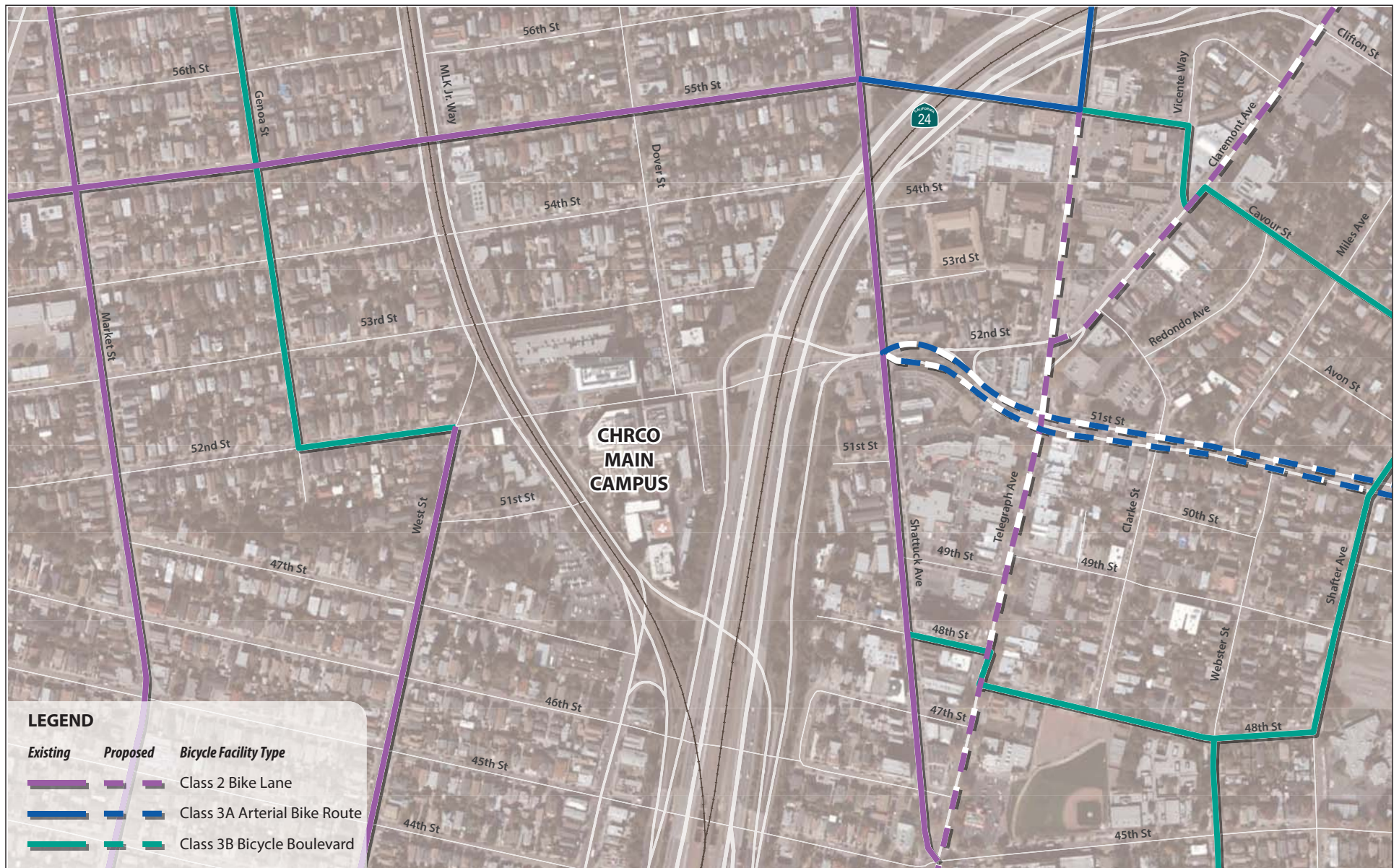


FIGURE IV.D-3

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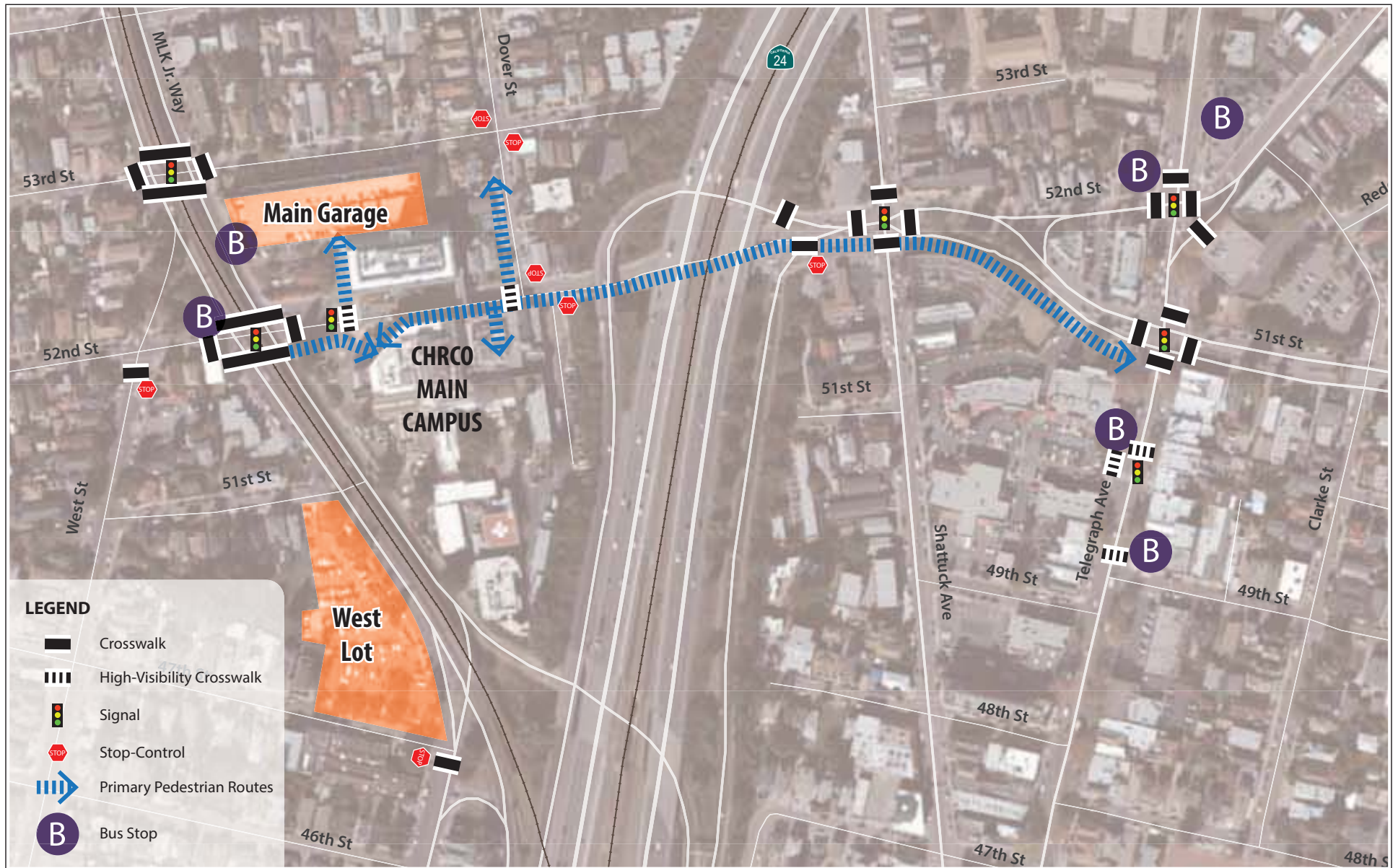


SOURCE: FEHR & PEERS, 2014.

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CHRCO Campus Master Plan Project EIR  
Existing and Proposed Bicycle Facilities





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FIGURE IV.D-4

SOURCE: FEHR & PEERS, 2014.

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CHRCO Campus Master Plan Project EIR  
Pedestrian Facilities and Circulation in Project Vicinity

- Martin Luther King Jr. Way – the sidewalk along the hospital frontage south of 52<sup>nd</sup> Street is about nine feet wide with a minimum five-foot through pedestrian passage zone and a four-foot utility zone which accommodates trees, parking meters, signs, and light poles. The sidewalk north of 52<sup>nd</sup> Street is generally seven feet wide with a minimum four-foot through pedestrian passage zone and a three-foot utility zone which accommodates trees, signs, and light poles. These sidewalks do not meet the PMP guidelines for 12-foot sidewalks along Martin Luther King Jr. Way.
- 52<sup>nd</sup> Street – the sidewalks on both sides of the street between Martin Luther King Jr. Way and Dover Street are about nine to ten feet wide with a minimum five-foot through pedestrian passage zone and a maximum four-foot utility zone which accommodates trees, parking meters, signs, and light poles, which is consistent with PMP design guidelines.
- 53<sup>rd</sup> Street – the sidewalk adjacent to the existing garage is about nine feet wide with a continuous five-foot through pedestrian passage zone and a four-foot utility zone which accommodates trees, signs, utility poles, and light poles, which is consistent with PMP design guidelines.
- Dover Street – the sidewalks on both sides of the street between 52<sup>nd</sup> and 53<sup>rd</sup> Streets are about nine feet wide with a minimum five-foot through pedestrian passage zone and a four-foot utility zone which accommodates trees, signs, and light poles, which is consistent with PMP design guidelines.

The signalized CHRCO Garage Driveway/52<sup>nd</sup> Street intersection provides a high-visibility (ladder striping) crosswalk on the east approach of the intersection and serves as a protected pedestrian crossing across 52<sup>nd</sup> Street between the Hospital south of 52<sup>nd</sup> Street and the Garage and Outpatient Center Building 1 (OPC-1) north of 52<sup>nd</sup> Street. More than 200 pedestrians per hour use this crossing during peak periods. In addition to this signalized at-grade crossing, a skyway over 52<sup>nd</sup> Street also provides direct access between OPC-1 and the Hospital. An uncontrolled high-visibility crosswalk is also marked on the west approach of the Dover Street/52<sup>nd</sup> Street intersection.

The signalized intersections on Martin Luther King Jr. Way with 52<sup>nd</sup> and 53<sup>rd</sup> Streets provide marked crosswalks on all approaches. Crosswalks across Martin Luther King Jr. Way are long, about 120 feet long, and require pedestrians to cross seven lanes of traffic plus a wide median. Both signals provide adequate time for pedestrians to cross the street. The Martin Luther King Jr. Way/ 53<sup>rd</sup> Street intersection provides pedestrian refuges with pedestrian push-buttons in the median on Martin Luther King Jr. Way. However, the Martin Luther King Jr. Way/52<sup>nd</sup> Street intersection does not provide a pedestrian refuge across the south approach or median push-buttons in the north or south crossings. In addition, at the northwest and southwest corners of the Martin Luther King Jr. Way/52<sup>nd</sup> Street intersection, curb ramps do not lead directly into the marked crosswalks, which hinders users with mobility issues from easily crossing the street.

Telegraph Avenue, located about one-quarter mile east of the CHRCO is a corridor with commercial destinations and is served by AC Transit Routes 1/1R, which is one of the most heavily used AC Transit routes providing frequent bus service to and from Berkeley and East Oakland. In addition, other CHRCO services are also provided on Claremont Avenue east of Telegraph Avenue. Therefore, 52<sup>nd</sup> Street is an important pedestrian route for CHRCO. East of Dover Street, pedestrians on 52<sup>nd</sup> Street must walk under the SR 24 overpass, which provides six-foot sidewalks on both sides of the street, to reach Telegraph Avenue. Pedestrian-scale lighting is provided on the south side of 52<sup>nd</sup>

Street underneath the SR 24 overpass. On the south side of 52<sup>nd</sup> Street, pedestrians cross two lanes of stop-controlled Eastbound SR 24 Off-Ramp, and on the north side of 52<sup>nd</sup> Street, pedestrians cross the uncontrolled two-lane SR 24 On-Ramp.

**f. Parking Conditions.** The existing on-street and off-street parking supply and occupancy within the project study area are described below.

**(1) On-Street Parking.** Most streets in the project vicinity provide on-street parking on both sides of the street. **Figure IV.D-5** shows the on-street parking supply within walking distance (about quarter of a mile) of CHRCO. More than 1,000 on-street parking spaces are provided in the study area, which can be classified into the following categories:

- **Metered Spaces** are generally provided along non-residential streets such as Martin Luther King Jr. Way and 52<sup>nd</sup> Street adjacent to the Main Hospital. The metered spaces have either a two-hour or five-hour time limit. There are about 60 metered parking spaces in the study area. Metered parking currently costs \$2.00 per hour (Monday through Saturday, 8:00 a.m. to 6:00 p.m.). Currently, most of the parking meters along 52<sup>nd</sup> Street are missing or broken.
- **Unregulated Parking** is parking that is free year-round and has no time limits. Most of the on-street parking provided in the study area, including all residential streets, is unregulated spaces.

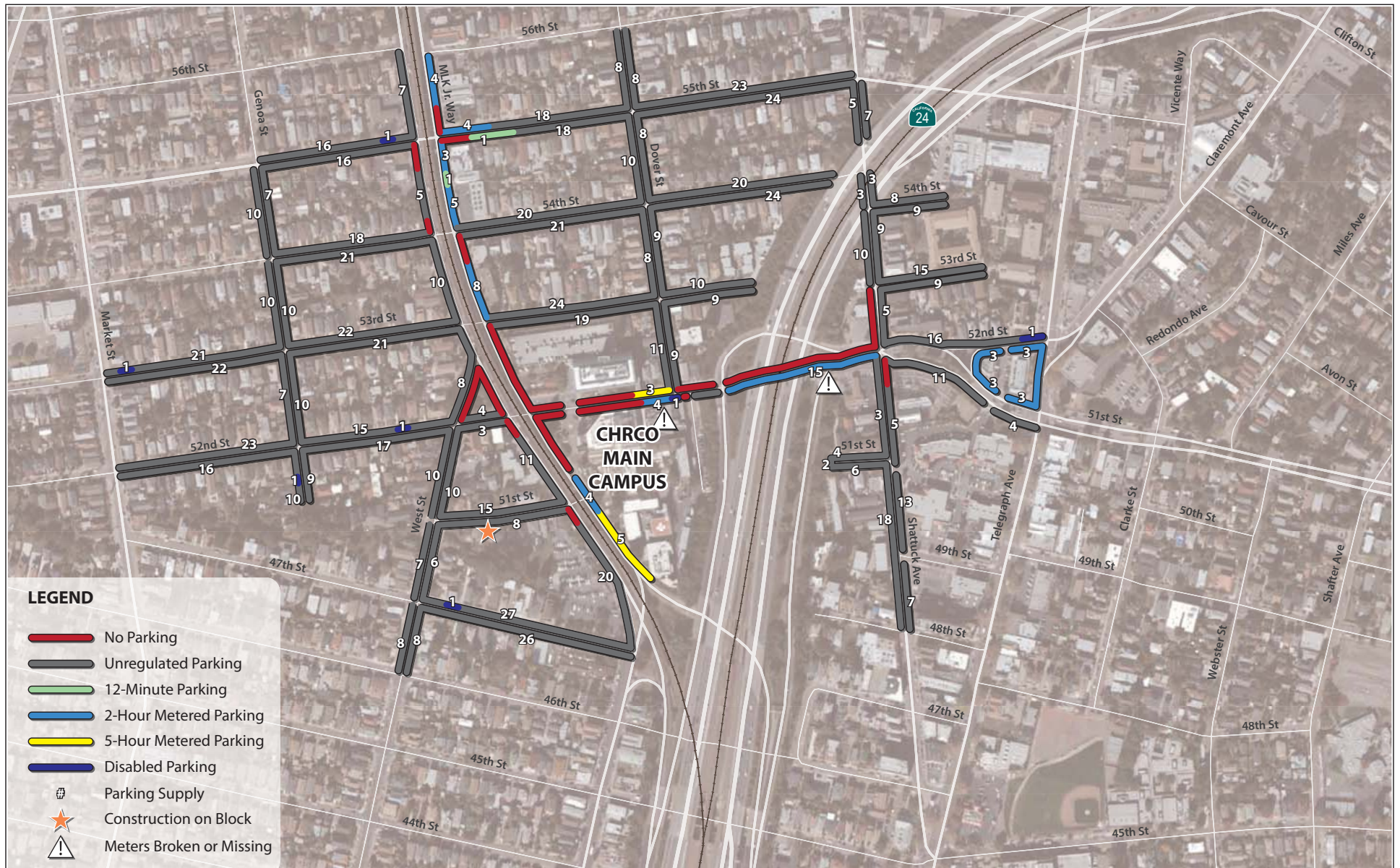
In addition, there are also disabled parking spaces throughout the study area.

**Figure IV.D-6** shows the on-street parking occupancy on a weekday mid-afternoon based on observations in September 2013. The on-street parking adjacent to and within one or two blocks of CHRCO is generally at or near 100 percent occupancy. However, parking occupancies decrease on streets further away from CHRCO.

**(2) Off-Street Parking.** CHRCO currently can accommodate up to about 1,100 parked vehicles in the following off-street parking facilities:

- **Main Garage** – This garage, located just north of OPC-1, provides 650 parking spaces in five levels. It serves both patients/visitors and employees and has two exit gates and one entrance gate. Vehicles enter the garage from 52<sup>nd</sup> Street and exit either to 52<sup>nd</sup> Street or Martin Luther King Jr. Way. Public parking at the main garage costs \$1.50 per one-half hour up to \$7.50 per day. For employees, day-time parking permits cost \$30.00 and night-time parking costs \$20.00 for a two-week period.
- **Physicians' Garage** – This 147-space garage is located in the ground and basement levels of the same structure as the Main Garage and can be entered by access-card only. It is primarily reserved for physicians and hospital senior management. The one exit gate and one entrance gate are adjacent to the main garage driveways. Vehicles enter the garage from 52<sup>nd</sup> Street and exit to Martin Luther King Jr. Way. Parking in the Physicians' Garage costs the same as employee parking in the Main Garage.





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FIGURE IV.D-5

SOURCE: FEHR & PEERS, 2014.

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CHRCO Campus Master Plan Project EIR  
Existing On-Street Parking Supply



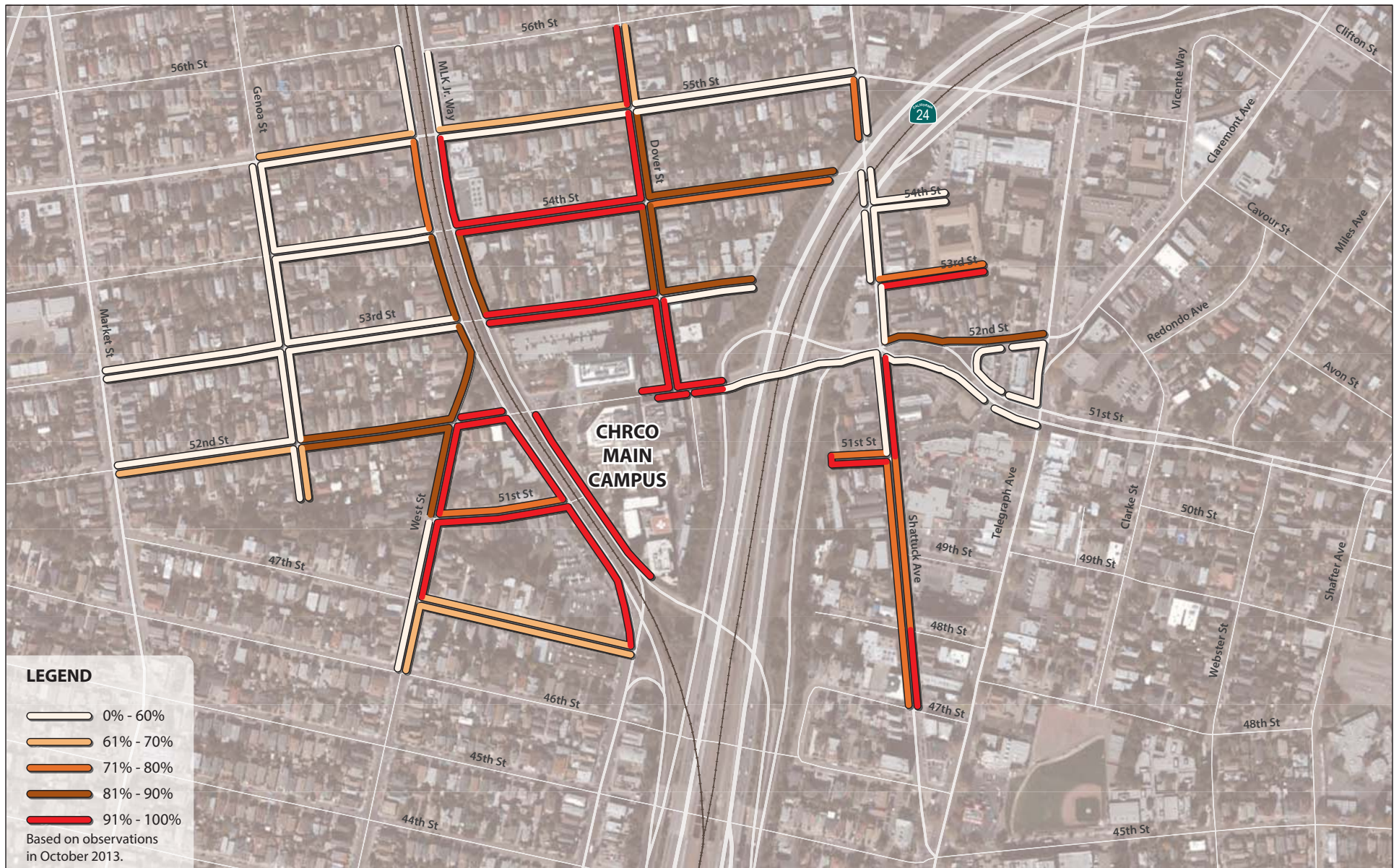


FIGURE IV.D-6

CHRCO Campus Master Plan Project EIR  
Existing Weekday Afternoon On-Street Parking Occupancy

SOURCE: FEHR & PEERS, 2014.

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- **West Lot** – This surface lot is reserved for employee parking only, and is located west of Martin Luther King Jr. Way, between 47<sup>th</sup> and 51<sup>st</sup> Streets. This lot provides 182 striped spaces and can accommodate up to about 50 additional vehicles using stacked valet parking, which is typically used about four days per week, nine months per year when parking demand is high. Thus, the West Lot can accommodate up to 232 parked vehicles. Parking demand at other times of the year is at or below the striped parking capacity; therefore valet parking is not needed. Access to and from this lot is provided through gates on 51<sup>st</sup> Street (entrance only), Martin Luther King Jr. Way (exit only), and 47th Street (exit only). Employee parking permits at the West Lot cost about \$16.50 per two-week period.
- **South Lot** – This surface lot is reserved for employees only and is located east and south of the main hospital, with gated access on 52<sup>nd</sup> Street just east of Dover Street. The lot currently provides 48 parking spaces. Employee parking permits at the South Lot cost \$16.50 per two-week period.
- **Other Lots** – The former residential buildings on 52<sup>nd</sup>, 53<sup>rd</sup>, and Dover Streets also provide off-street parking facilities, such as garages or parking lots. Combined, these buildings provide about 30 off-street parking spaces that are primarily used by CHRCO staff.

**Figure IV.D-7** shows the hourly parking demand at the CHRCO parking facilities on a typical weekday based on data collected in September 2013. **Table IV.D-6** summarizes parking supply and peak demand at each parking facility.

**Table IV.D-6: CHRCO Parking Demand by Facility**

| Parking Facility                           | Supply (Spaces)  | Peak Demand <sup>a</sup> | Parking Occupancy |
|--|------------------|--------------------------|-------------------|
| Main Garage                                | 650              | 625                      | 96%               |
| Physicians' Garage                         | 147              | 106                      | 72%               |
| West Lot                                   | 232 <sup>b</sup> | 192                      | 83%               |
| South Lot                                  | 48               | 45                       | 94%               |
| Other                                      | 30               | 30                       | 100%              |
| <b>Off-Street Peak Demand <sup>b</sup></b> | <b>1,107</b>     | <b>989</b>               | <b>89%</b>        |

<sup>a</sup> Peak demand for each individual parking facility.

<sup>b</sup> Includes 50 valet parking spaces.

Source: based on data collected by Fehr & Peers in September 2013.

The existing parking demand was measured by driveway counts conducted in September 2013 at the entrances and exits at CHRCO's parking facilities. Parking occupancy surveys were also conducted to verify parking demand.

The overall parking occupancy at CHRCO facilities is generally above 85 percent between 9:00 a.m. and 3:00 p.m. The overall peak demand for parking is at around 1:30 p.m. when off-street parking demand is about 89 percent of the parking supply. Parking demand at the Main Garage, which provides the primary parking for both employees and patients/visitors, is typically above 90 percent between 9:00 a.m. and 2:00 p.m.

In addition, the number of CHRCO employees and patients/visitors using on-street parking was also estimated based on the results of the employee and patient/visitor surveys (see section 5.a.(3) for more detail on these surveys) and observations at the site. It is estimated that about 10 percent of the CHRCO parking demand, corresponding to about 124 parked vehicles at peak times, uses on-street parking. CHRCO employees and patients/visitors who park on-street mostly use the residential streets

north of the project site, such as 53<sup>rd</sup>, 54<sup>th</sup>, and Dover Streets, because they provide unrestricted and non-metered parking. There are about 300 on-street parking spaces within two blocks of CHRCO. Thus, it is estimated that about 40 percent of the total parking spaces within two blocks of CHRCO are being occupied by CHRCO employees and patients/visitors during peak periods. It is estimated that the total peak CHRCO parking demand, including on-street parking, occurs around 1:30 p.m., when the parking demand is about 1,113 spaces.

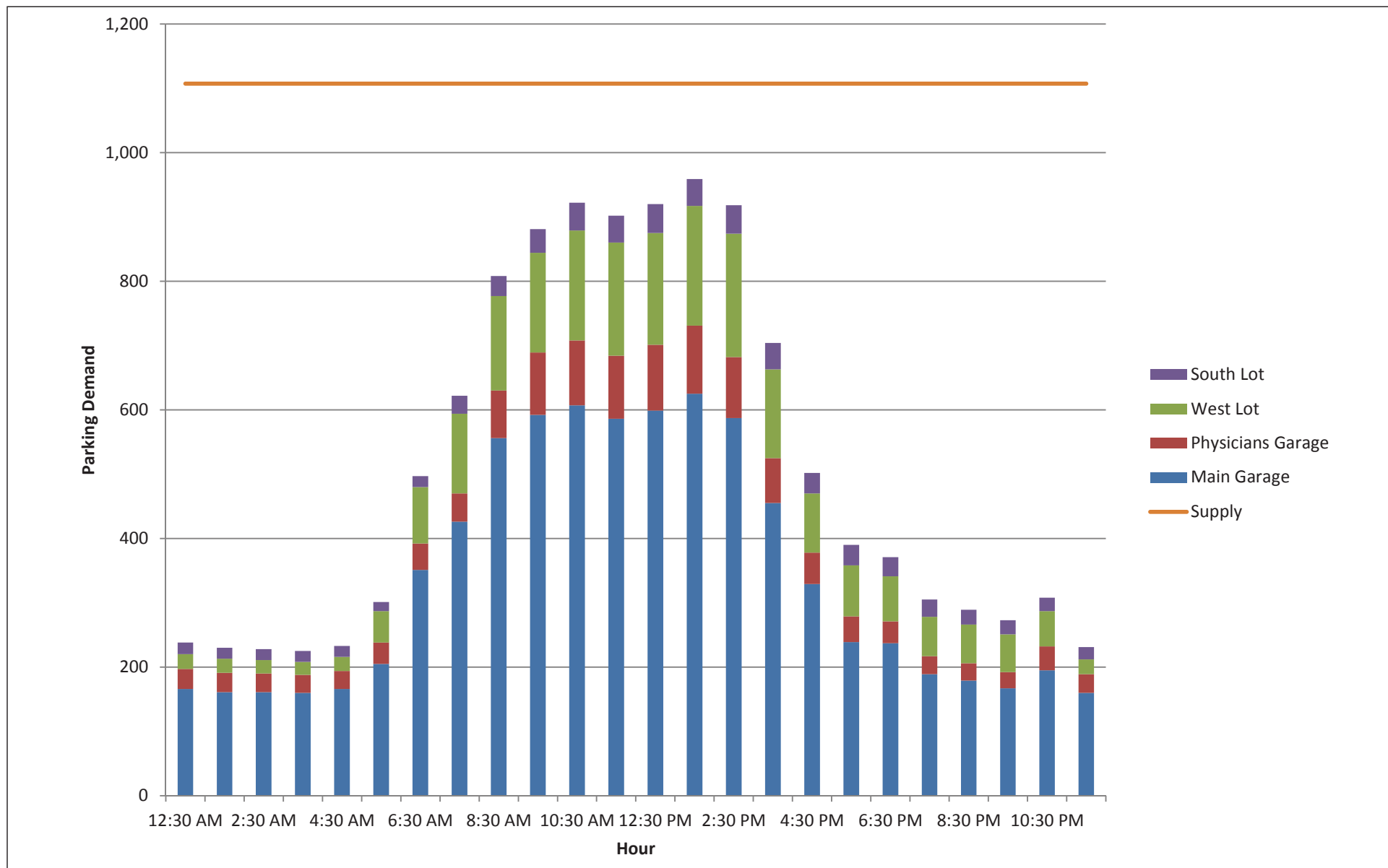
**g. Existing Traffic Conditions.** Traffic conditions at study intersections in the project vicinity are described below.

**(1) Traffic Volumes.** Intersection automobile and bicycle turning movement counts, as well as pedestrian counts, were collected at the study intersections on weekdays in September and November 2013. The count data were collected on clear days, while area schools were in normal session. The traffic data collection was conducted during the morning (7:00 a.m. to 9:00 a.m.) and evening (3:00 p.m. to 6:00 p.m.). Appendix C presents the traffic counts at the study intersections. These time periods were selected because trips generated by the proposed project, in combination with background traffic, are expected to represent typical worst traffic conditions at these times. Within the peak periods, the peak hours (i.e., the hour with the highest traffic volumes observed in the study area) are from 8:00 a.m. to 9:00 a.m. (AM peak hour) and from 4:45 p.m. to 5:45 p.m. (PM peak hour).

Field reconnaissance was also performed in which intersection lane configurations and signal operations data were collected. Intersection operations were also observed at the study intersections. In addition, the City of Oakland provided signal timing data for the signalized study intersections.

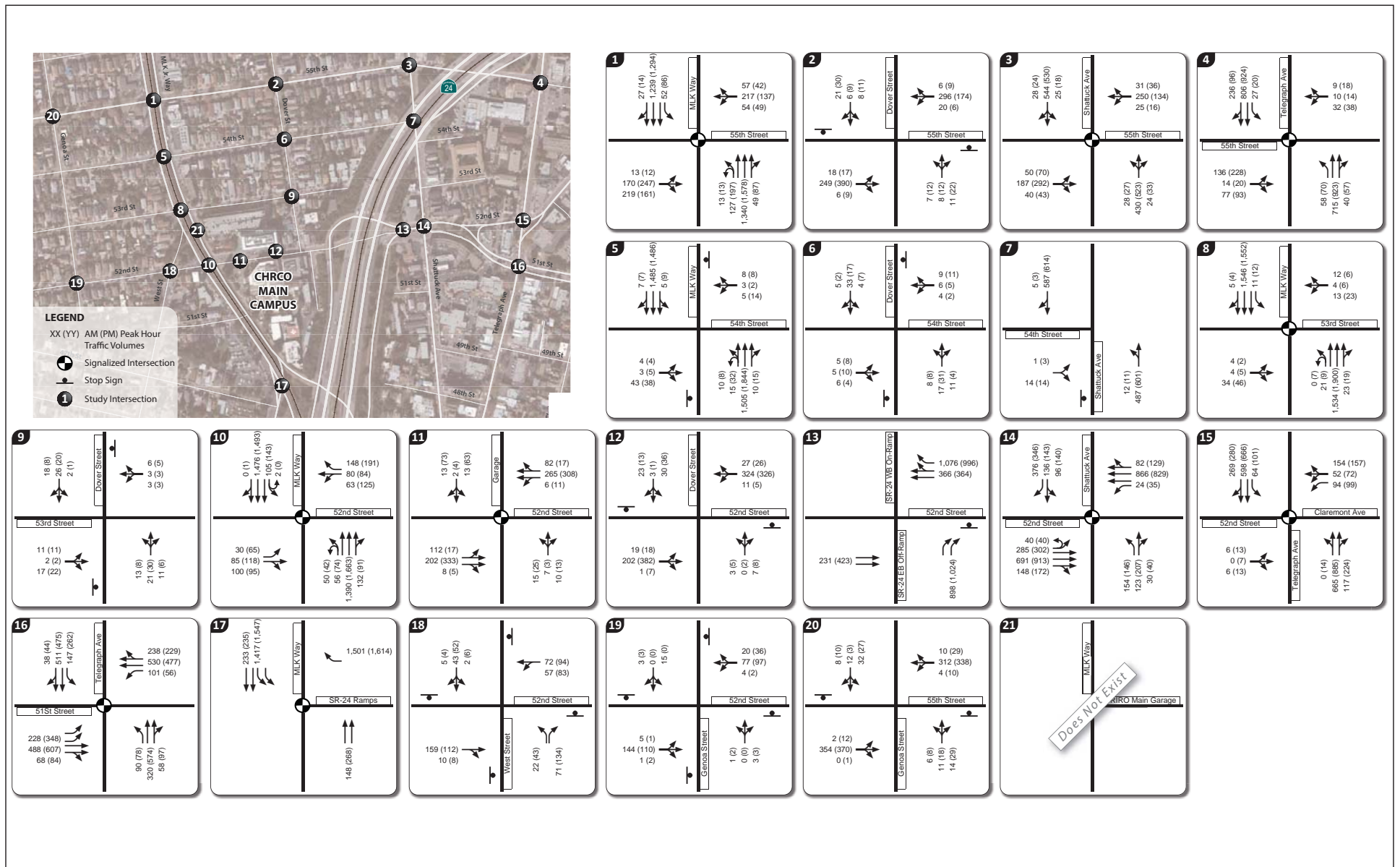
**Figure IV.D-8** presents the existing AM and PM peak hour traffic volumes, intersection lane configurations and traffic control devices at the study intersections. **Figure IV.D-9** presents the existing pedestrian and bicycle volumes for all study intersections.

**(2) Level of Service Methodology.** Intersection operations are described using the term “Level of Service” (LOS). Level of Service is a qualitative description of traffic operations from the vehicle driver perspective and consists of the delay experienced by the driver at the intersection. It ranges from LOS A, with no congestion and little delay, to LOS F, with excessive congestion and delays. Different methodologies are used to assess signalized and unsignalized (stop-controlled) intersections.



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FIGURE IV.D-7



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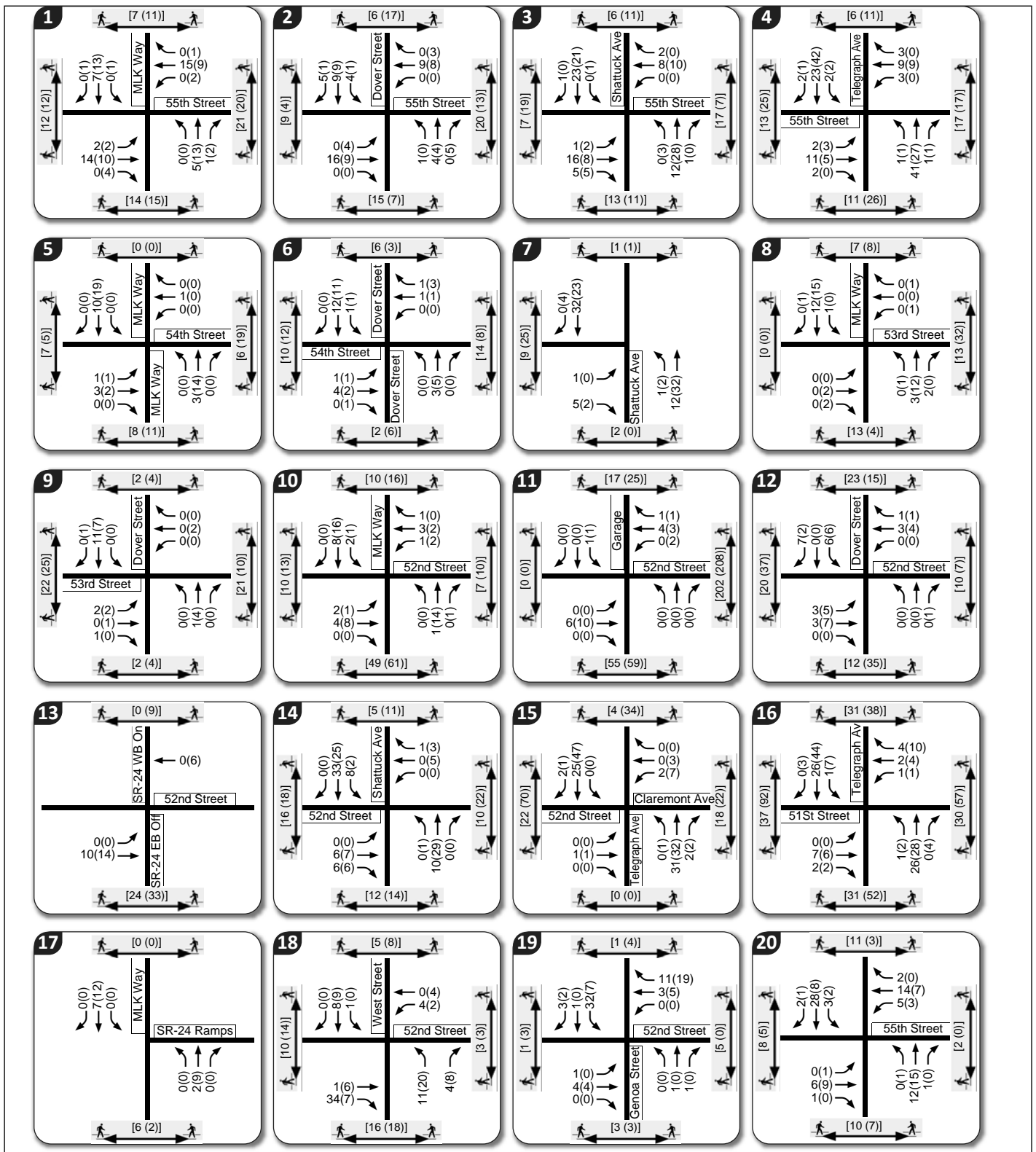


FIGURE IV.D-8

CHRCO Campus Master Plan Project EIR  
Existing Conditions - Peak Hour Traffic Volumes,  
Lane Configurations, and Intersection Controls

SOURCE: FEHR & PEERS, 2014.

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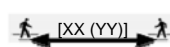


LSA

FIGURE IV.D-9

LEGEND

XX (YY) AM (PM) Peak Hour  
Bicycle Volumes



XX (YY) AM (PM) Peak Hour  
Pedestrian Volumes

NOT TO SCALE

CHRCO Campus Master Plan Project EIR

Existing Conditions

Peak Hour Pedestrian and Bicycle Volumes

SOURCE: FEHR & PEERS, 2014.

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**Signalized Intersection.** At signalized intersections, operations are evaluated using the methodology described in the 2000 Highway Capacity Manual (HCM) and the Synchro traffic analysis software program. This methodology uses various intersection characteristics, such as traffic volumes, lane geometries, and signal timing parameters, to estimate average control delays and assign an LOS. Control delay is defined as the delay associated with deceleration, stopping, moving up in the queue, and acceleration experienced by drivers at an intersection. **Table IV.D-7**, provides a description of various LOS and the corresponding ranges of delays for signalized intersections.

**Table IV.D-7: Intersection Level of Service Definitions**

| Unsignalized Intersections  |                                       | Level of Service Grade | Signalized Intersections                |  |
|---|---------------------------------------|------------------------|---|--|
| Description   | Average Total Vehicle Delay (Seconds) |                        | Average Control Vehicle Delay (Seconds) | Description  |
| No delay for stop-controlled approaches.  | ≤10.0                                 | A                      | ≤10.0                                   | Free Flow or Insignificant Delays: Operations with very low delay, when signal progression is extremely favorable and most vehicles arrive during the green light phase. Most vehicles do not stop at all.   |
| Operations with minor delay.  | >10.0 and ≤15.0                       | B                      | >10.0 and ≤20.0                         | Stable Operation or Minimal Delays: Generally occurs with good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average delay. An occasional approach phase is fully utilized.  |
| Operations with moderate delays.  | >15.0 and ≤25.0                       | C                      | >20.0 and ≤35.0                         | Stable Operation or Acceptable Delays: Higher delays resulting from fair signal progression and/or longer cycle lengths. Drivers begin having to wait through more than one red light. Most drivers feel somewhat restricted.  |
| Operations with increasingly unacceptable delays.   | >25.0 and ≤35.0                       | D                      | >35.0 and ≤55.0                         | Approaching Unstable or Tolerable Delays: Influence of congestion becomes more noticeable. Longer delays result from unfavorable signal progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop. Drivers may have to wait through more than one red light. Queues may develop, but dissipate rapidly, without excessive delays. |
| Operations with high delays, and long queues.   | >35.0 and ≤50.0                       | E                      | >55.0 and ≤80.0                         | Unstable Operation or Significant Delays: Considered to be the limit of acceptable delay. High delays indicate poor signal progression, long cycle lengths and high volume to capacity ratios. Individual cycle failures are frequent occurrences. Vehicles may wait through several signal cycles. Long queues form upstream from intersection.               |
| Operations with extreme congestion, and with very high delays and long queues unacceptable to most drivers. | >50.0                                 | F                      | >80.0                                   | Forced Flow or Excessive Delays: Occurs with oversaturation when flows exceed the intersection capacity. Represents jammed conditions. Many cycle failures. Queues may block upstream intersections.   |

Source: Transportation Research Board, Special Report 209, *Highway Capacity Manual*, 2000.

**Unsignalized Intersections.** At unsignalized intersection, LOS is also analyzed using the 2000 HCM and Synchro software. Delay is calculated for movements that are controlled by a stop sign or that must yield the right-of-way. This study reports the delay and corresponding LOS for the approach with the highest delay and the whole intersection. The LOS ranges for unsignalized intersections are

shown in **Table IV.D-7**. They are lower than the delay ranges for signalized intersections because drivers will tolerate more delay at signals.

**(3) Intersection Operations.** This study evaluated existing traffic operations for the weekday AM and PM peak hours at the study intersections. The existing vehicle, bicycle, and pedestrian volumes were used with the existing lane configurations and signal timing parameters as inputs into the LOS calculations to evaluate current operations. **Table IV.D-8** summarizes the intersection analysis results. Appendix C provides the detailed intersection LOS calculation worksheets.

Generally, the City of Oakland's Thresholds of Significance consider LOS E or better acceptable for intersections located in Downtown or on arterials providing access to Downtown, and LOS D or better acceptable for other intersections. All study intersections, except one, currently operate at acceptable LOS D or better during both weekday AM and PM peak hours. The stop-controlled SR 24 Off-Ramp at 52<sup>nd</sup> Street (Intersection #13) operates at LOS F during the PM peak hour.

**(4) CMP and MTS Roadway Segments.** ACTC conducts periodic monitoring of the major roadways on the Congestion Management Program (CMP) and Metropolitan Transportation System (MTS) in Alameda County. The most recent *Level of Service Monitoring on the Congestion Management Program Roadway Network* was released in January 2013. The ACTC monitoring report assesses existing freeway operations through "floating car" travel time surveys, which are conducted on all freeway segments during the evening peak hours (4:00 p.m. to 6:00 p.m.), and on selected freeway segments during the morning peak hours (7:00 a.m. to 9:00 a.m.). Based on the results of these surveys, ACTC assigns a LOS grade to each segment according to the method described in the 1985 HCM. Any freeway segment with an average speed less than 30 miles per hour is assigned LOS F. Freeway interchanges with speeds below 50 percent of free flow speed are assigned LOS F. The travel time surveys concluded that 27 freeway segments, 11 arterial segments and one freeway-to-freeway connectors within Alameda County operate at LOS F during the PM peak hours, including the following nine freeway segments in the project vicinity:

- I 80 eastbound: Toll Plaza to I 580
- I 580 eastbound: I 80 to I 980 (grandfathered segment)<sup>2</sup>
- I 580 westbound: SR 24 to I 880
- I 880 northbound: between I 80 Ramps
- SR 13 northbound: Moraga Avenue to Hiller Drive
- SR 13 southbound: Redwood Road to I 580
- SR 24 eastbound: I 580 to Broadway/SR 13 (grandfathered segment)
- SR 24 eastbound: Broadway/SR 13 to Caldecott Tunnel (grandfathered segment)
- SR 13/SR 24 Interchange

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<sup>2</sup> These freeway segments operated at LOS F during the initial ACTC data collection effort in 1991, and are therefore "grandfathered," meaning that they are exempt from LOS standards. The other segments are not exempt meaning that they operate at unacceptable conditions based on ACTC standards. ACTC requires preparation of a deficiency plan for non-grandfathered segments that fail to meet the established standards.

**Table IV.D-8: Existing Intersection LOS Summary**

| Intersection |   | Traffic Control <sup>a</sup> | Peak Hour | Delay <sup>b</sup> (seconds) | LOS   |
|--------------|---|------------------------------|-----------|------------------------------|-------|
| 1            | Martin Luther King Jr. Way/55 <sup>th</sup> Street        | Signal                       | AM        | 18.9                         | B     |
|              |   |                              | PM        | 22.3                         | C     |
| 2            | Dover Street/55 <sup>th</sup> Street                      | SSSC                         | AM        | 1.8 (13.3)                   | A (B) |
|              |   |                              | PM        | 2.1 (13.8)                   | A (B) |
| 3            | Shattuck Avenue/55 <sup>th</sup> Street                   | Signal                       | AM        | 17.0                         | B     |
|              |   |                              | PM        | 18.6                         | B     |
| 4            | Telegraph Avenue/55 <sup>th</sup> Street                  | Signal                       | AM        | 9.4                          | A     |
|              |   |                              | PM        | 15.3                         | B     |
| 5            | Martin Luther King Jr. Way/54 <sup>th</sup> Street        | SSSC                         | AM        | 0.5 (21.8)                   | A (C) |
|              |   |                              | PM        | 0.6 (23.1)                   | A (C) |
| 6            | Dover Street/54 <sup>th</sup> Street                      | SSSC                         | AM        | 3.6 (9.2)                    | A (A) |
|              |   |                              | PM        | 4.4 (9.5)                    | A (A) |
| 7            | Shattuck Avenue/54 <sup>th</sup> Street                   | SSSC                         | AM        | 0.3 (12.7)                   | A (B) |
|              |   |                              | PM        | 0.4 (14.4)                   | A (B) |
| 8            | Martin Luther King Jr. Way/53 <sup>rd</sup> Street        | Signal                       | AM        | 3.7                          | A     |
|              |   |                              | PM        | 3.7                          | A     |
| 9            | Dover Street/53 <sup>rd</sup> Street                      | SSSC                         | AM        | 3.8 (9.3)                    | A (A) |
|              |   |                              | PM        | 4.1 (9.2)                    | A (A) |
| 10           | Martin Luther King Jr. Way/ 52 <sup>nd</sup> Street       | Signal                       | AM        | 18.0                         | B     |
|              |   |                              | PM        | 22.1                         | C     |
| 11           | CHRCO Garage Driveways/52 <sup>nd</sup> Street            | Signal                       | AM        | 12.3                         | B     |
|              |   |                              | PM        | 14.1                         | B     |
| 12           | Dover Street-Hospital Driveway/52 <sup>nd</sup> Street    | SSSC                         | AM        | 1.8 (13.1)                   | A (B) |
|              |   |                              | PM        | 1.5 (14.7)                   | A (B) |
| 13           | SR 24 Ramps/52 <sup>nd</sup> Street                       | SSSC                         | AM        | 4.8 (13.6)                   | A (B) |
|              |   |                              | PM        | ** (**)                      | F (F) |
| 14           | Shattuck Avenue/52 <sup>nd</sup> Street                   | Signal                       | AM        | 29.2                         | C     |
|              |   |                              | PM        | 36.0                         | D     |
| 15*          | Telegraph Avenue-Claremont Avenue/52 <sup>nd</sup> Street | Signal                       | AM        | 14.3                         | B     |
|              |   |                              | PM        | 17.2                         | B     |
| 16*          | Telegraph Avenue/51 <sup>st</sup> Street                  | Signal                       | AM        | 30.6                         | C     |
|              |   |                              | PM        | 45.2                         | D     |
| 17           | SR 24 Ramps/Martin Luther King Jr. Way                    | Signal                       | AM        | 9.4                          | A     |
|              |   |                              | PM        | 19.8                         | B     |
| 18           | West Street/52 <sup>nd</sup> Street                       | AWSC                         | AM        | 8.1                          | A     |
|              |   |                              | PM        | 8.4                          | A     |
| 19           | Genoa Street/52 <sup>nd</sup> Street                      | AWSC                         | AM        | 7.7                          | A     |
|              |   |                              | PM        | 7.6                          | A     |
| 20           | Genoa Street/55 <sup>th</sup> Street                      | SSSC                         | AM        | 1.8 (16.7)                   | A (C) |
|              |   |                              | PM        | 2.1 (17.8)                   | A (C) |

<sup>a</sup> Signal = intersection is controlled by a traffic signal; AWSC = intersection is controlled by stop-signs on all approaches; SSSC = Intersection is controlled by a stop-sign on the side-street approach;

<sup>b</sup> For signalized intersections, average intersection delay and LOS based on the 2000 HCM method is shown. For side-street stop-controlled intersections, delays for worst movement and average intersection delay are shown: intersection average (worst movement)

\* Denotes an intersection located in Downtown or on an arterial providing access to Downtown where LOS E is the LOS standard. For all other intersections, not located in Downtown or on an arterial providing access to Downtown, LOS D is the LOS standard.

\*\* Delay cannot be estimated accurately because the Synchro software does not correctly account for the queues on eastbound 52<sup>nd</sup> Street at Shattuck Avenue blocking the off-ramp. Reported LOS is based on field observations.

Source: Fehr & Peers, 2014.



In addition, the following five segments located in the project vicinity operate at LOS F during the AM peak hours:

- I 80 westbound: I 580 to Toll Plaza
- I 580 westbound: SR 13 to Fruitvale Avenue
- I 580 westbound: SR 24 to I 880
- SR 13 northbound: Moraga Avenue to Hiller Drive
- SR 24 eastbound: Broadway/SR 13 to Caldecott Tunnel

Based on the LOS Monitoring Report, the non-freeway CMP and MTS roadway segments in the project vicinity operate at LOS E or better during both AM and PM peak hours.

**h. Neighborhood Access and Traffic Calming Features.** Figure IV.D-10 shows the existing traffic calming features in the neighborhoods surrounding CHRCO. The general intent of these traffic calming devices is to reduce speeding and discourage cut-through traffic in residential neighborhoods. Most of the residential streets surrounding CHRCO currently have speed humps installed on them.

**i. Planned Transportation Network Changes.** Several changes are planned for the various transportation modes in the project vicinity, as described below. Planned changes include improvement projects planned by the City of Oakland or mitigation measures proposed by other development projects. These are changes that are not related to the proposed project and would be implemented regardless of the CHRCO project. Changes that have full approval and funding would be assumed in the analysis of future conditions in the project EIR. However, not all of the planned changes have finalized design plans, full approvals, and/or funding. Changes lacking final design, full approval, and/or full funding are not considered reasonably foreseeable, and therefore would not be assumed in the analysis of future conditions. Planned changes by travel mode are summarized below:

**(1) Planned Transit Changes.** There are no planned changes to the transit service in the vicinity of the proposed project.

**(2) Planned Bicycle/Pedestrian Changes.** The City of Oakland Bicycle Master Plan Update proposes the following improvements to the bicycle facilities in the project vicinity:

- Provide Class 2 bicycle lanes along Telegraph Avenue. Telegraph Avenue (Aileen to 20th Streets) is provisionally designated as part of the proposed bikeway network. The City of Oakland is currently studying various options for Telegraph Avenue as part of a Complete Streets project. Currently, there is no finalized design, and the improvement does not have full funding or approval. Therefore, this project will not be assumed in the analysis of future conditions.
- Class 3A Arterial Bicycle Routes on 51<sup>st</sup> Street/Pleasant Valley Avenue, east of Shattuck Avenue. Since the project would not modify the existing travel lane configurations or controls at the study intersections, it would not affect the intersection operations analysis. Currently, there is no funding for this improvement. Therefore, this project will not be assumed in the analysis of future conditions.

**(3) Caldecott Tunnel Improvement Project Settlement Agreement.** The Caldecott Tunnel Improvement Project Settlement Agreement provided funds to the Fourth Bore Coalition, and Cities of Oakland and Berkeley to ameliorate the impacts of adding a fourth bore to the Caldecott Tunnel in

the greater community surrounding the SR 24 corridor between I 580 and Caldecott Tunnel, and improve pedestrian, bicycle, transit, and local circulation.

City of Oakland finalized and approved a list of 37 improvement projects in March 2011 based on public input and preliminary conceptual designs and cost estimates. The cost of all improvement projects in the City of Oakland's final project list exceeds the funding provided by the Settlement Agreement. Thus, the project list has been prioritized with only some of the improvement projects expected to be funded. The following two improvements are located near CHRCO. However, neither improvement is expected to be funded because they ranked below the funding level available on the prioritized project list. Therefore, they are not included in the analysis of future no project conditions. These two improvements are:

- Claremont Avenue/52<sup>nd</sup> Street/Telegraph Avenue intersection – Eliminate the slip right-turn lane from northbound Telegraph Avenue to Claremont Avenue, upgrade traffic signal control equipment to allow countdown pedestrian signal heads.
- 52<sup>nd</sup> Street/Shattuck Avenue intersection – Install a traffic signal at eastbound SR 24 Off-Ramp on 52<sup>nd</sup> Street just west of Shattuck Avenue and coordinate with the existing signal, Tee 52<sup>nd</sup> Street into 51<sup>st</sup> Street.

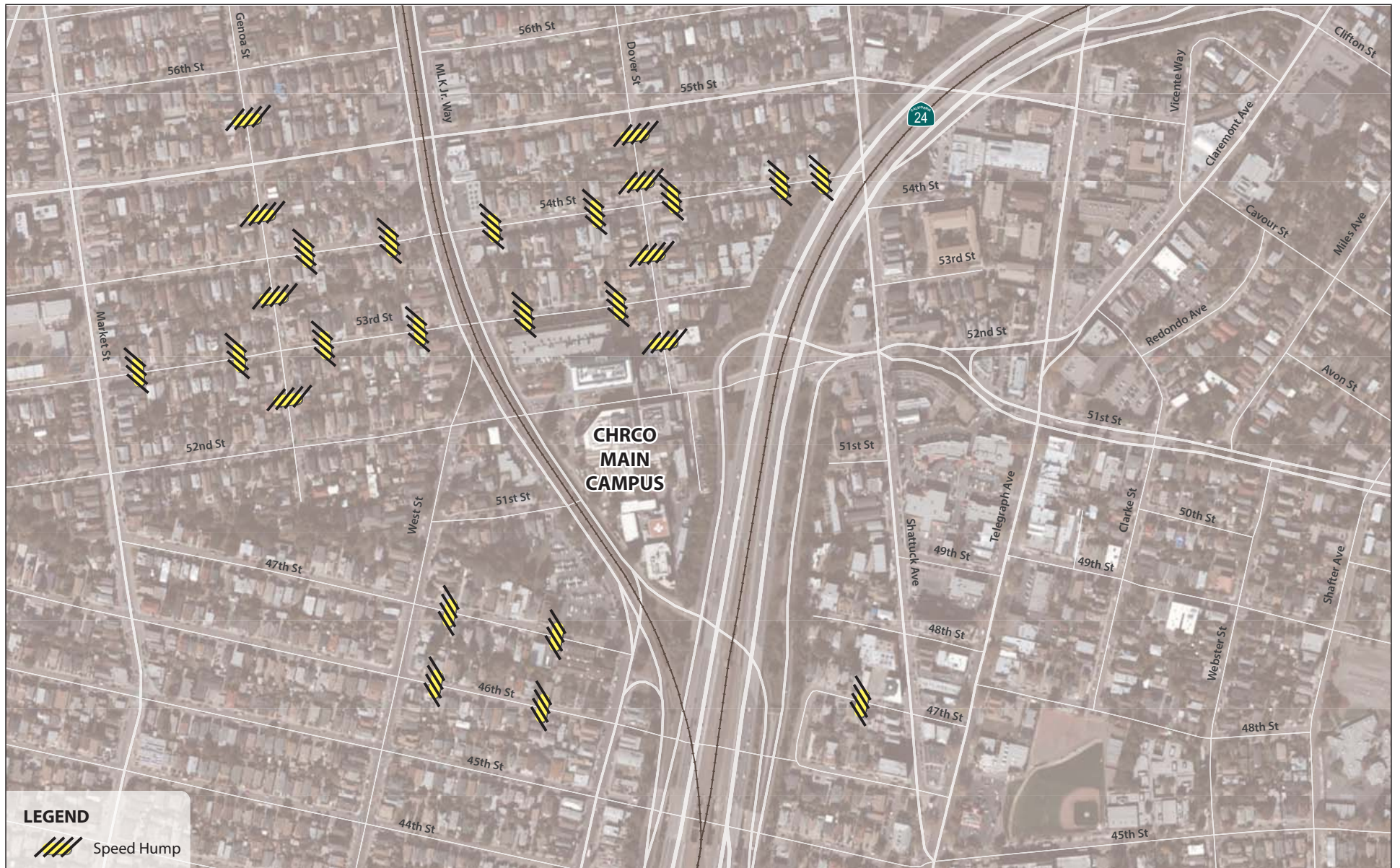
**(4) Planned Roadway and Intersection Changes.** There are no planned changes to the roadways and intersections in the vicinity of the proposed project.

## **2. 2020 No Project Conditions**

This section evaluates traffic operations at the study intersections under 2020 No Project Conditions without the proposed project. This section describes the development of traffic volume forecasts, the street network, and the intersection operations under 2020 No Project Conditions.

**a. 2020 No Project Traffic Forecasts.** The 2020 No Project traffic volume forecasts were developed using the ACTC Model and existing traffic volumes. The main inputs to the 2020 forecasting process are the model outputs from a modified version of the ACTC Model and the existing traffic counts, which reflect past, present, and future developments expected by year 2020.

The ACTC Model released in June 2011 which uses land use data consistent with Association of Bay Area Government (ABAG) Projection 2009 was used for this analysis. The land use database was modified to reflect more accurate land use projections in the City of Oakland including development projects on City's Active Major Project list, and changes in land use proposed by the Broadway Valdez District and Lake Merritt Station Area Specific Plans. This analysis assumes no growth at CHRCO under 2020 No Project conditions.



LSA

FIGURE IV.D-10

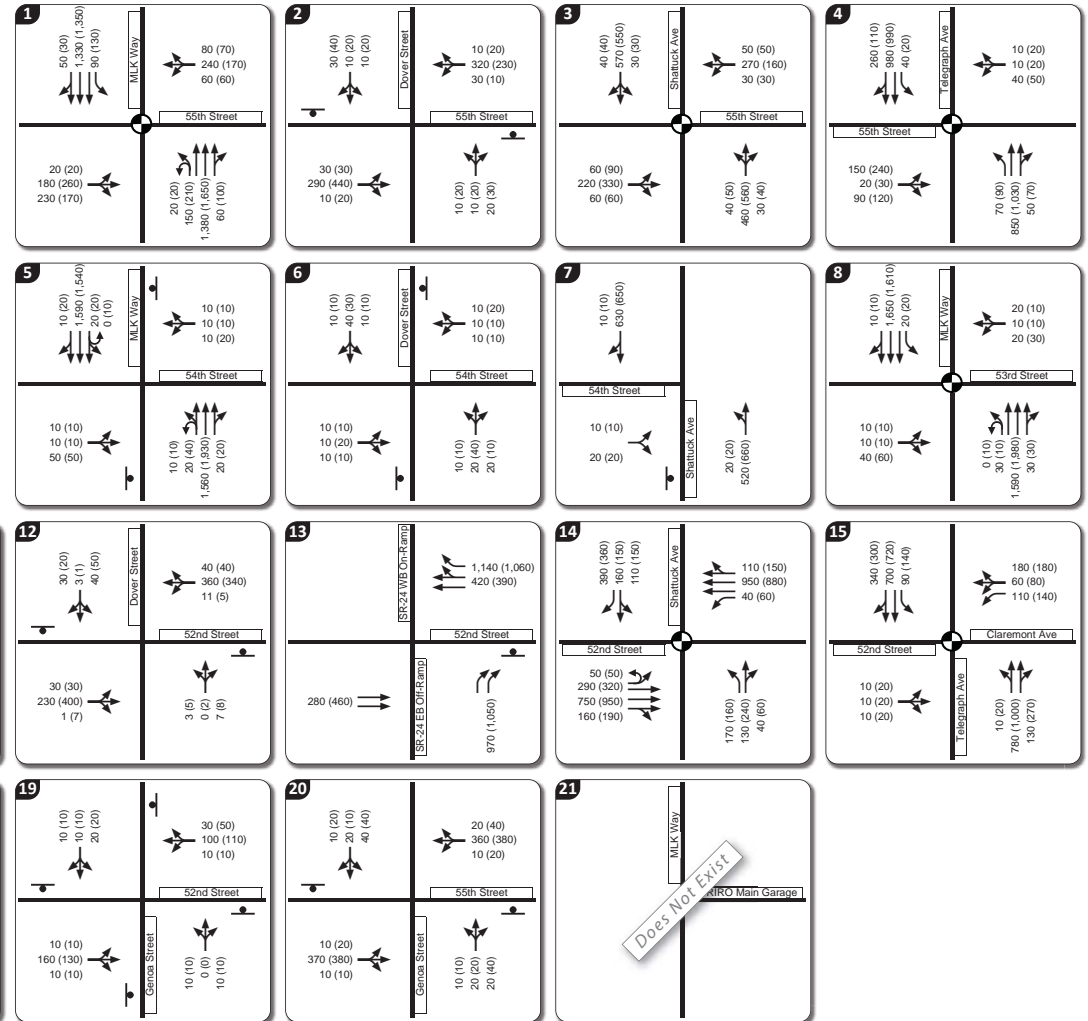


SOURCE: FEHR & PEERS, 2014.

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CHRCO Campus Master Plan Project EIR  
Existing Traffic Calming Features





LSA

NOT TO SCALE



FIGURE IV.D-11

CHRCO Campus Master Plan Project EIR  
2020 No Project - Peak Hour Traffic Volumes,  
Lane Configurations, and Intersection Controls

SOURCE: FEHR & PEERS, 2014.

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The AM and PM peak hour roadway segment volumes forecasted by the ACTC Model for year 2020 were used to develop 2020 turning movement forecasts at the study intersections using the “Furness” process, which “adjusts” existing turning movement volumes to reflect changes in roadway segment volumes forecasted by the ACTC Model.<sup>3</sup> In addition, this analysis assumes that pedestrian and bicycle volumes at the study intersections would increase proportional to the projected growth in land uses in the study area, while assuming no changes at the project site.

**Figure IV.D-11** presents the traffic volumes under 2020 No Project conditions at the study intersections.

**b. 2020 No Project Roadway Network.** As previously discussed in section 1.i, Planned Transportation Network Changes, there are no fully funded and approved improvements planned at the study intersections. Therefore, the 2020 No Project Conditions assumes the same intersection configuration as Existing Conditions at all study intersections.

This analysis assumes that signal timing parameters that do not require upgrades to the signal equipment, such as amount of green time assigned to each intersection approach, would be optimized at the signalized study intersections under 2020 No Project conditions. This assumption reflects current City of Oakland practice that incorporates basic signal timing changes into routine maintenance of the traffic signal system. It is expected that retiming of signals in areas with the greatest need (e.g., major streets, areas with rapidly shifting traffic patterns) would be prioritized as part of the regular ongoing maintenance of signal equipment.

**c. 2020 No Project Intersection Operations.** Intersection LOS calculations for 2020 No Project conditions were completed with the traffic volumes and roadway network described above. **Table IV.D-9** summarizes the results. Appendix C presents the detailed intersection LOS calculation worksheets for the 2020 No Project conditions.

In general, the study intersections operate with more delay under 2020 No Project conditions than under Existing conditions. Most study intersections continue to operate at acceptable LOS, except the following:

- The westbound stop-controlled approach at the Martin Luther King Jr. Way/54<sup>th</sup> Street intersection (#5) would operate at LOS E during the PM peak hour.
- The northbound stop-controlled approach at the SR 24 Ramps/52<sup>nd</sup> Street intersection (#13) would continue to operate at LOS F during the PM peak hour.

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<sup>3</sup> Outlined in NCHRP-255, the industry-standard Furness technique estimates projected (future) intersection turning movement volumes based on comparing existing traffic counts and the Model results. It uses mathematical formulae to balance roadway segment volumes approaching and departing from the intersection and thus balances turning volumes that make sense compared to the existing counts and Model results. This process improves the level of confidence in the forecasted future turning movement volumes.

**Table IV.D-9: Future 2020 and 2035 No Project Intersection LOS Summary**

|     | Intersection  | Traffic Control <sup>a</sup> | Peak Hour | Existing Conditions             |              | 2020 No Project                 |              | 2035 No Project                 |              |
|-----|---|------------------------------|-----------|---------------------------------|--------------|---------------------------------|--------------|---------------------------------|--------------|
|     |   |                              |           | Delay <sup>b</sup><br>(seconds) | LOS          | Delay <sup>b</sup><br>(seconds) | LOS          | Delay <sup>b</sup><br>(seconds) | LOS          |
| 1   | Martin Luther King Jr. Way/55 <sup>th</sup> Street        | Signal                       | AM        | 18.9                            | B            | 22.3                            | C            | 30.1                            | C            |
|     |   |                              | PM        | 22.3                            | C            | 25.9                            | C            | 34.9                            | C            |
| 2   | Dover Street/55 <sup>th</sup> Street                      | SSSC                         | AM        | 1.8 (13.3)                      | A (B)        | 2.5 (15.0)                      | A (B)        | 2.4 (17.5)                      | A (C)        |
|     |   |                              | PM        | 2.1 (13.8)                      | A (B)        | 3.4 (17.9)                      | A (C)        | 3.6 (23.3)                      | A (C)        |
| 3   | Shattuck Avenue/55 <sup>th</sup> Street                   | Signal                       | AM        | 17.0                            | B            | 19.5                            | B            | 28.4                            | C            |
|     |   |                              | PM        | 18.6                            | B            | 22.4                            | C            | 36.2                            | D            |
| 4   | Telegraph Avenue/55 <sup>th</sup> Street                  | Signal                       | AM        | 9.4                             | A            | 10.7                            | B            | 15.3                            | B            |
|     |   |                              | PM        | 15.3                            | B            | 17.9                            | B            | 24.8                            | C            |
| 5   | Martin Luther King Jr. Way/54 <sup>th</sup> Street        | SSSC                         | AM        | 0.5 (21.8)                      | A (C)        | 1.0 (34.2)                      | A (D)        | <b>1.1 (39.2)</b>               | <b>A (E)</b> |
|     |   |                              | PM        | 0.6 (23.1)                      | A (C)        | <b>1.3 (40.4)</b>               | <b>A (E)</b> | <b>1.4 (43.4)</b>               | <b>A (E)</b> |
| 6   | Dover Street/54 <sup>th</sup> Street                      | SSSC                         | AM        | 3.6 (9.2)                       | A (A)        | 4.3 (9.6)                       | A (A)        | 4.3 (9.7)                       | A (A)        |
|     |   |                              | PM        | 4.4 (9.5)                       | A (A)        | 4.9 (9.9)                       | A (A)        | 4.7 (10.0)                      | A (A)        |
| 7   | Shattuck Avenue/54 <sup>th</sup> Street                   | SSSC                         | AM        | 0.3 (12.7)                      | A (B)        | 0.7 (18.1)                      | A (C)        | 0.8 (22.0)                      | A (C)        |
|     |   |                              | PM        | 0.4 (14.4)                      | A (B)        | 0.7 (18.1)                      | A (C)        | 0.7 (19.5)                      | A (C)        |
| 8   | Martin Luther King Jr. Way/53 <sup>rd</sup> Street        | Signal                       | AM        | 3.7                             | A            | 4.7                             | A            | 4.9                             | A            |
|     |   |                              | PM        | 3.7                             | A            | 4.4                             | A            | 4.7                             | A            |
| 9   | Dover Street/53 <sup>rd</sup> Street                      | SSSC                         | AM        | 3.8 (9.3)                       | A (A)        | 5.1 (10.1)                      | A (B)        | 5.1 (10.2)                      | A (B)        |
|     |   |                              | PM        | 4.1 (9.2)                       | A (A)        | 5.2 (9.8)                       | A (A)        | 5.0 (9.9)                       | A (A)        |
| 10  | Martin Luther King Jr. Way/52 <sup>nd</sup> Street        | Signal                       | AM        | 18.0                            | B            | 21.2                            | C            | 25.8                            | C            |
|     |   |                              | PM        | 22.1                            | C            | 23.9                            | C            | 26.0                            | C            |
| 11  | CHRCO Garage Driveways/52 <sup>nd</sup> Street            | Signal                       | AM        | 12.3                            | B            | 12.7                            | B            | 13.4                            | B            |
|     |   |                              | PM        | 14.1                            | B            | 14.1                            | B            | 14.2                            | B            |
| 12  | Dover Street-Hospital Driveway/52 <sup>nd</sup> Street    | SSSC                         | AM        | 1.8 (13.1)                      | A (B)        | 2.1 (14.4)                      | A (B)        | 2.0 (15.7)                      | A (C)        |
|     |   |                              | PM        | 1.5 (14.7)                      | A (B)        | 2.0 (16.1)                      | A (C)        | 2.0 (16.8)                      | A (C)        |
| 13  | SR 24 Ramps/52 <sup>nd</sup> Street                       | SSSC                         | AM        | 4.8 (13.6)                      | A (B)        | 5.4 (15.7)                      | A (C)        | 6.8 (19.9)                      | A (C)        |
|     |   |                              | PM        | <b>** (**)</b>                  | <b>F (F)</b> | <b>** (**)</b>                  | <b>F (F)</b> | <b>** (**)</b>                  | <b>F (F)</b> |
| 14  | Shattuck Avenue/52 <sup>nd</sup> Street                   | Signal                       | AM        | 29.2                            | C            | 36.0                            | D            | <b>63.4</b>                     | <b>E</b>     |
|     |   |                              | PM        | 36.0                            | D            | 39.8                            | D            | <b>60.9</b>                     | <b>E</b>     |
| 15* | Telegraph Avenue-Claremont Avenue/52 <sup>nd</sup> Street | Signal                       | AM        | 14.3                            | B            | 17.8                            | B            | 21.0                            | C            |
|     |   |                              | PM        | 17.2                            | B            | 21.3                            | C            | 39.5                            | D            |
| 16* | Telegraph Avenue/51 <sup>st</sup> Street                  | Signal                       | AM        | 30.6                            | C            | 33.9                            | C            | 39.9                            | D            |
|     |   |                              | PM        | 45.2                            | D            | 49.8                            | D            | 70.8                            | E            |
| 17  | SR 24 Ramps/Martin Luther King Jr. Way                    | Signal                       | AM        | 9.4                             | A            | 11.3                            | B            | 15.4                            | B            |
|     |   |                              | PM        | 19.8                            | B            | 35.0                            | C            | 46.2                            | D            |
| 18  | West Street/52 <sup>nd</sup> Street                       | AWSC                         | AM        | 8.1                             | A            | 8.6                             | A            | 9.1                             | A            |
|     |   |                              | PM        | 8.4                             | A            | 8.8                             | A            | 9.4                             | A            |
| 19  | Genoa Street/52 <sup>nd</sup> Street                      | AWSC                         | AM        | 7.7                             | A            | 8.0                             | A            | 8.4                             | A            |
|     |   |                              | PM        | 7.6                             | A            | 8.0                             | A            | 8.2                             | A            |
| 20  | Genoa Street/55 <sup>th</sup> Street                      | SSSC                         | AM        | 1.8 (16.7)                      | A (C)        | 2.8 (21.3)                      | A (C)        | 2.9 (25.6)                      | A (D)        |
|     |   |                              | PM        | 2.1 (17.8)                      | A (C)        | 3.2 (22.5)                      | A (C)        | 3.3 (25.9)                      | A (D)        |

<sup>a</sup> Signal = intersection is controlled by a traffic signal; AWSC = intersection is controlled by stop-signs on all approaches; SSSC = Intersection is controlled by a stop-sign on the side-street approach;

<sup>b</sup> For signalized intersections, average intersection delay and LOS based on the 2000 HCM method is shown. For side-street stop-controlled intersections, delays for worst movement and average intersection delay are shown: intersection average (worst movement)

\* Denotes an intersection located in Downtown or on an arterial providing access to Downtown where LOS E is the LOS standard. For all other intersections, not located in Downtown or on an arterial providing access to Downtown, LOS D is the LOS standard.

\*\* Delay cannot be estimated accurately because the Synchro software does not correctly account for the queues on eastbound 52<sup>nd</sup> Street at Shattuck Avenue blocking the off-ramp. Reported LOS is based on field observations.

Source: Fehr & Peers, 2014.

### 3. 2035 No Project Conditions

This section evaluates traffic operations at the study intersections under 2035 No Project Conditions without the proposed project. This section describes the development of traffic volume forecasts, the street network, and the intersection operations under 2035 No Project Conditions.

**a. 2035 No Project Traffic Forecasts.** The 2035 No Project traffic volume forecasts were developed using the ACTC Model and existing traffic volumes, using a similar process used to develop the 2020 No Project forecasts, except the year 2035 segment volumes forecasted by the ACTC Model, which reflect past, present, and future developments expected by year 2035, were used as input.

**Figure IV.D-12** presents the traffic volumes under 2035 No Project conditions at the study intersections.

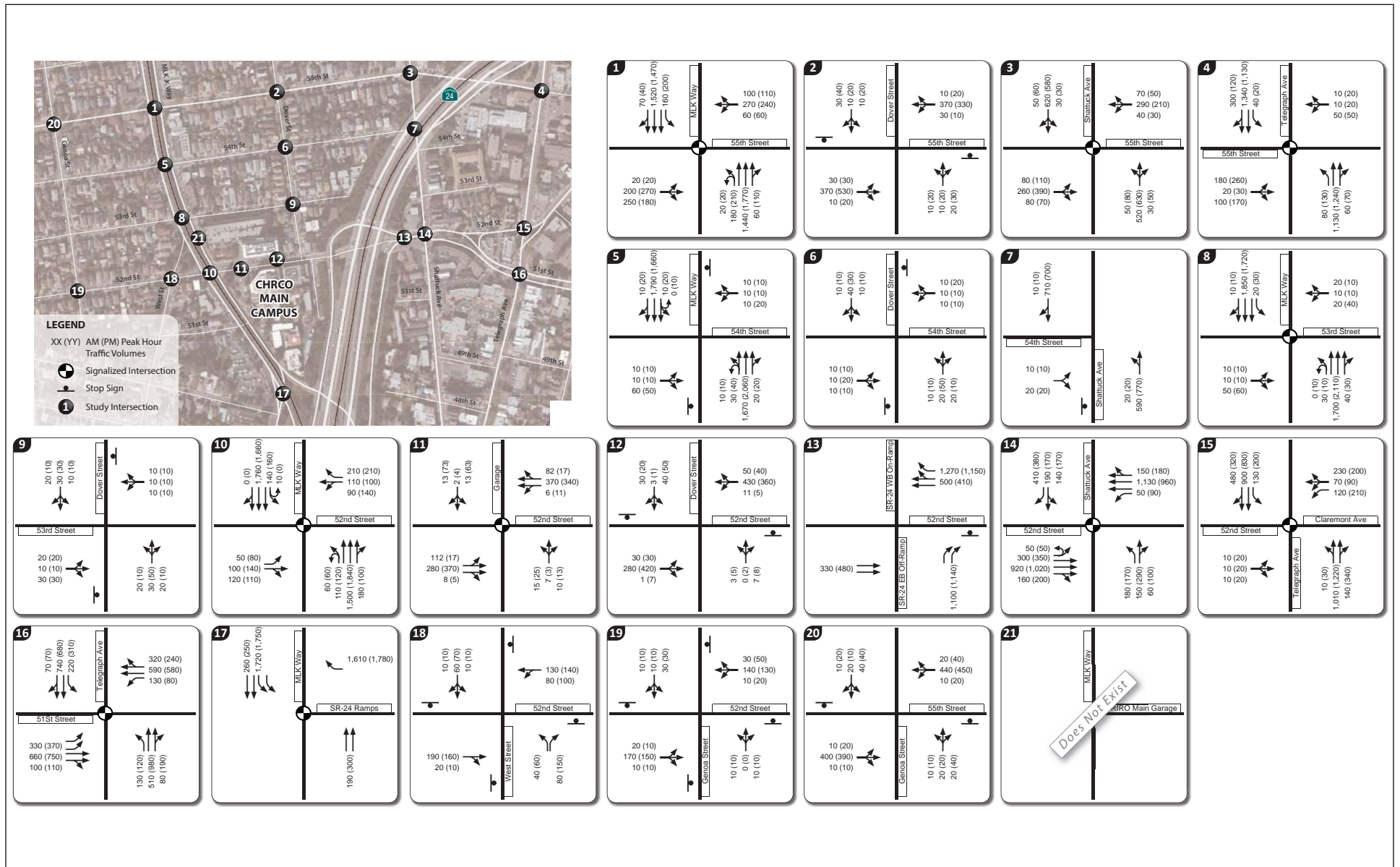
**b. 2035 No Project Roadway Network.** As previously discussed in section 1.i, Planned Transportation Network Changes, there are no fully funded and approved improvements planned at the study intersections. Therefore, the 2035 No Project Conditions assumes the same intersection configuration as Existing and 2020 No Project Conditions at all study intersections. The 2035 No Project analysis also assumes that signal timing parameters that do not require upgrades to the signal equipment, such as amount of green time assigned to each intersection approach, would be optimized at the signalized study intersections.

**c. 2035 No Project Intersection Operations.** Intersection LOS calculations for 2035 No Project conditions were completed with the traffic volumes and roadway network described above. **Table IV.D-9** summarizes the results. Appendix C presents the detailed intersection LOS calculation worksheets for the 2035 No Project conditions.

In general, the study intersections operate with more delay under 2035 No Project conditions than under Existing or 2020 No Project conditions. Most study intersections continue to operate at acceptable LOS, except the following:

- The westbound stop-controlled approach at the Martin Luther King Jr. Way/54<sup>th</sup> Street intersection (#5) would operate at LOS E during both AM and PM peak hours.
- The northbound stop-controlled approach at the SR 24 Ramps/52<sup>nd</sup> Street intersection (#13) would continue to operate at LOS F during the PM peak hour.
- The signalized Shattuck Avenue/52<sup>nd</sup> Street intersection (#14) would operate at LOS E during both AM and PM peak hours

The signalized Telegraph Avenue/51<sup>st</sup> Street intersection (#16) would operate at LOS E during the PM peak hour. However, the intersection is on an arterial providing access to Downtown; therefore, it is considered to operate at an acceptable level.



LSA

FIGURE IV.D-12



SOURCE: FEHR & PEERS, 2014.

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CHRCO Campus Master Plan Project EIR  
2035 No Project - Peak Hour Traffic Volumes,  
Lane Configurations, and Intersection Controls



#### 4. Regulatory Framework

The Oakland General Plan is comprised of numerous elements, and those containing policies relevant to transportation resources primarily are contained in the Land Use and Transportation Element (LUTE). The goals and policies contained in the various General Plan Elements are often competing. In reviewing a project for conformity with the General Plan, the City is required to ‘balance’ the competing goals and policies. This Project is reviewed for compliance with the following local plans and policies:

- General Plan LUTE
- City of Oakland Pedestrian Master Plan (incorporated into the City’s General Plan)
- City of Oakland Bicycle Master Plan (incorporated into the City’s General Plan)
- City of Oakland Public Transit and Alternative Modes Policy
- City of Oakland Complete Streets Policy
- City of Oakland Standard Conditions of Approval and Uniformly Applied Development Standards

**a. City of Oakland General Plan.** The City of Oakland General Plan (General Plan) is a comprehensive plan for the growth and development of the City. The General Plan includes policies related to: land use and circulation; housing; recreation; conservation and open space; noise; environmental hazards; and historic resources. These topics are addressed within individual elements of the General Plan: Land Use and Transportation; Pedestrian Master Plan; Bicycle Master Plan; Housing; Historic Preservation; Open Space; Conservation; Recreation; Noise; and Safety. Each is addressed separately below.

Regarding a project’s consistency with the General Plan in the context of CEQA, the Oakland General Plan states the following:

The General Plan contains many policies which may in some cases address different goals, policies and objectives and thus some policies may compete with each other. The Planning Commission and City Council, in deciding whether to approve a proposed project, must decide whether, on balance, the project is consistent (i.e., in general harmony) with the General Plan. The fact that a specific project does not meet all General Plan goals, policies and objectives does not inherently result in a significant effect on the environment within the context of the California Environmental Quality Act (CEQA). (City Council Resolution No. 79312 C.M.S.; adopted June 2005)

**(1) Land Use and Transportation Element.** The City of Oakland, through various policy documents, states a strong preference for encouraging use of pedestrian, bicycle, and transit travel modes. The following policies are included in the LUTE:

*LUTE Policy Framework, Encouraging Alternative Means of Transportation:* “A key challenge for Oakland is to encourage commuters to carpool or use alternative modes of transportation, including bicycling or walking. The Policy Framework proposes that congestion be lessened by promoting alternative means of transportation, such as transit, biking, and walking, providing facilities that support alternative modes, and implementing street improvements. The City will continue to work closely with local and regional transit providers to increase accessibility to transit and improve intermodal transportation connections and facilities. Additionally, policies support the introduction of light rail and

trolley buses along appropriate arterials in heavily traveled corridors, and expanded use of ferries in the bay and estuary.”

- Policy T3.5, Including Bikeways and Pedestrian Walks: The City should include bikeways and pedestrian walks in the planning of new, reconstructed, or realized streets, wherever possible.
- Policy T3.6, Encouraging Transit: The City should encourage and promote use of public transit in Oakland by expediting the movement of and access to transit vehicles on designated “transit streets” as shown on the Transportation Plan. (Policies T3.6 and T3.7 are based on the City Council’s passage of “Transit First” policy in October 1996.)
- Policy T3.7, Resolving Transportation Conflicts: The City, in constructing and maintaining its transportation infrastructure, should resolve any conflicts between public transit and single occupant vehicles in favor of the transportation mode that has the potential to provide the greatest mobility and access for people, rather than vehicles, giving due consideration to the environmental, public safety, economic development, health and social equity impacts.
- Policy T4.1, Incorporating Design Features for Alternative Travel: The City will require new development, rebuilding, or retrofit to incorporate design features in their projects that encourage use of alternative modes of transportation such as transit, bicycling, and walking.

(2) **Pedestrian Master Plan.** In November 2002, the Pedestrian Master Plan (PMP) was adopted by the City Council and incorporated into the adopted General Plan. The PMP identifies policies and implementation measures that promote a walkable City. In the study area, the PMP designates a Pedestrian Route Network throughout Oakland and identifies a “City Route” on Martin Luther King Jr. Way, and a “Neighborhood Route” on Dover Street, and 52<sup>nd</sup> and 53<sup>rd</sup> Streets.

The PMP includes the following relevant policies and actions:

- Policy 1.1, Crossing Safety: Improve pedestrian crossings in areas of high pedestrian activity where safety is an issue.
  - Action 1.1.1: Consider the full range of design elements – including bulbouts and refuge islands – to improve pedestrian safety.
- Policy 1.2, Traffic Signals: Use traffic signals and their associated features to improve pedestrian safety at dangerous intersections.
  - Action 1.2.7: Consider using crossing enhancement technologies like countdown pedestrian signals at the highest pedestrian volume locations.
- Policy 1.3, Sidewalk Safety: Strive to maintain a complete sidewalk network free of broken or missing sidewalks or curb ramps.
  - Action 1.3.7: Conduct a survey of all street intersections to identify corners with missing, damaged, or non-compliant curb ramps and create a plan for completing their installation.
- Policy 2.1, Route Network: Create and maintain a pedestrian route network that provides direct connections between activity centers.
  - Action 2.1.8: To the maximum extent possible, make walkway accessible to people with physical disabilities.
- Policy 2.3, Safe Routes to Transit: Implement pedestrian improvements along major AC Transit lines and at BART stations to strengthen connections to transit.
  - Action 2.3.1: Develop and implement street designs (like bus bulbouts) that improve pedestrian/bus connections.

- Action 2.3.3: Prioritize the implementation of street furniture (including bus shelters) at the most heavily used transit stops.
- Action 2.3.4: Improve pedestrian wayfinding by providing local area maps and directional signage at major AC Transit stops and BART stations.
- Policy 3.2, Land Use: Promote land uses and site designs that make walking convenient and enjoyable.
  - Action 3.2.1: Use building and zoning codes to encourage a mix of uses, connect entrances and exits to sidewalks, and eliminate “blank walls” to promote street level activity.
  - Action 3.2.2: Promote parking and development policies that encourage multiple destinations within an area to be connected by pedestrian trips.
  - Action 3.2.4: Require contractors to provide safe, convenient, and accessible pedestrian rights-of-way along construction sites that require sidewalk closure.
  - Action 3.2.8: Discourage motor vehicle parking facilities that create blank walls, unscreened edges along sidewalks, and/or gaps between sidewalks and building entrances.

**(3) Bicycle Master Plan.** The Oakland City Council adopted the Oakland Bicycle Master Plan Update in December 2007 and incorporated into the adopted General Plan. The adopted plan includes the following policy-supporting actions that are applicable to the proposed project:

- Policy 1A, Bikeway Network: Develop and improve Oakland’s bikeway network.
  - Action 1A.1, Bicycle Lanes (Class 2): Install bicycle lanes where feasible as the preferred bikeway type for all streets on the proposed bikeway network (except for the bicycle boulevards proposed for local streets with low traffic volumes and speeds).
  - Action 1A.3, Bicycle Boulevards (Class 3B): Enhance bicycle routes on local streets by developing bicycle boulevards with signage, striping, and intersection modifications to prioritize bicycle travel.
  - Action 1A.6, Dedicated Right Turn Lanes and “Slip Turns”: Where feasible, avoid the use of dedicated right turn lanes on streets included in the bikeway network. Where infeasible, consider a bicycle through lane to the left of the turn lane or a combined bicycle lane/right turn lane.
- Policy 1B, Routine Accommodation: Address bicycle safety and access in the design and maintenance of all streets.
  - Action 1B.2, Traffic Signals: Include bicycle-sensitive detectors, bicycle detector pavement markings, and adequate yellow time for cyclists with all new traffic signals and in the modernization of all existing signals.
- Policy 1C, Safe Routes to Transit: Improve bicycle access to transit, bicycle parking at transit facilities, and bicycle access on transit vehicles.
  - Action 1C.1, Bikeways to Transit Stations: Prioritize bicycle access to major transit facilities from four directions, integrating bicycle access into the station design and connecting the station to the surrounding neighborhoods.
- Policy 1D, Parking and Support Facilities: Promote secure and conveniently located bicycle parking at destinations throughout Oakland.
  - Action 1D.6, Bicycle Parking Ordinance: Adopt an ordinance as part of the City’s Planning Code that would require new development to include short and long-term bicycle parking.

- Action 1D.7, Development Incentives: Consider reduced automobile parking requirements in exchange for bicycle facilities as part of transportation demand management strategies in new development.

**b. City of Oakland Public Transit and Alternative Modes Policy.** The City of Oakland adopted the Public Transit and Alternative Modes Policy, also known as the “Transit-First Policy,” in October 2006 (City Council Resolution 73036 C.M.S.). This resolution supports public transit and other alternatives to single occupant vehicles, and directs the LUTE to incorporate “various methods of expediting transit services on designated streets, and encouraging greater transit use.” The resolution also directs the City, in constructing and maintaining its transportation infrastructure, to resolve any conflicts between public transit and single occupant vehicles on City streets in favor of the transportation mode that provides the greatest mobility for people rather than vehicles giving due consideration to the environment, public safety, economic development, health, and social equity impacts.

**c. City of Oakland Complete Streets Policy.** The City of Oakland adopted the Complete Street Policy to Further Ensure that Oakland Streets Provide Safe and Convenient Travel Options for all Users in January 2013 (City Council Resolution 84204 C.M.S.). This resolution, consistent with the California Complete Streets Act of 2008, directs the City of Oakland to plan, design, construct, operate, and maintain the street network in the City to accommodate safe, convenient, comfortable travel for all modes, including pedestrians, bicyclists, transit users, motorists, trucks, and emergency vehicles.

**d. City of Oakland Conditions of Approval and Uniformly Applied Development Standards.** The City’s Standard Conditions of Approval (SCA) that directly pertain to transportation and circulation and that apply to the proposed project are listed below. If the proposed project is adopted by the City, all applicable SCAs will be adopted as conditions of approval and required, as applicable, of the proposed project to help ensure no significant impacts. Because the conditions of approval are incorporated as part of the proposed project, they are not listed as mitigation measures.

**SCA TRA-1: Parking and Transportation Demand Management.** *Prior to issuance of a final inspection of the building permit.*

The project applicant shall submit a Transportation and Parking Demand Management (TDM) plan for review and approval by the City. The intent of the TDM plan shall be to reduce vehicle traffic and parking demand generated by the project to the maximum extent practicable consistent with the potential traffic and parking impacts of the project.

The goal of the TDM shall be to achieve the following project vehicle trip reductions (VTR):

- Projects generating 50 to 99 net new AM or PM peak hour vehicle trips: 10 percent VTR
- Projects generating 100 or more net new AM or PM peak hour vehicle trips: 20 percent VTR

The TDM plan shall include strategies to increase pedestrian, bicycle, transit, and carpool use, and reduce parking demand. All four modes of travel shall be considered, as appropriate. VTR strategies to consider include, but are not limited to, the following:

- a) Inclusion of additional long term and short term bicycle parking that meets the design standards set forth in chapter five of the Bicycle Master Plan, and Bicycle Parking Ordinance (chapter 17.117 of the Oakland Planning Code), and shower and locker facilities in commercial developments that exceed the requirement.
- b) Construction of and/or access to bikeways per the Bicycle Master Plan; construction of priority Bikeway Projects, on-site signage and bike lane striping.
- c) Installation of safety elements per the Pedestrian Master Plan (such as cross walk striping, curb ramps, count-down signals, bulb outs, etc.) to encourage convenient and safe crossing at arterials, in addition to safety elements required to address safety impacts of the project.
- d) Installation of amenities such as lighting, street trees, trash receptacles per the Pedestrian Master Plan and any applicable streetscape plan.
- e) Construction and development of transit stops/shelters, pedestrian access, way finding signage, and lighting around transit stops per transit agency plans or negotiated improvements.
- f) Direct on-site sales of transit passes purchased and sold at a bulk group rate (through programs such as AC Transit Easy Pass or a similar program through another transit agency).
- g) Provision of a transit subsidy to employees or residents, determined by the project sponsor and subject to review by the City, if the employees or residents use transit or commute by other alternative modes.
- h) Provision of an ongoing contribution to AC Transit service to the area between the development and nearest mass transit station prioritized as follows: 1) Contribution to AC Transit bus service; 2) Contribution to an existing area shuttle or streetcar service; and 3) Establishment of new shuttle or streetcar service. The amount of contribution (for any of the above scenarios) would be based upon the cost of establishing new shuttle service (Scenario3).
- i) Guaranteed ride home program for employees, either through 511.org or through separate program.
- j) Pre-tax commuter benefits (commuter checks) for employees.
- k) Free designated parking spaces for on-site car-sharing program (such as City Car Share, Zip Car, etc.) and/or car-share membership for employees or tenants.
- l) Onsite carpooling and/or vanpooling program that includes preferential (discounted or free) parking for carpools and vanpools.
- m) Distribution of information concerning alternative transportation options.
- n) Parking spaces sold/leased separately for residential units. Charge employees for parking, or provide a cash incentive or transit pass alternative to a free parking space in commercial properties.
- o) Parking management strategies; including attendant/valet parking and shared parking spaces.
- p) Requiring tenants to provide opportunities and the ability to work off-site.
- q) Allow employees or residents to adjust their work schedule in order to complete the basic work requirement of five eight-hour workdays by adjusting their schedule to reduce vehicle trips to the worksite (e.g., working four, ten-hour days; allowing employees to work from home two days per week).
- r) Provide or require tenants to provide employees with staggered work hours involving a shift in the set work hours of all employees at the workplace or flexible work hours involving individually determined work hours.

The TDM Plan shall indicate the estimated VTR for each strategy proposed based on published research or guidelines. For TDM Plans containing ongoing operational VTR strategies, the Plan shall include an ongoing monitoring and enforcement program to ensure the Plan is implemented on an ongoing basis during project operation. If an annual compliance report is required, as explained below, the TDM Plan shall also specify the topics to be addressed in the annual report.

The project applicant shall implement the approved TDM Plan on an ongoing basis. For projects that generate 100 or more net new a.m. or p.m. peak hour vehicle trips and contain ongoing operational VTR strategies, the project applicant shall submit an annual compliance report for the first five years following completion of the project (or completion of each phase for phased projects) for review and approval by the City. The annual report shall document the status and effectiveness of the TDM program, including the actual VTR. If deemed necessary, the City may elect to have a peer review consultant, paid for by the project applicant, review the annual report. If timely reports are not submitted and/or the annual reports indicate that the project applicant has failed to implement the TDM Plan, the project will be considered in violation of the Conditions of Approval and the City may initiate enforcement action as provided for in these Conditions of Approval. The project shall not be considered in violation of this Condition if the TDM Plan is implemented but the VTR goal is not achieved.

**SCA TRA-2: Construction Traffic and Parking.** *Prior to issuance of a demolition, grading, or building permit.*

The project applicant and construction contractor shall meet with appropriate City of Oakland agencies to determine traffic management strategies to reduce, to the maximum extent feasible, traffic congestion and the effects of parking demand by construction workers during construction of this project and other nearby projects that could be simultaneously under construction. The project applicant shall develop a construction management plan for review and approval by the Planning and Zoning Division, the Building Services Division, and the Transportation Services Division. The plan shall include at least the following items and requirements:

- a) A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak traffic hours, detour signs if required, lane closure procedures, signs, cones for drivers, and designated construction access routes.
- b) Notification procedures for adjacent property owners and public safety personnel regarding when major deliveries, detours, and lane closures will occur.
- c) Location of construction staging areas for materials, equipment, and vehicles at an approved location.
- d) A process for responding to, and tracking, complaints pertaining to construction activity, including identification of an onsite complaint manager. The manager shall determine the cause of the complaints and shall take prompt action to correct the problem. Planning and Zoning shall be informed who the Manager is prior to the issuance of the first permit issued by Building Services.
- e) Provision for accommodation of pedestrian flow.
- f) Provision for parking management and spaces for all construction workers to ensure that construction workers do not park in on-street spaces.
- g) Any damage to the street caused by heavy equipment, or as a result of this construction, shall be repaired, at the project sponsor's expense, within one week of the occurrence of the damage (or excessive wear), unless further damage/excessive wear may continue; in such case, repair shall occur prior to issuance of a final inspection of the building permit. All damage that is a threat to public health or safety shall be repaired immediately. The street shall be restored to its condition prior to the new construction as established by the City Building Inspector and/or photo documentation, at the project sponsor's expense, before the issuance of a Certificate of Occupancy.
- h) Any heavy equipment brought to the construction site shall be transported by truck, where feasible.

- i) No materials or equipment shall be stored on the traveled roadway at any time.
- j) Prior to construction, a portable toilet facility and a debris box shall be installed on the site, and properly maintained through project completion.
- k) All equipment shall be equipped with mufflers.
- l) Prior to the end of each work day during construction, the contractor or contractors shall pick up and properly dispose of all litter resulting from or related to the project, whether located on the property, within the public rights-of-way, or properties of adjacent or nearby neighbors.

## 5. Project Transportation Characteristics

This section discusses various characteristics of the existing and proposed CHRCO project that affect transportation and circulation. Chapter III, Project Description, and Appendix C, Transportation Impact Analysis Assumptions, provide more detail.

a. **Existing Characteristics.** Various aspects of the existing CHRCO are described below:

(1) **Major Buildings.** The main CHRCO campus consists of the following major buildings:

- *Main Hospital* – located at 747 52<sup>nd</sup> Street, the main hospital is bound by Martin Luther King Jr. Way to the west, 52<sup>nd</sup> Street to the north, and SR 24 to the east and south. The hospital consists of several interconnected buildings that provide the main in-patient services at the hospital. The approximately 257,727 square feet of building space house the emergency department and cafeteria, as well as various patient care departments. The Main Hospital provides 170 beds. The pick-up/drop off area and the emergency department access occurs at the Main Plaza (i.e., hospital pick-up/drop off area), located at the northwest corner of the Main Hospital which can be accessed from both 52<sup>nd</sup> Street and Martin Luther King Jr. Way. In addition, the Bruce Lyon Memorial Research Center and several temporary trailers are also located adjacent to the Main Hospital.
- *Outpatient Center Building 1 (OPC-1)* – this approximately 115,559 square-foot building is located on the north side of 52<sup>nd</sup> street east of Martin Luther King Jr. Way and serves outpatients. Departments located in this building include Anesthesiology, Orthopedics, Neurology, Rheumatology, Sports Medicine, and other clinics.

In addition, CHRCO owns and operates several former residential buildings along 52<sup>nd</sup>, 53<sup>rd</sup>, and Dover Streets. Parking facilities at CHRCO were previously described starting in section 1.f, Parking Conditions.

(2) **Population Groups.** Population groups that use the hospital include the following:

- **Patients/Visitors** – About 1,480 patients and visitors visit the hospital on a typical weekday. About 610 patients are treated as outpatients, and 270 are either in inpatient beds or visit the Emergency Room. There are also about 600 visitors, which also includes vendors and contractors, at the hospital on a typical weekday.<sup>4</sup>

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<sup>4</sup> Based on data provided by CHRCO in October 2013.



- **Employees** – CHRCO has approximately 2,170 employees at the main campus, with about 160 employees at OPC-1, 1,760 employees at the main hospital, and 245 physicians. About 66 percent of the main hospital employees work during the day shift (between 7:00 a.m. and 3:00 p.m.), 24 percent work during the evening shift (between 3:00 p.m. and 11:00 p.m.), and 10 percent work during the night shift. OPC-1 staff primarily work during the day shift, about 2 percent work during the evening shift and none work during the night shift.<sup>5</sup>

**(3) Data Collection.** Following data were collected to quantify transportation conditions at CHRCO:

- **Driveway Counts** – Vehicles entering and exiting the following locations were counted for a 48-hour period in September, 2013:
  - Main and Physicians' Garages
  - Main Plaza (i.e., Main Hospital pick-up/drop off area)
  - West Lot
  - South Lot
- **Patient/Visitor in-person surveys**, consisting of a maximum of six questions, were conducted at the entrances to the Main Hospital and OPC-1 in November, 2007. Appendix C summarizes the results of the patient/visitor survey.<sup>6</sup>
- **Employee mail-back surveys**, consisting of 12 questions were distributed by the hospital administration in December 2007. Appendix C summarizes the results of the employee survey.

In addition, CHRCO staff also provided data on current parking occupancies at different parking facilities, as well as data on existing and expected number of employees and patients/visitors at CHRCO's main campus. Based on data provided by CHRCO, staffing levels and number of patient/visitors to the site fluctuates throughout the year. Typically, winter months (January, February) have the highest amount of activity, while summer months (June through August) have the lowest amount of activity. Data collected in September represents above average activity at the hospital. Thus, data used to evaluate traffic conditions in this EIR is conservative in estimating typical conditions at the hospital and no further adjustments to the collected September 2013 data are necessary.

**(4) Existing Transportation Demand Management Program.** Currently, CHRCO has in place the following TDM strategies reducing the number of single-occupant vehicle trips and encouraging other modes such as transit and biking:

- **BART Shuttle** – CHRCO operates a free shuttle between the MacArthur BART Station and the main campus for its employees, patients, and visitors. Currently, the shuttles operate on

<sup>5</sup> Based on employee surveys conducted by Fehr & Peers in 2007 and data provided by CHRCO in September 2013.

<sup>6</sup> Both the patient/visitor and employee surveys were conducted in 2007. Appendix C.E estimates the automobile trip generation for the existing site using the survey results and provides a comparison to the observed automobile trip generation in September 2013. The difference between the estimated and observed trip generation is less than five percent, which is within the expected daily fluctuation indicating that the results of the surveys continue to remain valid.

weekdays from 6:00 a.m. to midnight with approximately 15 minute headways. CHRCO operate 24-passenger shuttles during the day and eight-passenger shuttles during the evening and night. The shuttles currently transport about 455 passengers each day.<sup>7</sup>

- *Commuter Tax Incentive* – Employees have the option to deduct a predetermined amount from their paychecks to be used for transit-related expenses.
- *Bicycle Parking* – Bicycle parking for approximately 40 bicycle parking spaces is provided on the ground level of the Main Garage.
- *TDM Management* – CHRCO has an on-site parking and shuttle manager. In addition, transportation information is provided to all new employees during orientation.

(5) **Mode Share.** Employees, patients, and visitors use a variety of modes to travel to and from CHRCO. Information obtained from the employees and patient/visitor surveys was used to estimate the percentage of these population groups that use each transportation mode. **Table IV.D-10** summarizes mode choice for both employees and patient/visitors.

**Table IV.D-10: Mode Choice Summary**

| Access Mode                          | Employees   | Patients/Visitors |
|--------------------------------------|-------------|-------------------|
| Drive Alone                          | 81%         | 21%               |
| Carpool <sup>a</sup>                 | 7%          | 58%               |
| Drop off/Pick-up                     | 1%          | 8%                |
| BART and Shuttle <sup>b</sup>        | 7%          | 4%                |
| AC Transit                           | <1%         | 5%                |
| Walk/Bike                            | 3%          | 3%                |
| Others (includes Taxis, Paratransit) | <1%         | 1%                |
| <b>Total</b>                         | <b>100%</b> | <b>100%</b>       |

<sup>a</sup> Average carpool occupancy is 2.4 passengers per vehicle for employees and 2.7 passengers per vehicle for patients and visitors.

<sup>b</sup> It is assumed that all employees and patients/visitors that use BART, also use the shuttle to travel between CHRCO and the BART Station.

Source: Data collected by Fehr & Peers in 2007.

The majority of trips by employees (81 percent) is by single-occupant vehicles. About 7 percent of employees carpool, 7 percent use BART and the shuttle, 3 percent walk or bike, 1 percent are picked-up and dropped off, and less than 1 percent use other modes such as bus, taxi, or other modes.

Since most patients at CHRCO cannot drive (i.e., they are underage), the majority of trips by patients/visitors (58 percent) is by carpool. About 21 percent of patients/visitors travel by single-occupant vehicles. These trips are mostly by visitors to the hospital. About 8 percent of patients/visitors are picked-up and dropped off, 5 percent use AC Transit, 4 percent use BART and the shuttle, 3 percent walk or bike, and about 1 percent use other modes such as taxis and paratransit.

<sup>7</sup> May 2013 ridership data provided by CHRCO.

**(6) Current Vehicle Trip Generation.** The amount of traffic currently generated by CHRCO is primarily estimated based on driveway counts collected in September 2013. Although traffic data was collected over a two-day period, the day with the highest amount of traffic was selected for analysis. Drop-off/pick-ups and on-street parking are accounted for by using data from the employee and patient/visitor surveys and observations at the site. **Figure IV.D-13** shows the inbound, outbound, and total vehicle trip generation profile by hour for a typical weekday. Total traffic generated by the site peaks between 7:30 a.m. and 8:30 a.m. and between 4:30 p.m. and 5:30 p.m. Most traffic enters the site during the morning peak, while most traffic exits the site during the peak afternoon period.

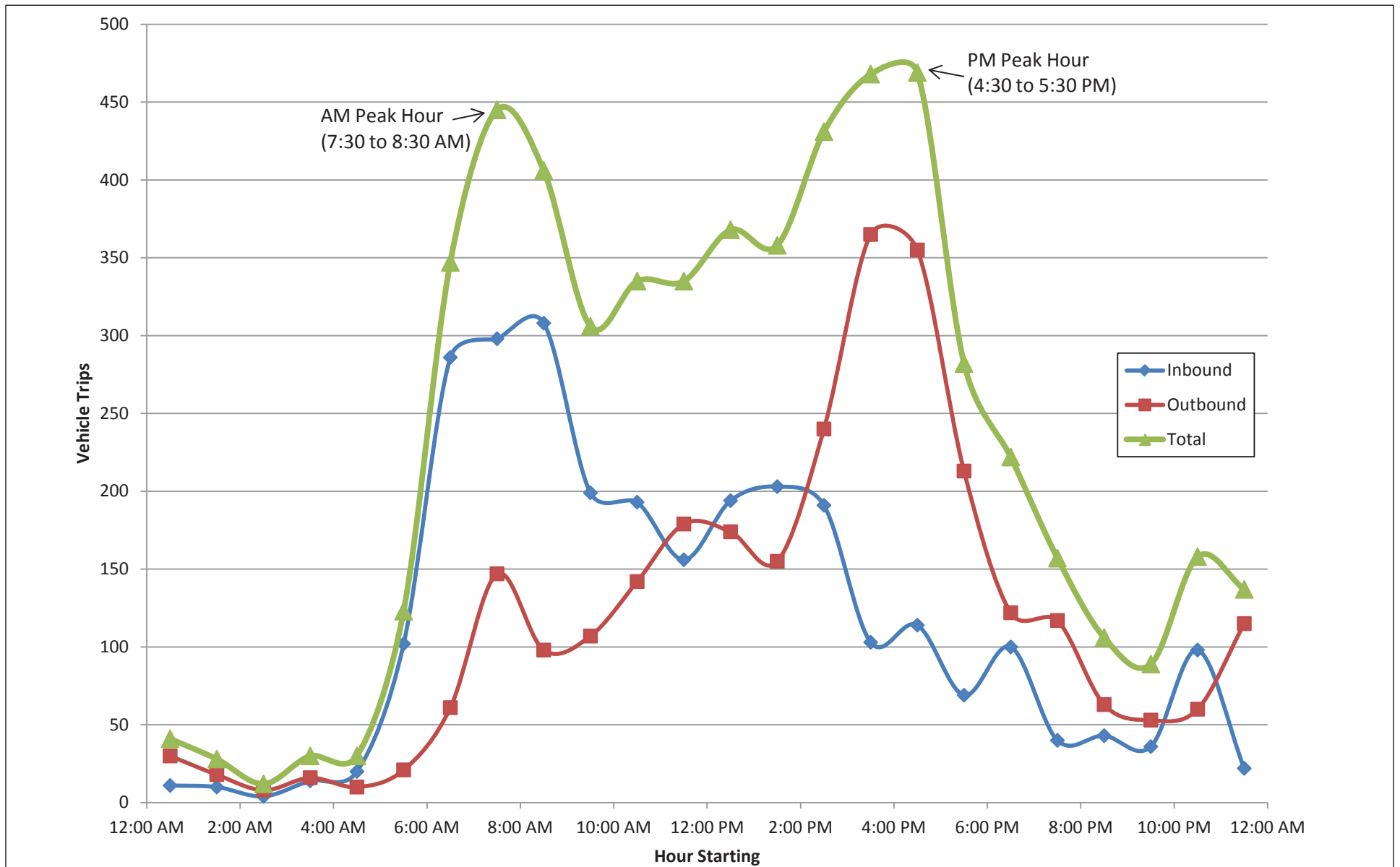
**Table IV.D-11** summarizes the daily and AM and PM peak hour vehicle trip generation by parking facility. Currently, CHRCO generates about 5,690 vehicle trips (both in and out) on a typical weekday. The site generates about 450 trips during the AM peak hour (7:30 a.m. to 8:30 a.m.) and about 470 trips during the PM peak hour (4:30 p.m. to 5:30 p.m.). As shown in **Table IV.D-11**, slightly less than half of all trips are to and from the Main Garage, while about 15 percent use on-street parking. Based on the driveway counts, results of the patient/visitor and employee surveys, and parking data provided by CHRCO, it is estimated that about 70 percent of all trips are generated by site employees.

**Table IV.D-11: Current Trip Generation Summary**

| Facility   | Daily Total  | AM Peak Hour<br>(7:30 a.m. – 8:30 a.m.) |            |            | PM Peak Hour<br>(4:30 p.m. – 5:30 p.m.) |            |            |
|--|--------------|---|------------|------------|---|------------|------------|
|  |              | In                                      | Out        | Total      | In                                      | Out        | Total      |
| Main Garage                                      | 2,730        | 146                                     | 71         | 217        | 51                                      | 177        | 228        |
| Physicians' Garage                               | 450          | 30                                      | 27         | 57         | 5                                       | 26         | 31         |
| West Lot   | 490          | 42                                      | 6          | 48         | 2                                       | 48         | 50         |
| South Lot  | 240          | 14                                      | 3          | 17         | 8                                       | 17         | 25         |
| Main Plaza (Main Hospital pick-up/drop off area) | 910          | 26                                      | 24         | 50         | 28                                      | 31         | 59         |
| Other/On-Street <sup>a</sup>                     | 870          | 40                                      | 16         | 56         | 20                                      | 56         | 76         |
| <b>Total</b>                                     | <b>5,690</b> | <b>298</b>                              | <b>147</b> | <b>445</b> | <b>114</b>                              | <b>355</b> | <b>469</b> |

<sup>a</sup> Other trips include trips by drop-off/pick-up of employees and patients/visitors, delivery trucks, etc. Trips by vehicles parking on-street estimated based on the results of the employee and patient/visitor surveys.

Source: Based on data collected by Fehr & Peers in September 2013.



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FIGURE IV.D-13

NOT TO SCALE

SOURCE: FEHR & PEERS, 2014.

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CHRCO Campus Master Plan Project EIR  
Weekday Vehicle Trip Generation Profile

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**b. Proposed Project.** Various aspects of the proposed project are described below:

**(1) Project Description.** The proposed project is expected to be completed in two phases. Major components of each phase are described below:

- Phase 1 would consist of the following:
  - Construction of Outpatient Center Building 2 (OPC-2) at the northeast corner of Martin Luther King Jr. Way/52<sup>nd</sup> Street intersection. The approximately 89,100 square-foot building would primarily house outpatient services that are currently provided in the Main Hospital. It would also provide 15 Emergency Department parking spaces at the ground level with vehicular access on 52<sup>nd</sup> Street at the existing signalized driveway east of Martin Luther King Jr. Way. Left-turns out of this driveway would be prohibited.
  - Interior renovation of the existing hospital resulting in temporary displacement of 30 hospital beds during construction of Phase 1.
  - Construction of additions to the Central Utility Plant in the main campus.
  - Modification of the existing Main Garage to provide a right-in/right-out only driveway on Martin Luther King Jr. Way, which will result in elimination of 17 parking spaces. The new driveway would provide the primary access to the Main Garage, while a driveway connecting to the new Emergency Department parking garage at the ground level of OPC-2 would provide outbound and emergency access to 52<sup>nd</sup> Street.
- Phase 2 would consist of the following:
  - Modification, removal, or relocation of certain existing residences along 52<sup>nd</sup> and 53<sup>rd</sup> Streets east of Dover Street and construction of Family Residence Building and Clinical Support Building.
  - Demolition of several buildings and removal of temporary trailers on the main campus and construction of Link Building and Patient Pavilion, which would add about 148,000 square feet of space and increase the bed count to 210.
  - Elimination of the existing 48-space South Lot and construction of a new 334-space parking garage at the south end of the main campus with access to and from 52<sup>nd</sup> Street, just east of Dover Street.
  - Acquisition of right-of-way adjacent to SR 24 freeway between the off-ramp on Martin Luther King Jr. Way and 53<sup>rd</sup> Street from Caltrans to accommodate the construction of the buildings and parking garage described above and to provide a pedestrian path between 52<sup>nd</sup> and 53<sup>rd</sup> Streets.

As required by SCA TRA-1, the proposed CHRCO project would also include implementation of additional Transportation Demand Management (TDM) strategies to supplement the hospital's current TDM efforts and to provide further incentives that encourage walking, biking and transit and reduce private automobile trips and parking demand. The trip generation and parking demand assumptions used in this analysis do not account for the effectiveness of the TDM program in order to present a more conservative analysis.

**Table IV.D-12** summarizes various aspects of the proposed project after completion of each phase of the project, including population forecasts provided by CHRCO. Based on communications with CHRCO in October and November 2013, these population forecasts are based on estimated demand for various services that reflect budgetary and operational constraints, such as potential competition with other medical centers and recent population trends at CHRCO. For example, total number of patient/visitors at CHRCO decreased by about 10 percent between 2007 and 2013. Thus, the forecasted increase in population is independent of and not proportional to the increase in the size of the Hospital.<sup>8</sup>

After completion of Phase 2 (i.e., buildout), CHRCO would have about 48 percent more building space than current conditions. The number of employees, patients, and visitors are expected to increase by about 9 percent, 13 percent, and 26 percent, respectively.

**(2) Trip Generation.** As shown in **Table IV.D-12**, the proposed project would increase the size of CHRCO by about 48 percent at buildout, while the number of employees and patient/visitors are expected to increase by 9 percent and 18 percent, respectively. As described above, population is not expected to increase at the same rate as the overall size because of budgetary and operational constraints on population forecasts. In addition, the proposed facilities would be designed to accommodate current design standards and patient-care technologies that require more building square footage per patient.

For example, the Pediatric and Neonatal Intensive Care Units (PICU and NICU) in the current hospital are ward-style with about 300 square feet per bed; in comparison, the PICU and NICU in the proposed hospital would be in single or double-occupancy rooms with about 500 to 590 square feet per bed.

Since building square footage per bed and per staff would increase regardless of an increase in staff and/or patients, building square footage is not the best indicator of the amount of traffic the future project would generate.

As such, the increased activity and associated traffic would be caused by the increase in the number of employees and patients/visitors, instead of an increase in the building square footage per bed or per staff. Therefore, projected increases in total population (employees and patient/visitors combined) are used to calculate trip generation for the project. This analysis assumes that staff and patient/visitors at the future hospital would continue to have similar trip making characteristics as the existing hospital because the future hospital would continue to have similar characteristics as the existing hospital, such as similar services, similar hours of operations, and continue to provide the BART shuttle service.<sup>9</sup>

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<sup>8</sup> See *SB1953 and the Challenge of Hospital Seismic Safety in California* (RAND Corporation, January 2007) which shows that recently completed hospitals in California provide between 20 and 150 percent more gross square footage than older hospital while accommodating the same level of activity (i.e., number of beds, number of facilities, etc.).

<sup>9</sup> Email communication with Doug Nelson at CHRCO, April 9, 2014.



**Table IV.D-12: CHRCO Project Characteristics**

| Metric                         | Existing<br>(2013) | Phase 1      | Phase 2      | Existing to Phase 1 |                   | Phase 1 to Phase 2 |            | Existing to Phase 2 |            |
|--------------------------------|--------------------|--------------|--------------|---------------------|-------------------|--------------------|------------|---------------------|------------|
|                                |                    |              |              | Absolute            | Percent           | Absolute           | Percent    | Absolute            | Percent    |
| Building Area (KSF)            | 692                | 781          | 1,025        | 89                  | 13%               | 244                | 31%        | 333                 | 48%        |
| Bed Counts                     | 170                | 140          | 210          | -30                 | -18%              | 70                 | 50%        | 40                  | 24%        |
| Outpatient Exam Rooms          | 81                 | 93           | 93           | 12                  | 15%               | 0                  | 0%         | 12                  | 15%        |
| Parking Spaces                 | 1,107              | 1,105        | 1,391        | -2                  | -0.2%             | 286                | 21%        | 284                 | 20%        |
| <b>Population<sup>a</sup></b>  |                    |              |              |                     |                   |                    |            |                     |            |
| Employees                      |                    |              |              |                     |                   |                    |            |                     |            |
| OPC-1 Employees                | 160                | 160          | 160          | 0                   | 0%                | 0                  | 0%         | 0                   | 0%         |
| OPC-2 Employees                | 0                  | 235          | 235          | 235                 | N/A               | 0                  | 0%         | 235                 | N/A        |
| Hospital Employees             | 1,761              | 1,551        | 1,710        | -210                | -12% <sup>b</sup> | 159                | 10%        | -51                 | -3%        |
| Physicians                     | 245                | 245          | 266          | 0                   | 0%                | 21                 | 9%         | 21                  | 9%         |
| Employee Subtotal              | 2,166              | 2,191        | 2,371        | 25                  | 1%                | 180                | 8%         | 205                 | 9%         |
| Patients and Visitors          |                    |              |              |                     |                   |                    |            |                     |            |
| In-patients                    | 270                | 270          | 340          | 0                   | 0%                | 70                 | 26%        | 70                  | 26%        |
| Outpatients                    | 605                | 648          | 648          | 43                  | 7%                | 0                  | 0%         | 43                  | 7%         |
| Visitors <sup>c</sup>          | 604                | 604          | 761          | 0                   | 0%                | 157                | 26%        | 157                 | 26%        |
| Patients and Visitors Subtotal | 1,479              | 1,522        | 1,749        | 43                  | 3%                | 227                | 15%        | 270                 | 18%        |
| <b>Total Population</b>        | <b>3,645</b>       | <b>3,713</b> | <b>4,120</b> | <b>68</b>           | <b>2%</b>         | <b>407</b>         | <b>11%</b> | <b>475</b>          | <b>13%</b> |

<sup>a</sup> Population forecasts are approximate.

<sup>b</sup> Hospital employees decrease after Phase 1 because most of them will move to OPC-2.

<sup>c</sup> Visitors include vendors and other non-patients.

Source: CHRCO, 2013.

Based on the current population of 3,645 (2,166 employees and 1,479 patients/visitors) and current trip generation counts, CHRCO has the following automobile trip generation rates per population:

- Daily = 1.56 trips per person
- AM Peak Hour = 0.12 trips per person (67% in, 33% out)
- PM Peak Hour = 0.13 trips per person (24% in, 76% out)

These trip generation rates are conservative because they do not account for the TDM program, as required by SCA TRA-1, that would be implemented by the proposed project to reduce the overall automobile demand at the site.

As shown in **Table IV.D-12**, CHRCO population is estimated to increase by about 13 percent at project buildout while the project size would increase by about 48 percent at project buildout. As previously described, the population forecasts in **Table IV.D-12** were estimated independent of the project size. They are generally based on current trends and other budgetary and operational constraints at CHRCO and present best estimates for activity levels at CHRCO at buildout.

Since automobile trip generation is correlated to population, this analysis modifies the population estimates provided by CHRCO to present a more conservative analysis of project traffic impacts based on a higher activity level than can be accommodated at the site. As previously discussed, the overall square footage of the proposed project would not be an accurate indicator of overall level of activity at CHRCO. Thus, this analysis uses other characteristics of the physical space, such as number of exam rooms and bed counts, to estimate an increase in total population proportional to the increase in space.

As shown in **Table IV.D-12**, the project would increase the number of exam rooms (indicator of outpatient activity) by about 15 percent and the number of beds (indicator of inpatient activity) by about 24 percent. Therefore, this analysis increases the project population related to outpatient services by 15 percent and inpatient services by 24 percent. Under these conservative assumptions, CHRCO total population would increase by about 4 percent after Phase 1 and 22 percent after Phase 2, which are higher than the forecasted increase of 2 percent at the end of Phase 1 and 13 percent at Phase 2 that was provided by CHRCO. The proposed estimates in population increase are more conservative than the population forecasts estimated by CHRCO and less likely to occur; however, they result in a more conservative traffic impact analysis for the EIR that reflects the increase in size of the proposed project but account for the decompression of current services in a larger hospital.

Based on the conservative trip generation rates described above, **Table IV.D-13** summarizes project trip generation at the end of Phases 1 and 2. At the end of Phase 1, the proposed project is estimated to generate about 240 additional daily trips and 18 additional AM peak hour and 19 additional PM peak hour trips. At buildout, the proposed project is estimated to generate about 1,230 additional daily, 96 additional AM peak hour, and 102 additional PM peak hour automobile trips.

**Table IV.D-13: CHRCO Automobile Trip Generation**

| Phase   | Total<br>Population <sup>a</sup> | Trip Generation |              |     |       |              |     |       |
|---|----------------------------------|-----------------|--------------|-----|-------|--------------|-----|-------|
|   |                                  | Daily           | AM Peak Hour |     |       | PM Peak Hour |     |       |
|   |                                  |                 | In           | Out | Total | In           | Out | Total |
| Totals for Existing and Each Phase <sup>b</sup> |                                  |                 |              |     |       |              |     |       |
| Existing  | 3,645                            | 5,690           | 298          | 147 | 445   | 114          | 355 | 469   |
| Phase 1   | 3,796                            | 5,930           | 310          | 153 | 463   | 119          | 369 | 488   |
| Phase 2   | 4,435                            | 6,920           | 362          | 179 | 541   | 139          | 432 | 571   |
| Net Changes                                     |                                  |                 |              |     |       |              |     |       |
| Existing to Phase 1                             | 151                              | 240             | 12           | 6   | 18    | 5            | 14  | 19    |
| Phase 1 to Phase 2                              | 638                              | 990             | 52           | 26  | 78    | 20           | 63  | 83    |
| Existing to Phase 2                             | 790                              | 1,230           | 64           | 32  | 96    | 25           | 77  | 102   |

<sup>a</sup> Total population includes employees and patient/visitors. As discussed above, the total population presented in this table and used to estimate automobile trip generation is higher than CHRCO estimates in **Table IV.D-12** to present a more conservative analysis.

<sup>b</sup> Trip generation based on following rates based on existing observations:

Daily = 1.56 trips per person

AM Peak Hour = 0.12 trips per person (67% in, 33% out)

PM Peak Hour = 0.13 trips per person (24% in, 76% out)

Source: Fehr & Peers, 2013.

**Table IV.D-14** summarizes the net new trips generated by various travel modes for Phases 1 and 2 of the project based on the existing CHRCO mode share characteristics presented in **Table IV.D-10**. It is estimated that the Phase 1 project would generate about two new peak hour BART trips, one new peak hour bus trip, and one new peak hour walk/bike trip. At the end of Phase 2 (i.e., buildout), the project would generate about eight new peak hour BART trips, four new peak hour bus trips, and five new peak hour walk/bike trips. The implementation of the proposed TDM program would increase the trip generation for the non-automobile modes.

**Table IV.D-14: Proposed Project Trip Generation by Mode**

| Travel Mode      | Phase 1 |              |              | Phase 2 |              |              |
|------------------|---------|--------------|--------------|---------|--------------|--------------|
|                  | Daily   | AM Peak Hour | PM Peak Hour | Daily   | AM Peak Hour | PM Peak Hour |
| Automobile       | 240     | 18           | 19           | 1,230   | 96           | 102          |
| BART and Shuttle | 17      | 2            | 2            | 96      | 9            | 9            |
| AC Transit       | 11      | 1            | 1            | 43      | 4            | 5            |
| Walk/Bike        | 10      | 1            | 1            | 50      | 4            | 5            |

Source: Fehr & Peers, 2014.

**(3) Trip Distribution.** Trip distribution is defined as the directions of approach and departure that vehicles would use to arrive at and depart from the site. CHRCO staff provided the residence ZIP code information of employees and patient/visitors. The ZIP code data was geocoded using ArcView, Geographical Information System (GIS) software, to determine the trip distribution by user group. **Figures IV.D-14 and IV.D-15** provide the residence distribution of current CHRCO employees and patients, respectively. About half of both employees and patients live within 10 miles of the project site. Based on the residence locations, most employees and patients use the freeways to arrive at and depart from the site. This analysis assumes that visitors would have the same trip making characteristics as the patients. The trip generation estimates contain trips for employees and patients/visitors.

As shown on **Figures IV.D-14 and IV.D-15**, both employees and patients use similar roadways at similar levels to access the site. Therefore, one pattern was developed for all trips generated by the proposed project. Overall, trips to and from the CHRCO campus have the following trip distribution:

- I 80 (West), 3 percent
- I 80 (East), 17 percent
- I 580 (East), 30 percent
- I 980, 22 percent
- SR 24 (East), 13 percent
- Local (Martin Luther King Jr. Way, Telegraph Avenue, etc.), 15 percent

All freeways, except SR 24 (East) can be accessed from the on-ramp and off-ramp on Martin Luther King Jr. Way, just south of the project site. The nearest access to and from SR 24 (East) is provided through ramps on Telegraph Avenue northeast of the project site.

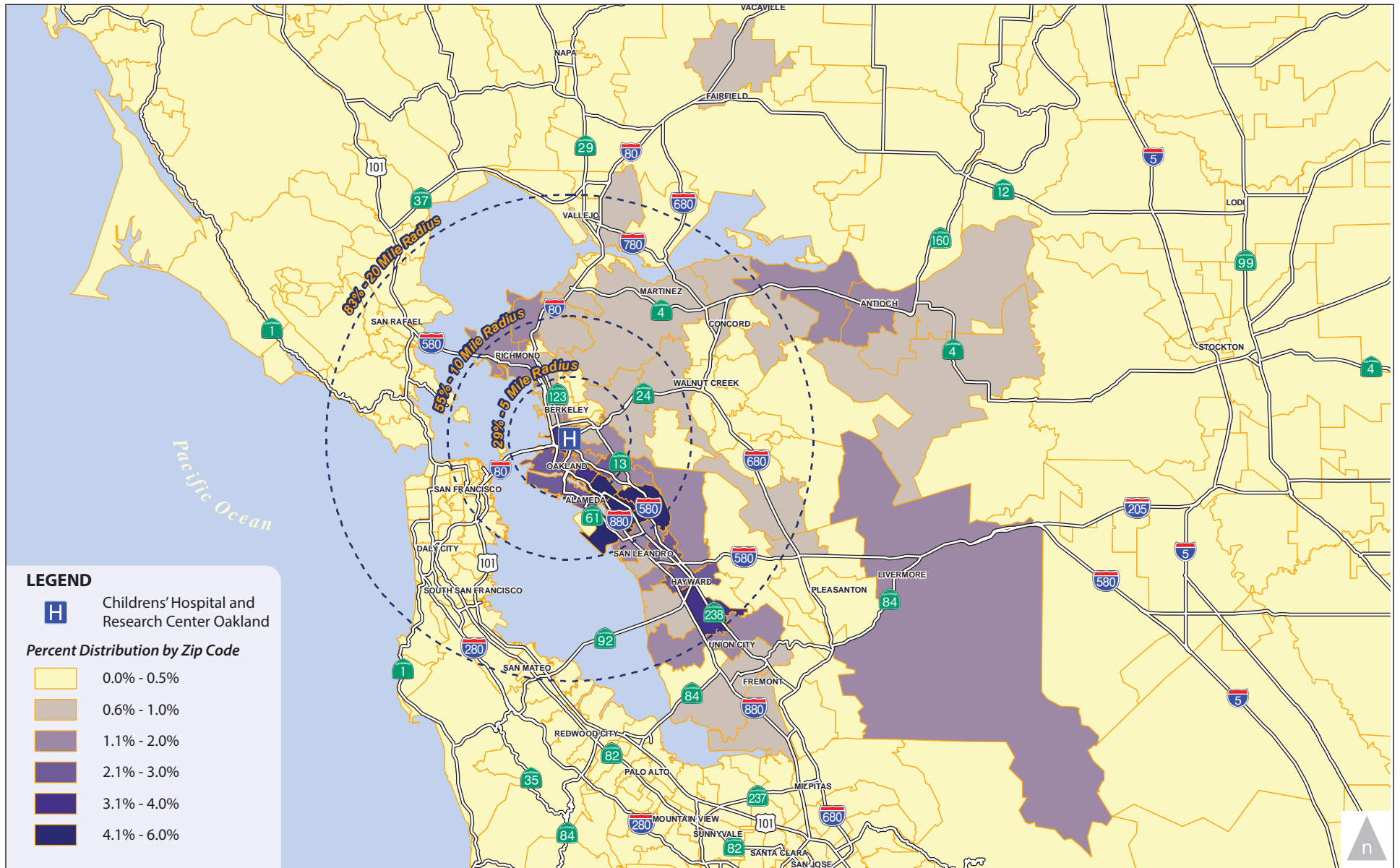
**(4) Trip Assignment.** The new trips generated by the proposed project, as shown in **Table IV.D-13**, were assigned to the roadway network according to the trip distribution described in the previous section. The trip assignment also accounts for changes to project access, such as replacing the full-access driveway for the Main Garage on 52<sup>nd</sup> Street with a right-in/right-out only driveway on Martin Luther King Jr. Way. **Figures IV.D-16a and IV.D-16b** show the resulting net peak hour trip assignment by roadway segment after Phase 1 and Phase 2 (i.e., buildout), respectively. Traffic volumes on some street segments, such as 52<sup>nd</sup> Street between Martin Luther King Jr. Way and Dover Street after Phase 1, would decrease due to relocating the Main Garage driveway. This analysis assumes that most vehicles would use the major streets, such as Martin Luther King Jr. Way, Telegraph Avenue, and 52<sup>nd</sup> Street, to travel to and from the site. However, some vehicles would use the residential streets because they would provide the shortest and/or more convenient paths of travel based on project driveway locations. Therefore, intersections along these residential streets that may be affected by the proposed project are also included in the list of study intersections.

These intersections were generally selected to identify likely locations where the proposed project may significantly alter travel patterns. In general, study intersections were selected if they provide immediate access to the project site, or where the proposed project would increase traffic volumes by 50 or more peak-hour vehicle at signalized intersections, or ten or more peak hour vehicles on the controlled approach of unsignalized intersections.

**Figures IV.D-17a and IV.D-17b** show the net peak hour trip assignment at the study intersections after Phase 1 and Phase 2 (i.e., buildout), respectively.

## 6. Impacts and Mitigation Measures

This section discusses potential impacts to transportation and circulation that could result from the implementation of the proposed project. The section begins with the significance thresholds, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate. With respect to transportation and circulation, the project would have a significant impact on the environment if it meets or exceeds the City of Oakland CEQA transportation thresholds of significance detailed below.



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FIGURE IV.D-14

NOT TO SCALE

SOURCE: FEHR & PEERS, 2014.

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CHRCO Campus Master Plan Project EIR  
Patient Residence Distribution by ZIP Code

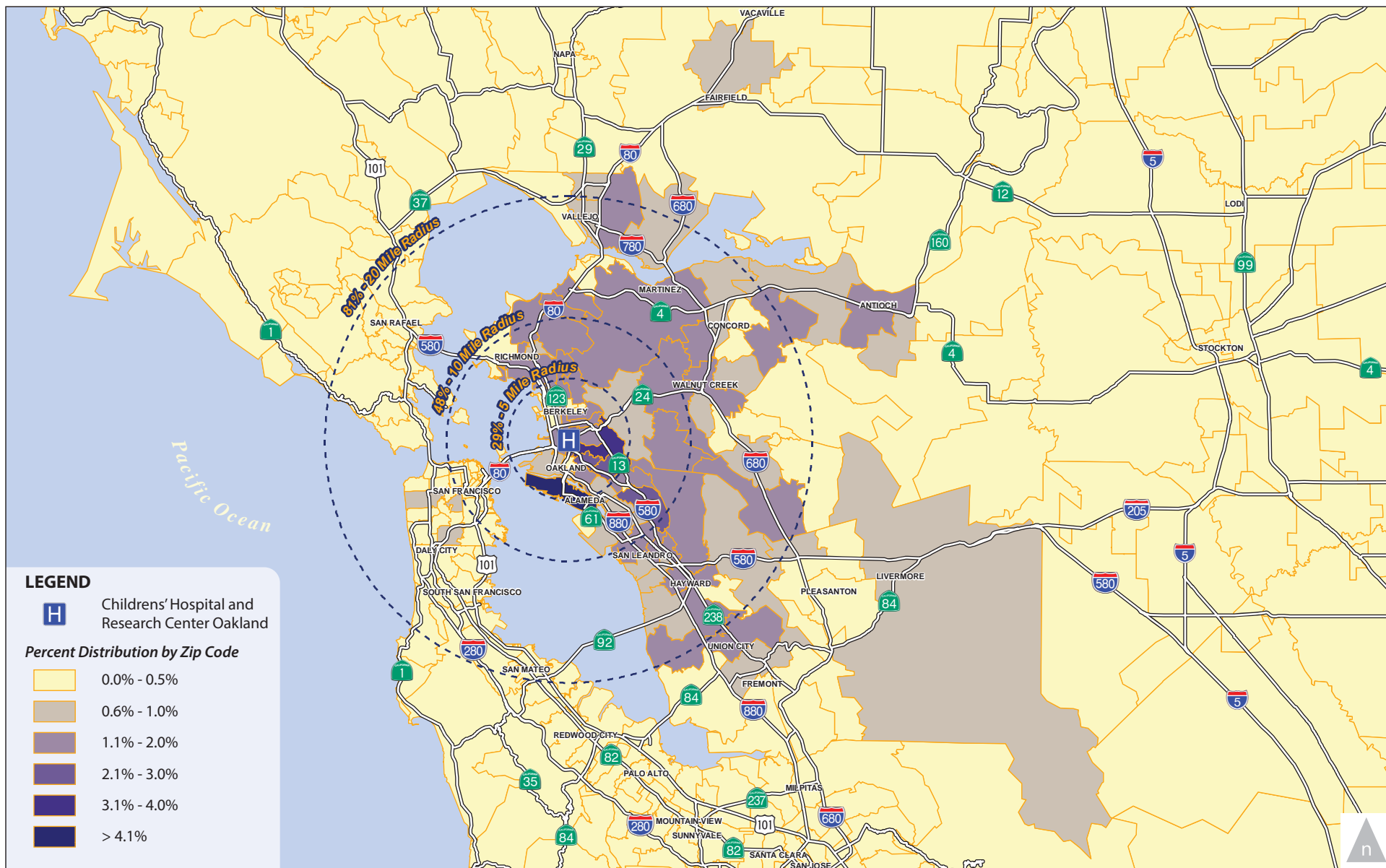


FIGURE IV.D-15

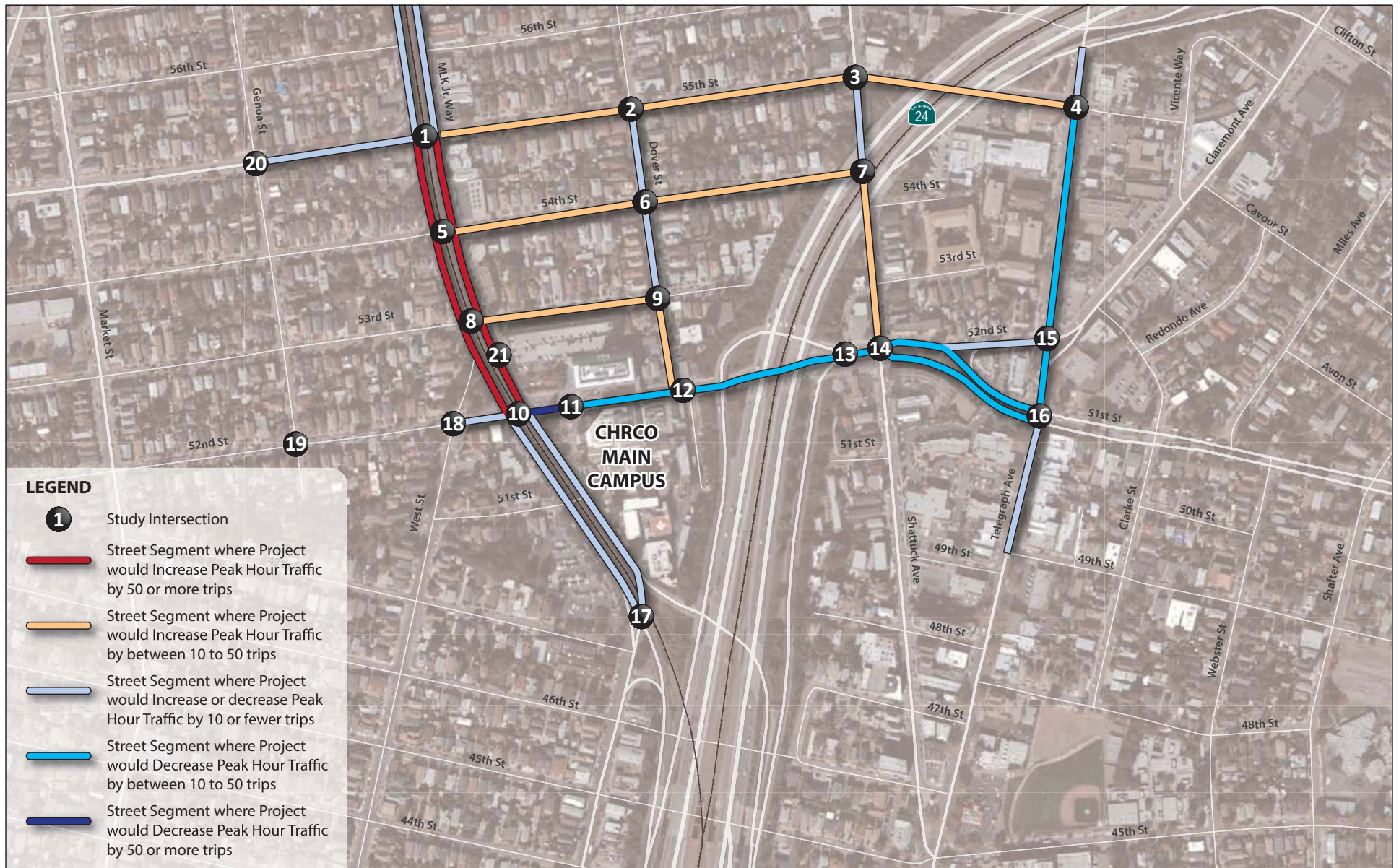
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SOURCE: FEHR & PEERS, 2014.

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CHRCO Campus Master Plan Project EIR  
Employee Residence Distribution by ZIP Code





LSA



FIGURE IV.D-16a

CHRCO Campus Master Plan Project EIR  
Phase 1

Peak Hour Traffic Assignment and Study Intersection Locations

SOURCE: FEHR & PEERS, 2014.

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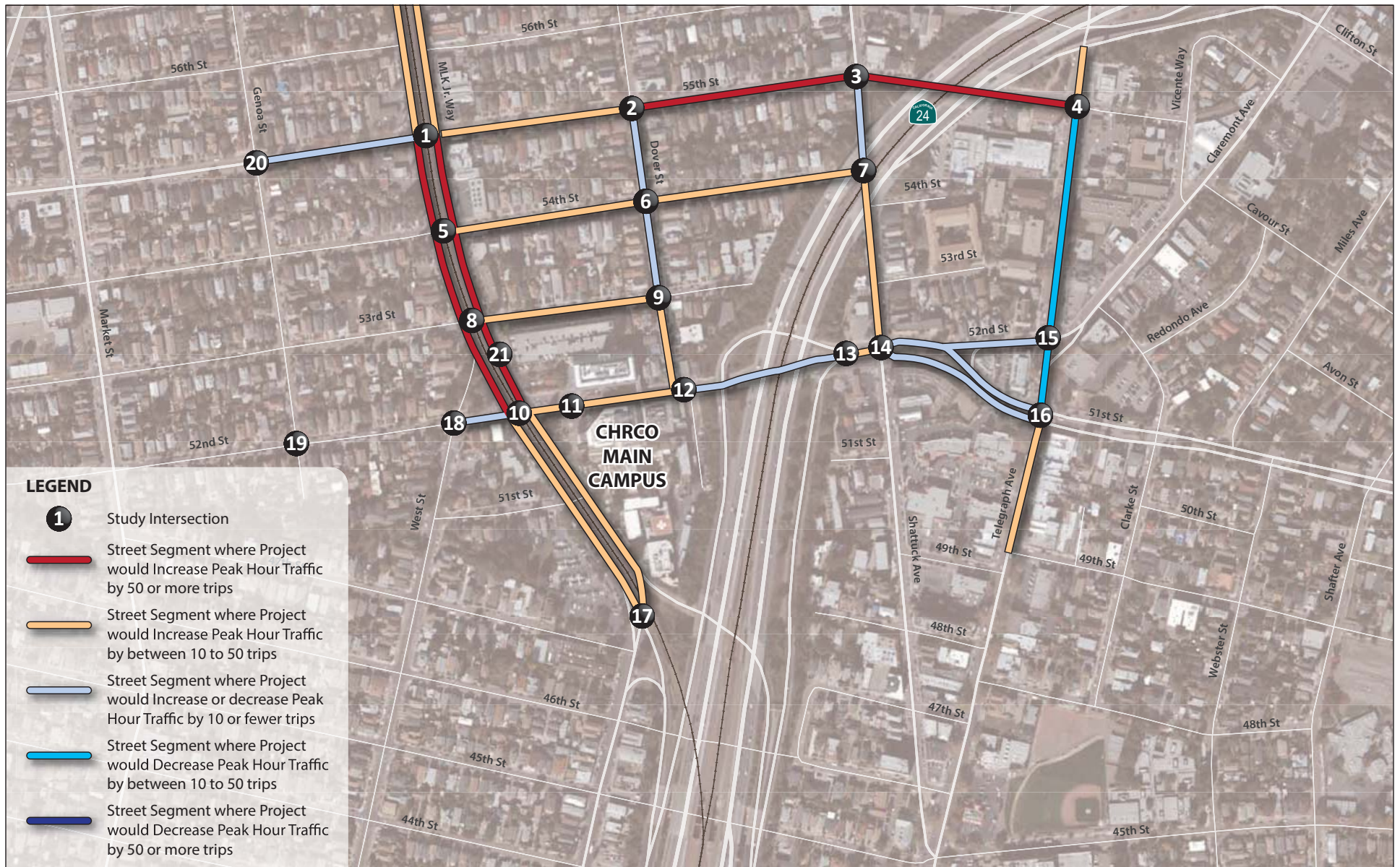


FIGURE IV.D-16b

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CHRCO Campus Master Plan Project EIR  
Phase 2

Peak Hour Traffic Assignment and Study Intersection Locations

SOURCE: FEHR & PEERS, 2014.

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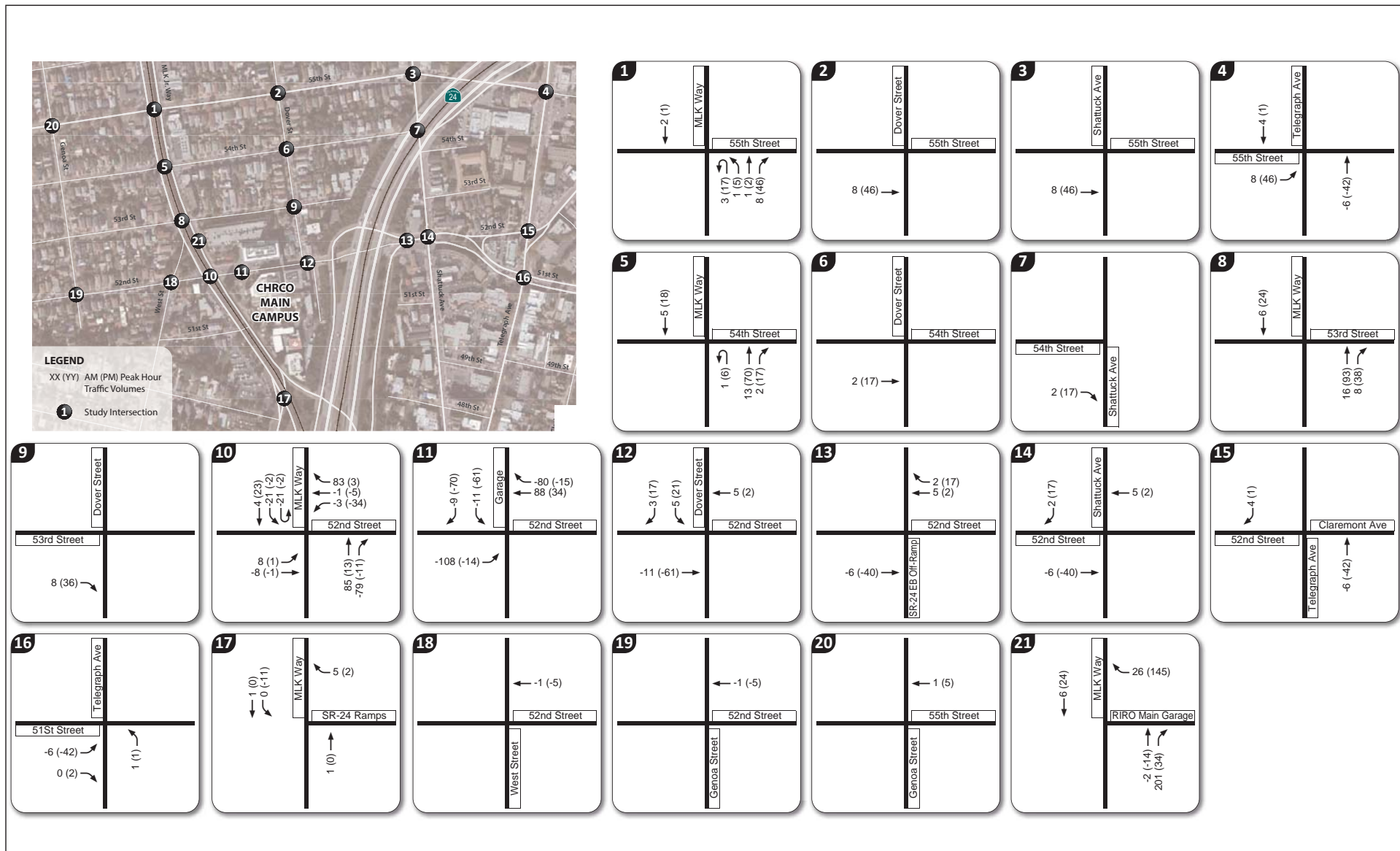


FIGURE IV.D-17a

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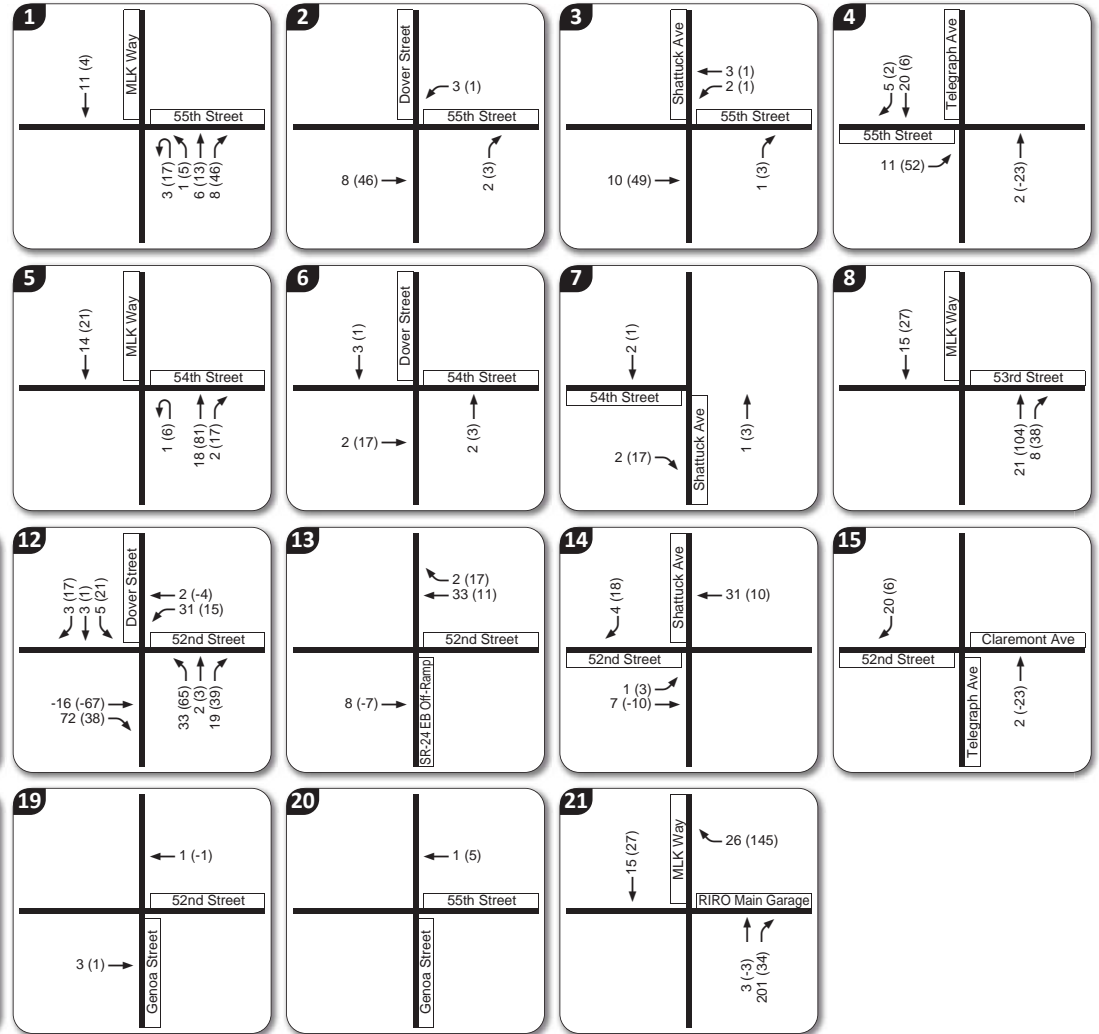


CHRCO Campus Master Plan Project EIR  
 Phase 1  
 Net Peak Hour Traffic Assignment

SOURCE: FEHR & PEERS, MAY 2014.

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LSA



FIGURE IV.D-17b

CHRCO Campus Master Plan Project EIR  
 Phase 2  
 Net Peak Hour Traffic Assignment

SOURCE: FEHR & PEERS, MAY 2014.

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**a. Thresholds of Significance.** The project would have a significant impact on the environment if it would conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit, specifically:

#### **Traffic Load and Capacity Thresholds**

- (1) At a study, signalized intersection which is located outside the Downtown<sup>10</sup> area and that does not provide direct access to Downtown, the project would cause the motor vehicle level of service (LOS) to degrade to worse than LOS D (i.e., LOS E or LOS F) and cause the total intersection average vehicle delay to increase by four (4) or more seconds;
- (2) At a study, signalized intersection which is located within the Downtown area or that provides direct access to Downtown, the project would cause the motor vehicle LOS to degrade to worse than LOS E (i.e., LOS F) and cause the total intersection average vehicle delay to increase by four (4) or more seconds;
- (3) At a study, signalized intersection outside the Downtown area and that does not provide direct access to Downtown where the motor vehicle level of service is LOS E, the project would cause the total intersection average vehicle delay to increase by four (4) or more seconds;
- (4) At a study, signalized intersection outside the Downtown area and that does not provide direct access to Downtown where the motor vehicle level of service is LOS E, the project would cause an increase in the average delay for any of the critical movements of six (6) seconds or more;
- (5) At a study, signalized intersection for all areas where the motor vehicle level of service is LOS F, the project would cause (a) the overall volume-to-capacity ("V/C") ratio to increase 0.03 or more or (b) the critical movement V/C ratio to increase 0.05 or more;
- (6) At a study, unsignalized intersection the project would add ten (10) or more vehicles to the critical movement and after project completion satisfy the California Manual on Uniform Traffic Control Devices (MUTCD) peak hour volume traffic signal warrant;
- (7) For a roadway segment of the Congestion Management Program (CMP) Network, the project would cause (a) the LOS to degrade from LOS E or better to LOS F or (b) the V/C ratio to increase 0.03 or more for a roadway segment that would operate at LOS F without the project;<sup>11</sup>

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<sup>10</sup> The Downtown area is defined in the Land Use and Transportation Element of the General Plan (page 67) as the area generally bounded by the West Grand Avenue to the north, Lake Merritt and Channel Park to the east, the Oakland Estuary to the south, and I 980/Brush Street to the west. Intersections that provide direct access to downtown are generally defined as principal arterials within two (2) miles of Downtown and minor arterials within one (1) mile of Downtown, provided that the street connects directly to Downtown.

<sup>11</sup> Refer to the ACTC *Congestion Management Program* for a description of the CMP Network. In Oakland, the CMP Network includes all state highways plus the following streets: portions of Martin Luther King Jr. Way, Webster/Posey Tubes, 23rd Avenue, 29th Avenue, and Hegenberger Road.

- (8) Cause congestion of regional significance on a roadway segment on the Metropolitan Transportation System (MTS) evaluated per the requirements of the Land Use Analysis Program of the CMP;<sup>12</sup>
- (9) Result in substantially increased travel times for AC Transit buses.

### **Traffic Safety Thresholds**

- (10) Directly or indirectly cause or expose roadway users (e.g., motorists, pedestrians, bus riders, bicyclists) to a permanent and substantial transportation hazard due to a new or existing physical design feature or incompatible uses;
- (11) Directly or indirectly result in a permanent substantial decrease in pedestrian safety;
- (12) Directly or indirectly result in a permanent substantial decrease in bicyclist safety;
- (13) Directly or indirectly result in a permanent substantial decrease in bus rider safety
- (14) Generate substantial multi-modal traffic traveling across at-grade railroad crossings that cause or expose roadway users (e.g., motorists, pedestrians, bus riders, bicyclists) to a permanent and substantial transportation hazard.<sup>13</sup>

### **Other Thresholds**

- (15) Fundamentally conflict with adopted City policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities adopted for the purpose of avoiding or mitigating an environmental effect and actually result in a physical change in the environment;
- (16) Result in a substantial, though temporary, adverse effect on the circulation system during construction of the project; or
- (17) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

### **Cumulative Impacts**

- (18) A project's contribution to cumulative impacts is considered "considerable" (i.e., significant) when the project exceeds at least one of the thresholds listed above in a future year scenario.

**b. Project Traffic Impact Analysis.** This section evaluates impacts of Phase 1 and Phase 2 (i.e., buildout) of the project on traffic operations at the 21 study intersections under Existing, 2020, and 2035 conditions.

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<sup>12</sup> Refer to ACTC's *Congestion Management Program* for a description of the MTS and the Land Use Analysis Program. The ACTC will identify the roadway segments of the MTS that require evaluation in its letter commenting on the Notice of Preparation (NOP) issued by the City for the project (see section 6.c.(7), I.D.6.b(13), Required Congestion Management Program (CMP) Evaluation, for list of these roadway segments). Note that the City is required to send NOPs and notices of proposed general plan amendments to ACTC under the Land Use Analysis Program regardless of how many project-related trips are expected to be generated.

<sup>13</sup> Refer to the City's Standard Conditions of Approval for conditions related to at-grade railroad crossings.

**(1) Existing Plus Phase 1 Conditions Intersection Analysis.** This section analyzes the transportation system with traffic generated by Phase 1 project added to the existing traffic volumes. This analysis presents the extent of Phase 1 impacts relative to existing conditions based on application of Significance Thresholds #1 through #6 as listed in section 6.a.

**Traffic Volumes.** Figure IV.D-18 shows the traffic volumes for the Existing Plus Phase 1 Conditions. They include existing traffic volumes plus net added traffic volumes generated by Phase 1 of the project.

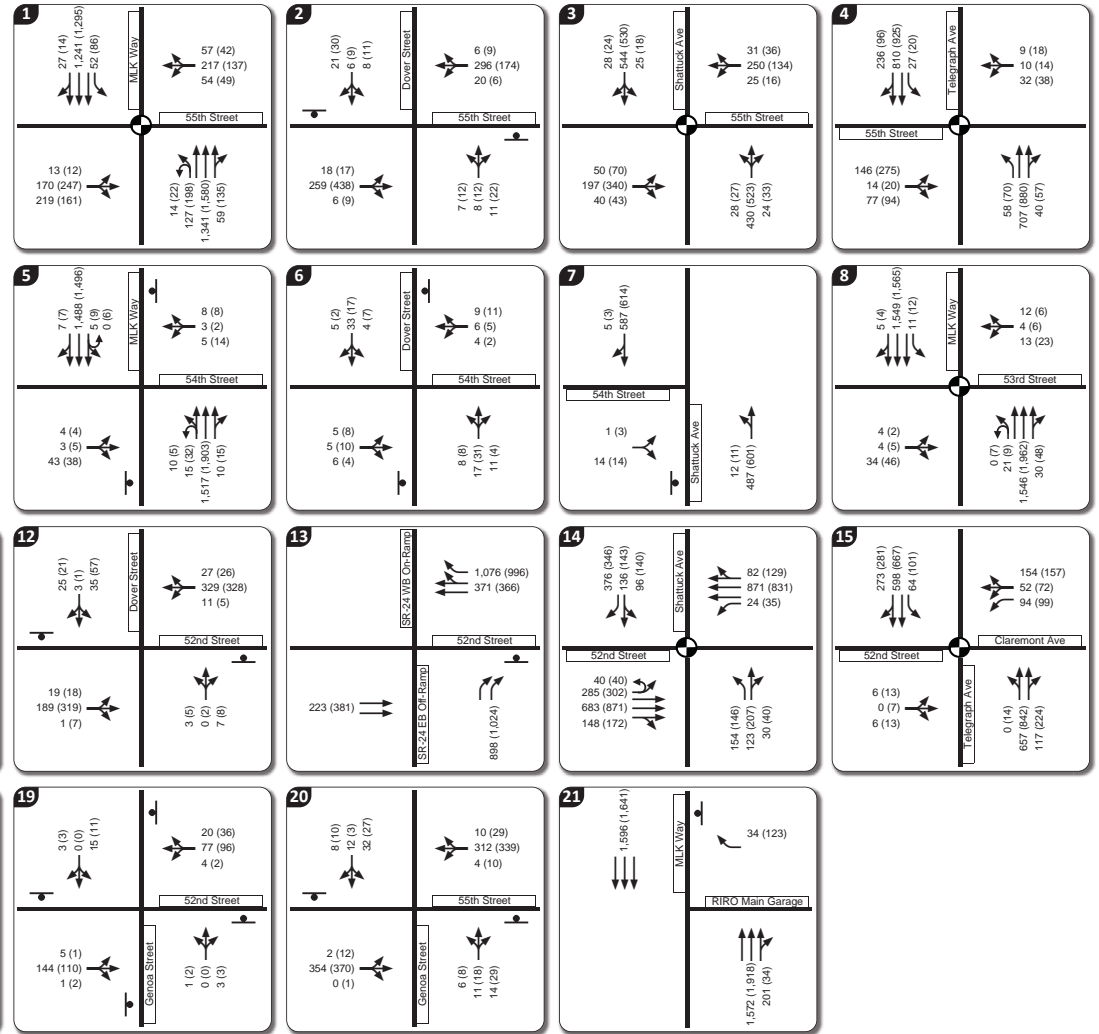
**Roadway Network.** Phase 1 of the project would create a new intersection on Martin Luther King Jr. Way between 52<sup>nd</sup> and 53<sup>rd</sup> Streets that would provide right-in/right-out only access to and from the existing Main Garage. The existing Main Garage driveway on 52<sup>nd</sup> Street (intersection #11) would only be used for inbound and outbound access for the Emergency Department parking and outbound only access for the Main Garage. In addition, left-turns out of this driveway would be prohibited. No other modifications to the study intersections, including signal timing optimization, are assumed for the Existing Plus Phase 1 analysis.

**Intersection Operations Analysis.** Intersection LOS calculations were completed with the traffic volumes and roadway network described above. Table IV.D-15 summarizes intersection operations under Existing Plus Phase 1 conditions at the 21 study intersections. Appendix C provides the detailed LOS calculations.

All study intersections would continue to operate at the same LOS, but would experience slightly more delay, as under Existing Conditions with the addition of Phase 1 project trips. All intersections, except one, would continue to operate at an acceptable LOS. The stop-controlled eastbound SR 24 Off-Ramp at 52<sup>nd</sup> Street (intersection #13) would continue to operate at LOS F during the PM peak hour. The Phase 1 project would add less than ten vehicles to the critical movement at this intersection (Significance Threshold #6). Therefore, Phase 1 of the project would not cause a significant impact on traffic operations at this or other study intersections under Existing Plus Phase 1 conditions.

**(2) Existing Plus Phase 2 Conditions Intersection Analysis.** This section analyzes the transportation system with traffic generated by Phases 1 and 2 of the project added to the existing traffic volumes. This analysis presents the extent of Phase 2 impacts relative to existing conditions based on application of Significance Thresholds #1 through #6 as listed in section 6.a.

**Traffic Volumes.** Figure IV.D-19 shows the traffic volumes for the Existing Plus Phase 2 Conditions. They include existing traffic volumes plus net added traffic volumes generated by Phases 1 and 2 of the project.



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FIGURE IV.D-18

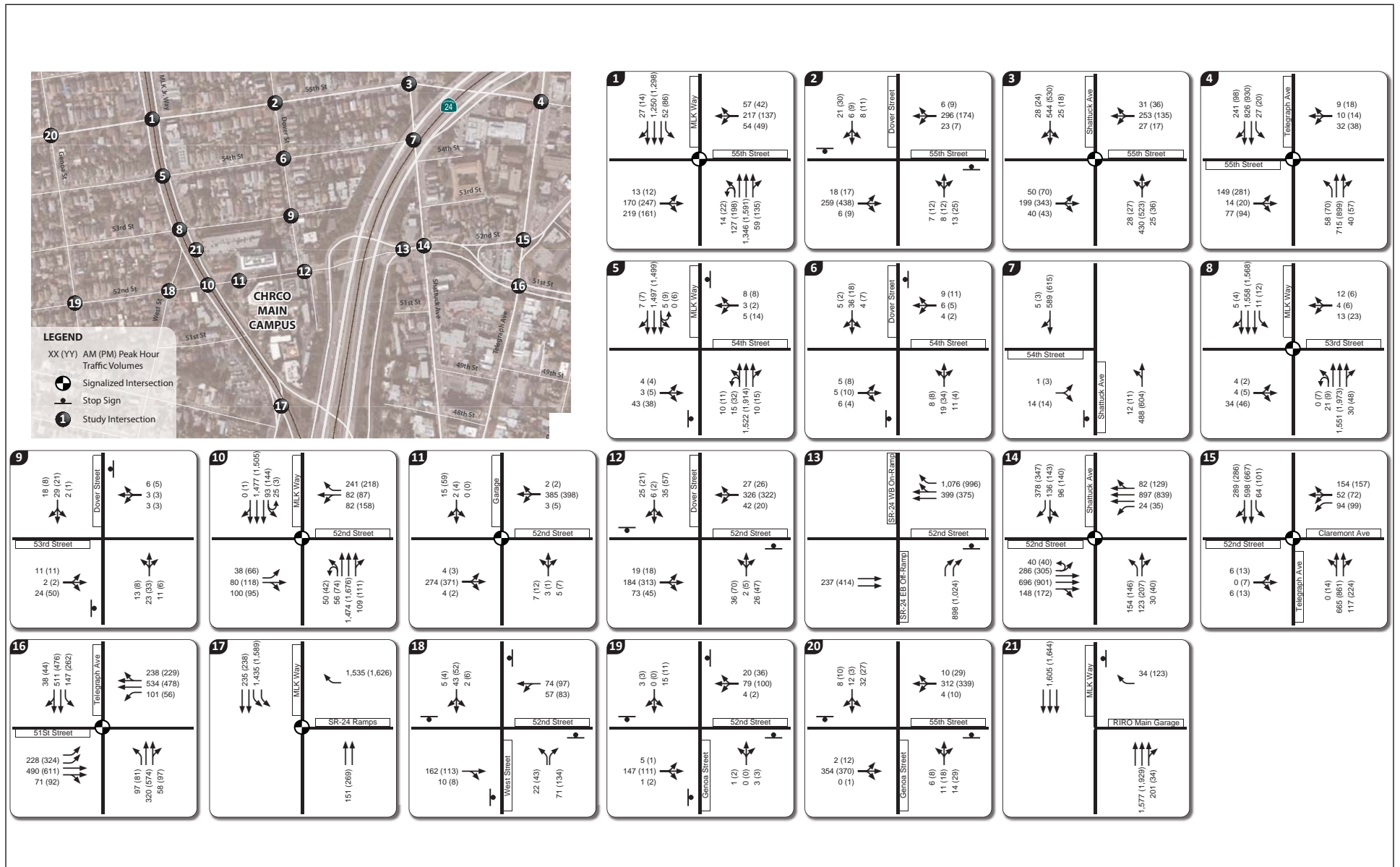
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SOURCE: FEHR & PEERS, MAY 2014.

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CHRCO Campus Master Plan Project EIR  
Existing Plus Phase 1 - Peak Hour Traffic Volumes,  
Lane Configurations, and Intersection Controls





LSA

FIGURE IV.D-19

NOT TO SCALE

SOURCE: FEHR & PEERS, MAY 2014.

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CHRCO Campus Master Plan Project EIR  
Existing Plus Phase 2 - Peak Hour Traffic Volumes,  
Lane Configurations, and Intersection Controls

**Table IV.D-15: Existing Plus Project Intersection LOS Summary**

|     | Intersection  | Traffic Control <sup>a</sup> | Peak Hour | Existing Conditions          |              | Existing Plus Phase 1        |              | Existing Plus Phase 2        |              |
|-----|---|------------------------------|-----------|------------------------------|--------------|------------------------------|--------------|------------------------------|--------------|
|     |   |                              |           | Delay <sup>b</sup> (seconds) | LOS          | Delay <sup>b</sup> (seconds) | LOS          | Delay <sup>b</sup> (seconds) | LOS          |
| 1   | Martin Luther King Jr. Way/ 55 <sup>th</sup> Street       | Signal                       | AM        | 18.9                         | B            | 19.0                         | B            | 18.9                         | B            |
|     |   |                              | PM        | 22.3                         | C            | 22.5                         | C            | 22.6                         | C            |
| 2   | Dover Street/55 <sup>th</sup> Street                      | SSSC                         | AM        | 1.8 (13.3)                   | A (B)        | 1.8 (13.4)                   | A (B)        | 1.8 (13.3)                   | A (B)        |
|     |   |                              | PM        | 2.1 (13.8)                   | A (B)        | 2.1 (14.4)                   | A (B)        | 2.1 (14.3)                   | A (B)        |
| 3   | Shattuck Avenue/55 <sup>th</sup> Street                   | Signal                       | AM        | 17.0                         | B            | 17.2                         | B            | 17.3                         | B            |
|     |   |                              | PM        | 18.6                         | B            | 19.7                         | B            | 19.8                         | B            |
| 4   | Telegraph Avenue/55 <sup>th</sup> Street                  | Signal                       | AM        | 9.4                          | A            | 9.7                          | A            | 9.9                          | A            |
|     |   |                              | PM        | 15.3                         | B            | 17.6                         | B            | 17.9                         | B            |
| 5   | Martin Luther King Jr. Way/ 54 <sup>th</sup> Street       | SSSC                         | AM        | 0.5 (21.8)                   | A (C)        | 0.5 (24.8)                   | A (C)        | 0.5 (24.9)                   | A (C)        |
|     |   |                              | PM        | 0.6 (23.1)                   | A (C)        | 0.7 (24.2)                   | A (C)        | 0.7 (24.9)                   | A (C)        |
| 6   | Dover Street/54 <sup>th</sup> Street                      | SSSC                         | AM        | 3.6 (9.2)                    | A (A)        | 3.6 (9.2)                    | A (A)        | 3.5 (9.3)                    | A (A)        |
|     |   |                              | PM        | 4.4 (9.5)                    | A (A)        | 4.4 (9.5)                    | A (A)        | 4.3 (9.5)                    | A (A)        |
| 7   | Shattuck Avenue/54 <sup>th</sup> Street                   | SSSC                         | AM        | 0.3 (12.7)                   | A (B)        | 0.3 (12.7)                   | A (B)        | 0.3 (12.7)                   | A (B)        |
|     |   |                              | PM        | 0.4 (14.4)                   | A (B)        | 0.4 (14.3)                   | A (B)        | 0.4 (14.3)                   | A (B)        |
| 8   | Martin Luther King Jr. Way/ 53 <sup>rd</sup> Street       | Signal                       | AM        | 3.7                          | A            | 3.9                          | A            | 3.8                          | A            |
|     |   |                              | PM        | 3.7                          | A            | 3.9                          | A            | 3.9                          | A            |
| 9   | Dover Street/53 <sup>rd</sup> Street                      | SSSC                         | AM        | 3.8 (9.3)                    | A (A)        | 4.0 (9.3)                    | A (A)        | 3.9 (9.3)                    | A (A)        |
|     |   |                              | PM        | 4.1 (9.2)                    | A (A)        | 5.0 (9.3)                    | A (A)        | 4.9 (9.3)                    | A (A)        |
| 10  | Martin Luther King Jr. Way/ 52 <sup>nd</sup> Street       | Signal                       | AM        | 18.0                         | B            | 18.3                         | B            | 19.6                         | B            |
|     |   |                              | PM        | 22.1                         | C            | 22.4                         | C            | 26.6                         | C            |
| 11  | CHRCO Garage Driveways/ 52 <sup>nd</sup> Street           | Signal                       | AM        | 12.3                         | B            | 12.8                         | B            | 11.9                         | B            |
|     |   |                              | PM        | 14.1                         | B            | 14.6                         | B            | 15.4                         | B            |
| 12  | Dover Street-Hospital Driveway/52 <sup>nd</sup> Street    | SSSC                         | AM        | 1.8 (13.1)                   | A (B)        | 1.9 (12.8)                   | A (B)        | 3.0 (13.4)                   | A (B)        |
|     |   |                              | PM        | 1.5 (14.7)                   | A (B)        | 1.9 (13.9)                   | A (B)        | 3.9 (16.5)                   | A (C)        |
| 13  | SR 24 Ramps/52 <sup>nd</sup> Street                       | SSSC                         | AM        | 4.8 (13.6)                   | A (B)        | 4.7 (13.5)                   | A (B)        | 4.7 (13.7)                   | A (B)        |
|     |   |                              | PM        | ** (**)                      | <b>F (F)</b> | ** (**)                      | <b>F (F)</b> | ** (**)                      | <b>F (F)</b> |
| 14  | Shattuck Avenue/52 <sup>nd</sup> Street                   | Signal                       | AM        | 29.2                         | C            | 29.3                         | C            | 29.9                         | C            |
|     |   |                              | PM        | 36.0                         | D            | 36.2                         | D            | 36.2                         | D            |
| 15* | Telegraph Avenue-Claremont Avenue/52 <sup>nd</sup> Street | Signal                       | AM        | 14.3                         | B            | 14.2                         | B            | 14.3                         | B            |
|     |   |                              | PM        | 17.2                         | B            | 17.2                         | B            | 17.2                         | B            |
| 16* | Telegraph Avenue/51 <sup>st</sup> Street                  | Signal                       | AM        | 30.6                         | C            | 30.4                         | C            | 30.7                         | C            |
|     |   |                              | PM        | 45.2                         | D            | 44.8                         | D            | 44.8                         | D            |
| 17  | SR 24 Ramps/Martin Luther King Jr. Way                    | Signal                       | AM        | 9.4                          | A            | 9.5                          | A            | 10.4                         | B            |
|     |   |                              | PM        | 19.8                         | B            | 19.9                         | B            | 21.0                         | C            |
| 18  | West Street/52 <sup>nd</sup> Street                       | AWSC                         | AM        | 8.1                          | A            | 8.1                          | A            | 8.2                          | A            |
|     |   |                              | PM        | 8.4                          | A            | 8.4                          | A            | 8.4                          | A            |
| 19  | Genoa Street/52 <sup>nd</sup> Street                      | AWSC                         | AM        | 7.7                          | A            | 7.7                          | A            | 7.7                          | A            |
|     |   |                              | PM        | 7.6                          | A            | 7.6                          | A            | 7.6                          | A            |
| 20  | Genoa Street/55 <sup>th</sup> Street                      | SSSC                         | AM        | 1.8 (16.7)                   | A (C)        | 1.8 (16.7)                   | A (C)        | 1.8 (16.7)                   | A (C)        |
|     |   |                              | PM        | 2.1 (17.8)                   | A (C)        | 2.1 (17.9)                   | A (C)        | 2.1 (17.9)                   | A (C)        |
| 21  | Martin Luther King Jr. Way/ Garage Driveway               | SSSC                         | AM        | N/A                          | N/A          | 0.1 (9.4)                    | A (A)        | 0.1 (9.6)                    | A (A)        |
|     |   |                              | PM        | N/A                          | N/A          | 0.4 (10.6)                   | A (B)        | 0.4 (10.8)                   | A (B)        |

<sup>a</sup> Signal = intersection is controlled by a traffic signal; AWSC = intersection is controlled by stop-signs on all approaches; SSSC = Intersection is controlled by a stop-sign on the side-street approach;

<sup>b</sup> For signalized intersections, average intersection delay and LOS based on the 2000 HCM method is shown. For side-street stop-controlled intersections, delays for worst movement and average intersection delay are shown: intersection average (worst movement)

\* Denotes an intersection located in Downtown or on an arterial providing access to Downtown where LOS E is the LOS standard. For all other intersections, not located in Downtown or on an arterial providing access to Downtown, LOS D is the LOS standard.

\*\* Delay cannot be estimated accurately because the Synchro software does not correctly account for the queues on eastbound 52<sup>nd</sup> Street at Shattuck Avenue blocking the off-ramp. Reported LOS is based on field observations.

Source: Fehr & Peers, 2014.

**Roadway Network.** In addition to the roadway network changes under Phase 1 described above, Phase 2 of the project would modify the south approach of the Dover Street-Hospital Driveway/52<sup>nd</sup> Street intersection (#12) to provide access to the new main pick-up/drop off area and a new parking garage. In order to accommodate Class 2 bicycle lanes along project frontage on 52<sup>nd</sup> Street, the project would narrow eastbound 52<sup>nd</sup> Street between Martin Luther King Jr. Way and just east of the signalized Garage Driveway and westbound 52<sup>nd</sup> Street approach at the signalized Garage Driveway (intersection #11) to one lane. No other modifications to the study intersections, including signal timing optimization, are assumed for the Existing Plus Phase 2 analysis.

**Intersection Operations Analysis.** Intersection LOS calculations were completed with the traffic volumes and roadway network described above. **Table IV.D-15** summarizes intersection operations under Existing Plus Phase 2 conditions at the 21 study intersections. Appendix C provides the detailed LOS calculations.

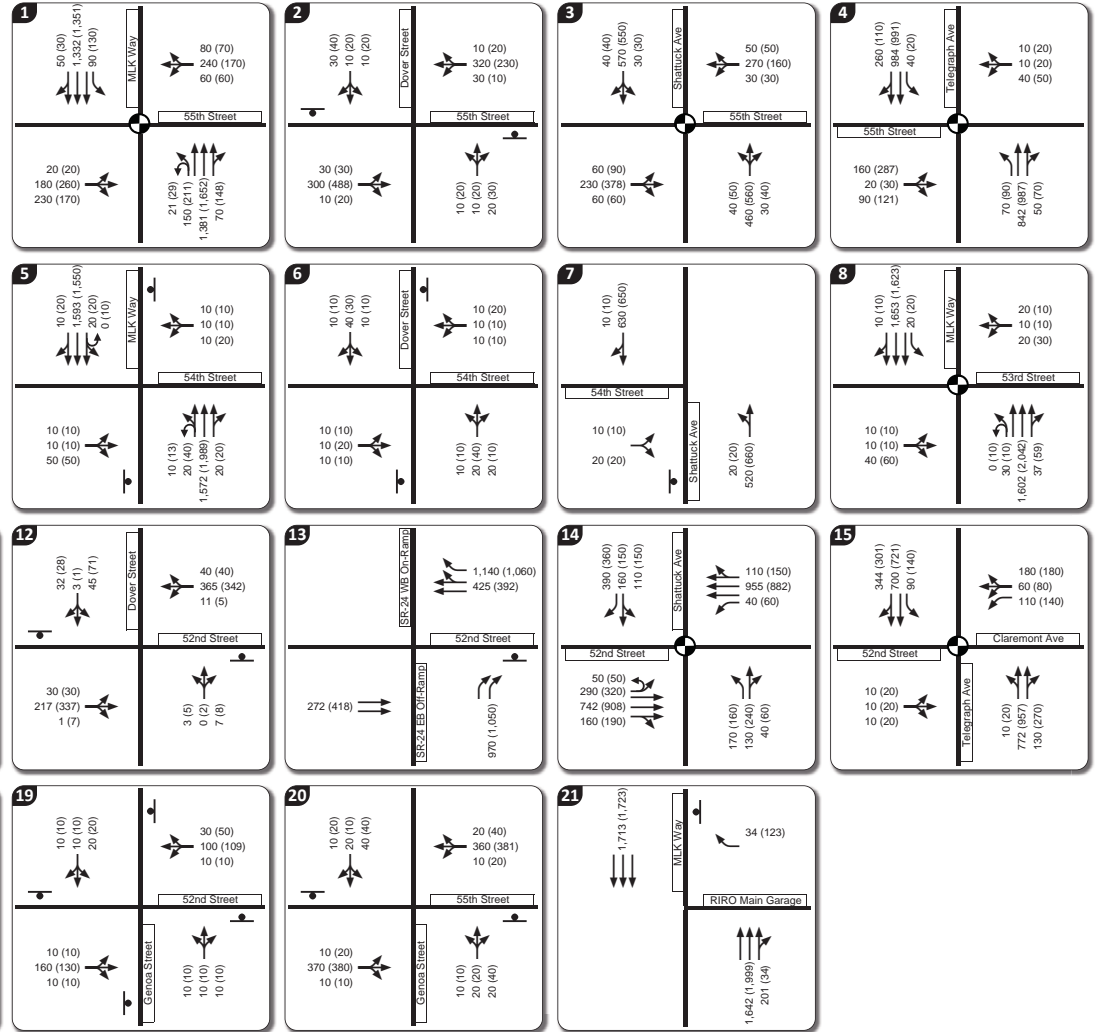
All study intersections would continue to operate at the same LOS, but would experience slightly more delay, as under Existing and Existing Plus Phase 1 Conditions with the addition of Phase 2 project trips. All intersections, except one, would continue to operate at an acceptable LOS. The stop-controlled eastbound SR 24 Off-Ramp at 52<sup>nd</sup> Street (intersection #13) would continue to operate at LOS F during the PM peak hour. The Phase 2 project would add less than ten vehicles to the critical movement at this intersection (Significance Threshold #6). Therefore, Phase 2 of the project would not cause a significant impact on traffic operations at this or other study intersections under Existing Plus Phase 2 conditions.

**(3) 2020 Plus Phase 1 Conditions Intersection Analysis.** This section analyzes the transportation system with traffic generated by Phase 1 project added to the 2020 No Project traffic volumes. This analysis presents the extent of Phase 1 impacts relative to 2020 No Project conditions based on direct application of Significance Threshold #18 which references Significance Thresholds #1 through #6 as listed in section 6.a.

**Traffic Volumes.** **Figure IV.D-20** shows the traffic volumes for the 2020 Plus Phase 1 Conditions. They include 2020 No Project traffic volumes plus net added traffic volumes generated by Phase 1 of the project.

**Roadway Network.** Phase 1 of the project would create a new intersection on Martin Luther King Jr. Way between 52<sup>nd</sup> and 53<sup>rd</sup> Streets that would provide right-in/right-out only access to and from the existing Main Garage. The existing Main Garage driveway on 52<sup>nd</sup> Street (intersection #11) would only be used for inbound and outbound access for the Emergency Department parking and outbound only access for the Main Garage. In addition, left-turns out of this driveway would be prohibited. No other physical modifications to the study intersections are assumed for the 2020 Plus Phase 1 analysis. However, this analysis assumes that signal timing parameters that do not require upgrades to the signal equipment, such as amount of green time assigned to each intersection approach, would be optimized at the signalized study intersections.

**Intersection Operations Analysis.** Intersection LOS calculations were completed with the traffic volumes and roadway network described above. **Table IV.D-16** summarizes intersection operations under 2020 Plus Phase 1 conditions at the 21 study intersections. Appendix C provides the detailed LOS calculations.



LSA

FIGURE IV.D-20

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SOURCE: FEHR & PEERS, MAY 2014.

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2020 Plus Phase 1 - Peak Hour Traffic Volumes,  
Lane Configurations, and Intersection Controls

**Table IV.D-16: 2020 Plus Project Intersection LOS Summary**

|     | Intersection   | Traffic Control <sup>a</sup> | Peak Hour | 2020 No Project                 |              | 2020 Plus Phase 1               |              | 2020 Plus Phase 2               |              |
|-----|--|------------------------------|-----------|---------------------------------|--------------|---------------------------------|--------------|---------------------------------|--------------|
|     |  |                              |           | Delay <sup>b</sup><br>(seconds) | LOS          | Delay <sup>b</sup><br>(seconds) | LOS          | Delay <sup>b</sup><br>(seconds) | LOS          |
| 1   | Martin Luther King Jr. Way/<br>55 <sup>th</sup> Street       | Signal                       | AM        | 22.3                            | C            | 22.4                            | C            | 22.3                            | C            |
|     |  |                              | PM        | 25.9                            | C            | 26.1                            | C            | 26.1                            | C            |
| 2   | Dover Street/55 <sup>th</sup> Street                         | SSSC                         | AM        | 2.5 (15.0)                      | A (B)        | 2.5 (15.1)                      | A (C)        | 2.5 (15.1)                      | A (C)        |
|     |  |                              | PM        | 3.4 (17.9)                      | A (C)        | 3.4 (19.1)                      | A (C)        | 3.5 (19.0)                      | A (C)        |
| 3   | Shattuck Avenue/55 <sup>th</sup> Street                      | Signal                       | AM        | 19.5                            | B            | 19.8                            | B            | 19.9                            | B            |
|     |  |                              | PM        | 22.4                            | C            | 24.8                            | C            | 25                              | C            |
| 4   | Telegraph Avenue/55 <sup>th</sup> Street                     | Signal                       | AM        | 10.7                            | B            | 11.2                            | B            | 11.3                            | B            |
|     |  |                              | PM        | 17.9                            | B            | 20.5                            | C            | 21                              | C            |
| 5   | Martin Luther King Jr. Way/<br>54 <sup>th</sup> Street       | SSSC                         | AM        | 1.0 (34.2)                      | A (D)        | <b>1.0 (38.5)</b>               | <b>A (E)</b> | <b>1.0 (38.7)</b>               | <b>A (E)</b> |
|     |  |                              | PM        | <b>1.3 (40.4)</b>               | <b>A (E)</b> | 1.3 (42.8)                      | <b>A (E)</b> | 1.3 (43.2)                      | <b>A (E)</b> |
| 6   | Dover Street/54 <sup>th</sup> Street                         | SSSC                         | AM        | 4.3 (9.6)                       | A (A)        | 4.3 (9.6)                       | A (A)        | 4.2 (9.7)                       | A (A)        |
|     |  |                              | PM        | 4.9 (9.9)                       | A (A)        | 4.9 (9.9)                       | A (A)        | 4.8 (9.9)                       | A (A)        |
| 7   | Shattuck Avenue/54 <sup>th</sup> Street                      | SSSC                         | AM        | 0.7 (18.1)                      | A (C)        | 0.7 (17.9)                      | A (C)        | 0.7 (18.0)                      | A (C)        |
|     |  |                              | PM        | 0.7 (18.1)                      | A (C)        | 0.7 (17.8)                      | A (C)        | 0.7 (17.9)                      | A (C)        |
| 8   | Martin Luther King Jr. Way/<br>53 <sup>rd</sup> Street       | Signal                       | AM        | 4.7                             | A            | 4.9                             | A            | 4.9                             | A            |
|     |  |                              | PM        | 4.4                             | A            | 4.6                             | A            | 4.5                             | A            |
| 9   | Dover Street/53 <sup>rd</sup> Street                         | SSSC                         | AM        | 5.1 (10.1)                      | A (B)        | 5.2 (10.1)                      | A (B)        | 5.1 (10.2)                      | A (B)        |
|     |  |                              | PM        | 5.2 (9.8)                       | A (A)        | 5.7 (9.9)                       | A (A)        | 5.6 (10.0)                      | A (A)        |
| 10  | Martin Luther King Jr. Way/<br>52 <sup>nd</sup> Street       | Signal                       | AM        | 21.2                            | C            | 21.3                            | C            | 21.9                            | C            |
|     |  |                              | PM        | 23.9                            | C            | 24.2                            | C            | 29.0                            | C            |
| 11  | CHRCO Garage Driveways/<br>52 <sup>nd</sup> Street           | Signal                       | AM        | 12.7                            | B            | 13.0                            | B            | 12.4                            | B            |
|     |  |                              | PM        | 14.1                            | B            | 14.6                            | B            | 12.7                            | B            |
| 12  | Dover Street-Hospital<br>Driveway/52 <sup>nd</sup> Street    | SSSC                         | AM        | 2.1 (14.4)                      | A (B)        | 2.2 (14.3)                      | A (B)        | 3.3 (14.9)                      | A (B)        |
|     |  |                              | PM        | 2.0 (16.1)                      | A (C)        | 2.4 (15.3)                      | A (C)        | 4.4 (18.3)                      | A (C)        |
| 13  | SR 24 Ramps/52 <sup>nd</sup> Street                          | SSSC                         | AM        | 5.4 (15.7)                      | A (C)        | 5.4 (15.5)                      | A (C)        | 5.4 (15.8)                      | A (C)        |
|     |  |                              | PM        | <b>** (**)</b>                  | <b>F (F)</b> | <b>** (**)</b>                  | <b>F (F)</b> | <b>** (**)</b>                  | <b>F (F)</b> |
| 14  | Shattuck Avenue/52 <sup>nd</sup> Street                      | Signal                       | AM        | 36.0                            | D            | 36.5                            | D            | 38.8                            | D            |
|     |  |                              | PM        | 39.8                            | D            | 40                              | D            | 40                              | D            |
| 15* | Telegraph Avenue-Claremont<br>Avenue/52 <sup>nd</sup> Street | Signal                       | AM        | 17.8                            | B            | 17.7                            | B            | 17.8                            | B            |
|     |  |                              | PM        | 21.3                            | C            | 21.2                            | C            | 21.2                            | C            |
| 16* | Telegraph Avenue/51 <sup>st</sup> Street                     | Signal                       | AM        | 33.9                            | C            | 33.7                            | C            | 34.1                            | C            |
|     |  |                              | PM        | 49.8                            | D            | 49.4                            | D            | 49.7                            | D            |
| 17  | SR 24 Ramps/Martin Luther<br>King Jr. Way                    | Signal                       | AM        | 11.3                            | B            | 11.5                            | B            | 12.8                            | B            |
|     |  |                              | PM        | 35.0                            | C            | 35.2                            | D            | 36.7                            | D            |
| 18  | West Street/52 <sup>nd</sup> Street                          | AWSC                         | AM        | 8.6                             | A            | 8.6                             | A            | 8.6                             | A            |
|     |  |                              | PM        | 8.8                             | A            | 8.8                             | A            | 8.9                             | A            |
| 19  | Genoa Street/52 <sup>nd</sup> Street                         | AWSC                         | AM        | 8.0                             | A            | 8.1                             | A            | 8.1                             | A            |
|     |  |                              | PM        | 8.0                             | A            | 8.0                             | A            | 8.0                             | A            |
| 20  | Genoa Street/55 <sup>th</sup> Street                         | SSSC                         | AM        | 2.8 (21.3)                      | A (C)        | 2.8 (21.3)                      | A (C)        | 2.8 (21.3)                      | A (C)        |
|     |  |                              | PM        | 3.2 (22.5)                      | A (C)        | 3.2 (22.6)                      | A (C)        | 3.2 (22.6)                      | A (C)        |
| 21  | Martin Luther King Jr. Way/<br>Garage Driveway               | SSSC                         | AM        | N/A                             | N/A          | 0.1 (9.6)                       | A (A)        | 0.1 (9.7)                       | A (A)        |
|     |  |                              | PM        | N/A                             | N/A          | 0.3 (10.8)                      | A (B)        | 0.4 (11.1)                      | A (B)        |

<sup>a</sup> Signal = intersection is controlled by a traffic signal; AWSC = intersection is controlled by stop-signs on all approaches; SSSC = Intersection is controlled by a stop-sign on the side-street approach;

<sup>b</sup> For signalized intersections, average intersection delay and LOS based on the 2000 HCM method is shown. For side-street stop-controlled intersections, delays for worst movement and average intersection delay are shown: intersection average (worst movement)

\* Denotes an intersection located in Downtown or on an arterial providing access to Downtown where LOS E is the LOS standard. For all other intersections, not located in Downtown or on an arterial providing access to Downtown, LOS D is the LOS standard.

\*\* Delay cannot be estimated accurately because the Synchro software does not correctly account for the queues on eastbound 52<sup>nd</sup> Street at Shattuck Avenue blocking the off-ramp. Reported LOS is based on field observations.

Source: Fehr & Peers, 2014.

All study intersections would continue to operate at the same LOS, but would experience slightly more delay, as under 2020 No Project Conditions with the addition of Phase 1 project trips. All intersections, except the following, would continue to operate at an acceptable LOS:

- The westbound stop-controlled approach at the Martin Luther King Jr. Way/54<sup>th</sup> Street intersection (#5) would operate at LOS E during both AM and PM peak hours. The Phase 1 project would add less than ten vehicles to the critical movement at this intersection (Significance Threshold #6). Therefore, Phase 1 of the project would not cause a significant impact on traffic operations at this intersection under 2020 Plus Phase 1 conditions.
- The northbound stop-controlled approach at the SR 24 Ramps/52<sup>nd</sup> Street intersection (#13) would continue to operate at LOS F during the PM peak hour. The Phase 1 project would add less than ten vehicles to the critical movement at this intersection (Significance Threshold #6). Therefore, Phase 1 of the project would not cause a significant impact on traffic operations at this intersection under 2020 Plus Phase 1 conditions.

Phase 1 of the project would not cause a significant impact on traffic operations at the study intersections under 2020 Plus Phase 1 conditions.

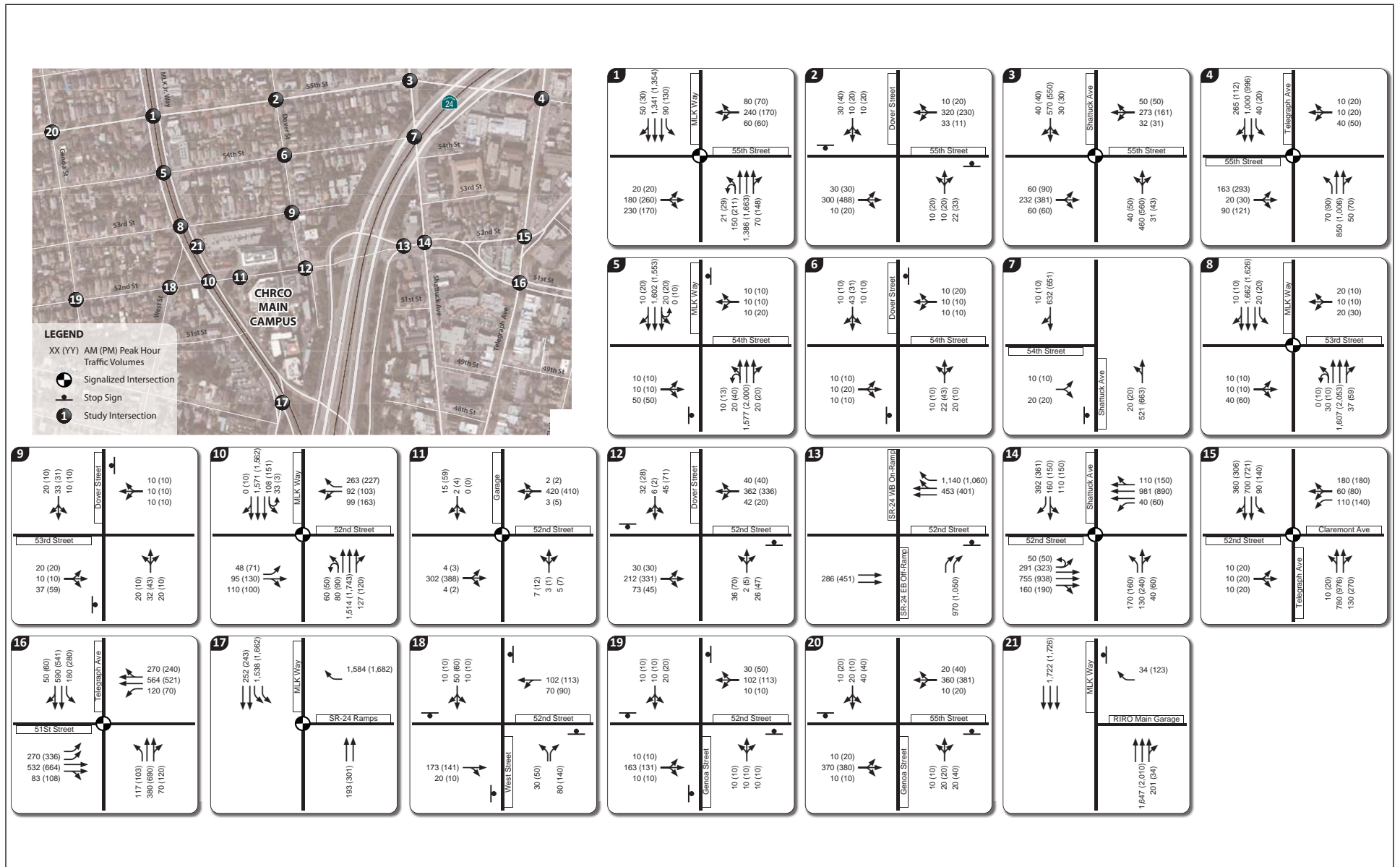
**(4) 2020 Plus Phase 2 Conditions Intersection Analysis.** This section analyzes the transportation system with traffic generated by Phases 1 and 2 of the project added to the 2020 No Project traffic volumes. This analysis presents the extent of Phase 2 impacts relative to 2020 No Project conditions based on direct application of Significance Threshold #18 which references Significance Thresholds #1 through #6 as listed in section 6.a.

**Traffic Volumes.** Figure IV.D-21 shows the traffic volumes for the 2020 Plus Phase 2 Conditions. They include 2020 No Project traffic volumes plus net added traffic volumes generated by Phases 1 and 2 of the project.

**Roadway Network.** In addition to the roadway network changes under Phase 1 described above, , Phase 2 of the project would modify the south approach of the Dover Street-Hospital Driveway/52<sup>nd</sup> Street intersection (#12) to provide access to the new main pick-up/drop off area and a new parking garage. In order to accommodate Class 2 bicycle lanes along project frontage on 52<sup>nd</sup> Street, the project would narrow eastbound 52<sup>nd</sup> Street between Martin Luther King Jr. Way and just east of the signalized Garage Driveway and westbound 52<sup>nd</sup> Street approach at the signalized Garage Driveway (intersection #11) to one lane. No other physical modifications to the study intersections are assumed for the 2020 Plus Phase 2 analysis. However, this analysis assumes that signal timing parameters that do not require upgrades to the signal equipment, such as amount of green time assigned to each intersection approach, would be optimized at the signalized study intersections.

**Intersection Operations Analysis.** Intersection LOS calculations were completed with the traffic volumes and roadway network described above. Table IV.D-16 summarizes intersection operations under 2020 Plus Phase 2 conditions at the 21 study intersections. Appendix C provides the detailed LOS calculations.





LSA

FIGURE IV.D-21

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SOURCE: FEHR & PEERS, MAY 2014.

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CHRCO Campus Master Plan Project EIR  
2020 Plus Phase 2 - Peak Hour Traffic Volumes,  
Lane Configurations, and Intersection Controls



All study intersections would continue to operate at the same LOS, but would experience slightly more delay, as under 2020 No Project and 2020 Plus Phase 1 Conditions with the addition of Phase 2 project trips. All intersections, except the following, would continue to operate at an acceptable LOS:

- The westbound stop-controlled approach at the Martin Luther King Jr. Way/54<sup>th</sup> Street intersection (#5) would operate at LOS E during both AM and PM peak hours. The Phase 2 project would add less than ten vehicles to the critical movement at this intersection (Significance Threshold #6). Therefore, Phase 2 of the project would not cause a significant impact on traffic operations at this intersection under 2020 Plus Phase 2 conditions.
- The northbound stop-controlled approach at the SR 24 Ramps/52<sup>nd</sup> Street intersection (#13) would continue to operate at LOS F during the PM peak hour. The Phase 2 project would add less than ten vehicles to the critical movement at this intersection (Significance Threshold #6). Therefore, Phase 2 of the project would not cause a significant impact on traffic operations at this intersection under 2020 Plus Phase 2 conditions.

Phase 2 of the project would not cause a significant impact on traffic operations at the study intersections under 2020 Plus Phase 2 conditions.

**(5) 2035 Plus Phase 1 Conditions Intersection Analysis.** This section analyzes the transportation system with traffic generated by Phase 1 project added to the 2035 No Project traffic volumes. This analysis presents the extent of Phase 1 impacts relative to 2035 No Project conditions based on direct application of Significance Threshold #18 which references Significance Thresholds #1 through #6 as listed in section 6.a.

**Traffic Volumes.** Figure IV.D-22 shows the traffic volumes for the 2035 Plus Phase 1 Conditions. They include 2035 No Project traffic volumes plus net added traffic volumes generated by Phase 1 of the project.

**Roadway Network.** Phase 1 of the project would create a new intersection on Martin Luther King Jr. Way between 52<sup>nd</sup> and 53<sup>rd</sup> Streets that would provide right-in/right-out only access to and from the existing Main Garage. The existing Main Garage driveway on 52<sup>nd</sup> Street (intersection #11) would only be used for inbound and outbound access for the Emergency Department parking and outbound only access for the Main Garage. In addition, left-turns out of this driveway would be prohibited. No other physical modifications to the study intersections are assumed for the 2035 Plus Phase 1 analysis. However, this analysis assumes that signal timing parameters that do not require upgrades to the signal equipment, such as amount of green time assigned to each intersection approach, would be optimized at the signalized study intersections.

**Intersection Operations Analysis.** Intersection LOS calculations were completed with the traffic volumes and roadway network described above. Table IV.D-17 summarizes intersection operations under 2035 Plus Phase 1 conditions at the 21 study intersections. Appendix C provides the detailed LOS calculations.



**Table IV.D-17: 2035 Plus Project Intersection LOS Summary**

|     | Intersection   | Traffic Control <sup>a</sup> | Peak Hour | 2035 No Project                 |              | 2035 Plus Phase 1               |              | 2035 Plus Phase 2               |              |
|-----|--|------------------------------|-----------|---------------------------------|--------------|---------------------------------|--------------|---------------------------------|--------------|
|     |  |                              |           | Delay <sup>b</sup><br>(seconds) | LOS          | Delay <sup>b</sup><br>(seconds) | LOS          | Delay <sup>b</sup><br>(seconds) | LOS          |
| 1   | Martin Luther King Jr. Way/<br>55 <sup>th</sup> Street       | Signal                       | AM        | 30.1                            | C            | 30.2                            | C            | 30.1                            | C            |
|     |  |                              | PM        | 34.9                            | C            | 35.4                            | D            | 35.8                            | D            |
| 2   | Dover Street/55 <sup>th</sup> Street                         | SSSC                         | AM        | 2.4 (17.5)                      | A (C)        | 2.4 (17.7)                      | A (C)        | 2.5 (17.6)                      | A (C)        |
|     |  |                              | PM        | 3.6 (23.3)                      | A (C)        | 3.7 (25.2)                      | A (D)        | 3.8 (25.1)                      | A (C)        |
| 3   | Shattuck Avenue/55 <sup>th</sup> Street                      | Signal                       | AM        | 28.4                            | C            | 29.5                            | C            | 30.0                            | C            |
|     |  |                              | PM        | 36.2                            | D            | 43.4                            | D            | 44.1                            | D            |
| 4   | Telegraph Avenue/55 <sup>th</sup> Street                     | Signal                       | AM        | 15.3                            | B            | 15.7                            | B            | 16.1                            | B            |
|     |  |                              | PM        | 24.8                            | C            | 29.9                            | C            | 31.0                            | C            |
| 5   | Martin Luther King Jr. Way/<br>54 <sup>th</sup> Street       | SSSC                         | AM        | <b>1.1 (39.2)</b>               | <b>A (E)</b> | <b>1.1 (41.6)</b>               | <b>A (E)</b> | <b>1.1 (41.7)</b>               | <b>A (E)</b> |
|     |  |                              | PM        | <b>1.4 (43.4)</b>               | <b>A (E)</b> | <b>1.4 (44.8)</b>               | <b>A (E)</b> | <b>1.4 (44.9)</b>               | <b>A (E)</b> |
| 6   | Dover Street/54 <sup>th</sup> Street                         | SSSC                         | AM        | 4.3 (9.7)                       | A (A)        | 4.3 (9.7)                       | A (A)        | 4.2 (9.7)                       | A (A)        |
|     |  |                              | PM        | 4.7 (10.0)                      | A (A)        | 4.7 (10.0)                      | A (B)        | 4.6 (10.0)                      | A (B)        |
| 7   | Shattuck Avenue/54 <sup>th</sup> Street                      | SSSC                         | AM        | 0.8 (22.0)                      | A (C)        | 0.8 (21.4)                      | A (C)        | 0.8 (21.5)                      | A (C)        |
|     |  |                              | PM        | 0.7 (19.5)                      | A (C)        | 0.7 (19.5)                      | A (C)        | 0.7 (19.6)                      | A (C)        |
| 8   | Martin Luther King Jr. Way/<br>53 <sup>rd</sup> Street       | Signal                       | AM        | 4.9                             | A            | 5.1                             | A            | 5.1                             | A            |
|     |  |                              | PM        | 4.7                             | A            | 5.0                             | A            | 4.9                             | A            |
| 9   | Dover Street/53 <sup>rd</sup> Street                         | SSSC                         | AM        | 5.1 (10.2)                      | A (B)        | 5.3 (10.2)                      | A (B)        | 5.2 (10.2)                      | A (B)        |
|     |  |                              | PM        | 5.0 (9.9)                       | A (A)        | 5.5 (10.1)                      | A (B)        | 5.5 (10.1)                      | A (B)        |
| 10  | Martin Luther King Jr. Way/<br>52 <sup>nd</sup> Street       | Signal                       | AM        | 25.8                            | C            | 25.9                            | C            | 26.6                            | C            |
|     |  |                              | PM        | 26.0                            | C            | 26.0                            | C            | 30.8                            | C            |
| 11  | CHRCO Garage Driveways/<br>52 <sup>nd</sup> Street           | Signal                       | AM        | 13.4                            | B            | 13.6                            | B            | 13.7                            | B            |
|     |  |                              | PM        | 14.2                            | B            | 14.7                            | B            | 15.0                            | B            |
| 12  | Dover Street-Hospital<br>Driveway/52 <sup>nd</sup> Street    | SSSC                         | AM        | 2.0 (15.7)                      | A (C)        | 2.1 (15.9)                      | A (C)        | 3.2 (16.5)                      | A (C)        |
|     |  |                              | PM        | 2.0 (16.8)                      | A (C)        | 2.4 (16)                        | A (C)        | 4.4 (19.3)                      | A (C)        |
| 13  | SR 24 Ramps/52 <sup>nd</sup> Street                          | SSSC                         | AM        | 6.8 (19.9)                      | A (C)        | 6.8 (19.6)                      | A (C)        | 6.8 (20.1)                      | A (C)        |
|     |  |                              | PM        | <b>** (**)</b>                  | <b>F (F)</b> | <b>** (**)</b>                  | <b>F (F)</b> | <b>** (**)</b>                  | <b>F (F)</b> |
| 14  | Shattuck Avenue/52 <sup>nd</sup> Street                      | Signal                       | AM        | <b>63.4</b>                     | <b>E</b>     | 64.3                            | <b>E</b>     | 65.4                            | <b>E</b>     |
|     |  |                              | PM        | <b>60.9</b>                     | <b>E</b>     | 61.3                            | <b>E</b>     | 61.4                            | <b>E</b>     |
| 15* | Telegraph Avenue-Claremont<br>Avenue/52 <sup>nd</sup> Street | Signal                       | AM        | 21.0                            | C            | 20.9                            | C            | 21.1                            | C            |
|     |  |                              | PM        | 39.5                            | D            | 35.2                            | D            | 37.0                            | D            |
| 16* | Telegraph Avenue/51 <sup>st</sup> Street                     | Signal                       | AM        | 39.9                            | D            | 39.8                            | D            | 40.1                            | D            |
|     |  |                              | PM        | 70.8                            | E            | 68.4                            | E            | 70.1                            | E            |
| 17  | SR 24 Ramps/Martin Luther<br>King Jr. Way                    | Signal                       | AM        | 15.4                            | B            | 15.7                            | B            | 27.1                            | C            |
|     |  |                              | PM        | 46.2                            | D            | 46.4                            | D            | 48.3                            | D            |
| 18  | West Street/52 <sup>nd</sup> Street                          | AWSC                         | AM        | 9.1                             | A            | 9.1                             | A            | 9.1                             | A            |
|     |  |                              | PM        | 9.4                             | A            | 9.4                             | A            | 9.5                             | A            |
| 19  | Genoa Street/52 <sup>nd</sup> Street                         | AWSC                         | AM        | 8.4                             | A            | 8.4                             | A            | 8.4                             | A            |
|     |  |                              | PM        | 8.2                             | A            | 8.3                             | A            | 8.3                             | A            |
| 20  | Genoa Street/55 <sup>th</sup> Street                         | SSSC                         | AM        | 2.9 (25.6)                      | A (D)        | 2.9 (25.6)                      | A (D)        | 2.9 (25.6)                      | A (D)        |
|     |  |                              | PM        | 3.3 (25.9)                      | A (D)        | 3.3 (25.9)                      | A (D)        | 3.3 (25.9)                      | A (D)        |
| 21  | Martin Luther King Jr. Way/<br>Garage Driveway               | SSSC                         | AM        | N/A                             | N/A          | 0.1 (9.8)                       | A (A)        | 0.1 (9.9)                       | A (A)        |
|     |  |                              | PM        | N/A                             | N/A          | 0.3 (11.3)                      | A (B)        | 0.3 (11.6)                      | A (B)        |

<sup>a</sup> Signal = intersection is controlled by a traffic signal; AWSC = intersection is controlled by stop-signs on all approaches; SSSC = Intersection is controlled by a stop-sign on the side-street approach;

<sup>b</sup> For signalized intersections, average intersection delay and LOS based on the 2000 HCM method is shown. For side-street stop-controlled intersections, delays for worst movement and average intersection delay are shown: intersection average (worst movement)

\* Denotes an intersection located in Downtown or on an arterial providing access to Downtown where LOS E is the LOS standard. For all other intersections, not located in Downtown or on an arterial providing access to Downtown, LOS D is the LOS standard.

\*\* Delay cannot be estimated accurately because the Synchro software does not correctly account for the queues on eastbound 52<sup>nd</sup> Street at Shattuck Avenue blocking the off-ramp. Reported LOS is based on field observations.

Source: Fehr & Peers, 2014.

All study intersections would continue to operate at the same LOS, but would experience slightly more delay, as under 2035 No Project Conditions with the addition of Phase 1 project trips. All intersections, except the following, would continue to operate at an acceptable LOS:

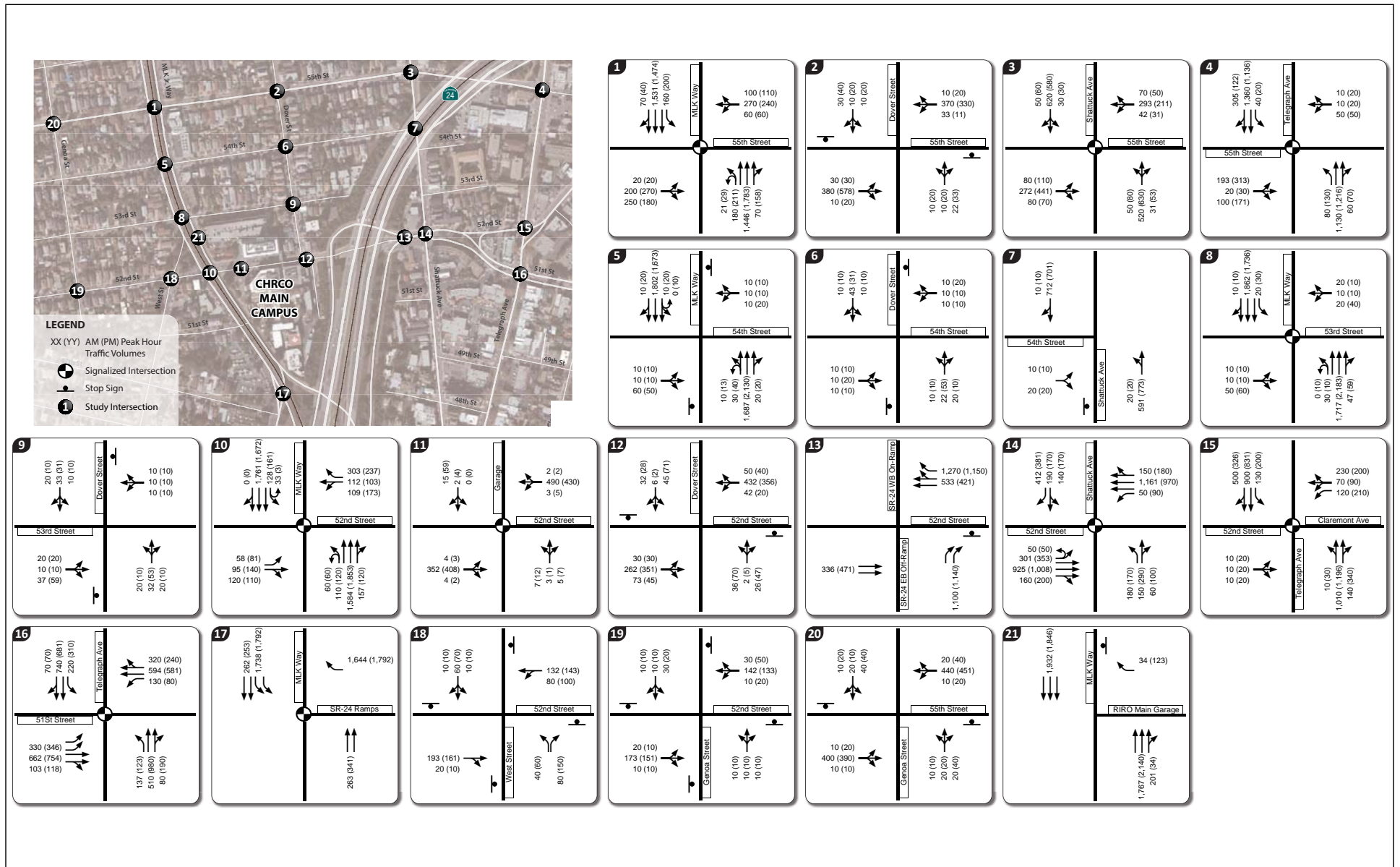
- The westbound stop-controlled approach at the Martin Luther King Jr. Way/54<sup>th</sup> Street intersection (#5) would operate at LOS E during both AM and PM peak hours. The Phase 1 project would add less than ten vehicles to the critical movement at this intersection (Significance Threshold #6). Therefore, Phase 1 of the project would not cause a significant impact on traffic operations at this intersection under 2035 Plus Phase 1 conditions.
- The northbound stop-controlled approach at the SR 24 Ramps/52<sup>nd</sup> Street intersection (#13) would continue to operate at LOS F during the PM peak hour. The Phase 1 project would add less than ten vehicles to the critical movement at this intersection (Significance Threshold #6). Therefore, Phase 1 of the project would not cause a significant impact on traffic operations at this intersection under 2035 Plus Phase 1 conditions.
- The signalized Shattuck Avenue/52<sup>nd</sup> Street intersection (#14) would continue to operate at LOS E during both AM and PM peak hours. The Phase 1 project would increase total intersection average vehicle delay by less than four seconds (Significance Threshold #3), and average delay for any of the critical movements by less than six seconds (Significance Threshold #4). Therefore, Phase 1 of the project would not cause a significant impact on traffic operations at this intersection under 2035 Plus Phase 1 conditions.

Phase 1 of the project would not cause a significant impact on traffic operations at the study intersections under 2035 Plus Phase 1 conditions.

**(6) 2035 Plus Phase 2 Conditions Intersection Analysis.** This section analyzes the transportation system with traffic generated by Phases 1 and 2 of the project added to the 2035 No Project traffic volumes. This analysis presents the extent of Phase 2 impacts relative to 2035 No Project conditions based on direct application of Significance Threshold #18 which references Significance Thresholds #1 through #6 as listed in section 6.a.

**Traffic Volumes.** Figure IV.D-23 shows the traffic volumes for the 2035 Plus Phase 2 Conditions. They include 2035 No Project traffic volumes plus net added traffic volumes generated by Phases 1 and 2 of the project.

**Roadway Network.** In addition to the roadway network changes under Phase 1 described above, Phase 2 of the project would modify the south approach of the Dover Street-Hospital Driveway/52<sup>nd</sup> Street intersection (#12) to provide access to the new main pick-up/drop off area and a new parking garage. In order to accommodate Class 2 bicycle lanes along project frontage on 52<sup>nd</sup> Street, the project would narrow eastbound 52<sup>nd</sup> Street between Martin Luther King Jr. Way and just east of the signalized Garage Driveway and westbound 52<sup>nd</sup> Street approach at the signalized Garage Driveway(intersection #11) to one lane. No other physical modifications to the study intersections are assumed for the 2035 Plus Phase 2 analysis. However, this analysis assumes that signal timing parameters that do not require upgrades to the signal equipment, such as amount of green time assigned to each intersection approach, would be optimized at the signalized study intersections.



LSA

FIGURE IV.D-23

NOT TO SCALE

SOURCE: FEHR & PEERS, MAY 2014.

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CHRCO Campus Master Plan Project EIR  
2035 Plus Phase 2 - Peak Hour Traffic Volumes,  
Lane Configurations, and Intersection Controls

**Intersection Operations Analysis.** Intersection LOS calculations were completed with the traffic volumes and roadway network described above. **Table IV.D-17** summarizes intersection operations under 2035 Plus Phase 2 conditions at the 21 study intersections. Appendix C provides the detailed LOS calculations.

All study intersections would continue to operate at the same LOS, but would experience slightly more delay, as under 2035 No Project and 2035 Plus Phase 1 Conditions with the addition of Phase 2 project trips. All intersections, except the following, would continue to operate at an acceptable LOS:

- The westbound stop-controlled approach at the Martin Luther King Jr. Way/54<sup>th</sup> Street intersection (#5) would operate at LOS E during both AM and PM peak hours. The Phase 2 project would add less than ten vehicles to the critical movement at this intersection (Significance Threshold #6). Therefore, Phase 2 of the project would not cause a significant impact on traffic operations at this intersection under 2035 Plus Phase 2 conditions.
- The northbound stop-controlled approach at the SR 24 Ramps/52<sup>nd</sup> Street intersection (#13) would continue to operate at LOS F during the PM peak hour. The Phase 2 project would add less than ten vehicles to the critical movement at this intersection (Significance Threshold #6). Therefore, Phase 2 of the project would not cause a significant impact on traffic operations at this intersection under 2035 Plus Phase 2 conditions.
- The signalized Shattuck Avenue/52<sup>nd</sup> Street intersection (#14) would continue to operate at LOS E during both AM and PM peak hours. The Phase 2 project would increase total intersection average vehicle delay by less than four seconds (Significance Threshold #3), and average delay for any of the critical movements by less than six seconds (Significance Threshold #4). Therefore, Phase 2 of the project would not cause a significant impact on traffic operations at this intersection under 2035 Plus Phase 2 conditions.

Phase 2 of the project would not cause a significant impact on traffic operations at the study intersections under 2035 Plus Phase 2 conditions.

**(7) Signalized Intersections Located Outside Downtown and not Providing Direct Access to Downtown Operating at LOS D or better without the Project.** According to Significance Threshold #1, a project would cause a significant impact at an intersection located outside the Downtown and that does not provide direct access to Downtown, if it causes an intersection operating at LOS D or better to degrade to LOS E or LOS F and cause the total intersection average delay to increase by four or more seconds. Eight of the study intersections evaluated in this document are signalized intersections that are located outside Downtown and do not provide direct access to Downtown. As summarized above in sections (1) through (6), neither Phase 1 nor Phase 2 of the project would result in a study intersection located outside the Downtown and that do not provide direct access to Downtown that operates at LOS D or better without the project to degrade to LOS E or LOS F. Therefore, the proposed project would not cause a significant impact based on application of Significance Threshold #1.

**(8) Signalized Intersections within Downtown or Providing Direct Access to Downtown Operating at LOS E or better without the Project.** According to Significance Threshold #2, a project would cause a significant impact at an intersection located within the Downtown or providing direct access to Downtown, if it causes an intersection operating at LOS E or better to degrade to LOS F and cause the total intersection average delay to increase by four or more seconds. None of the

study intersections are located in Downtown. Two of the study intersections, Telegraph Avenue-C Claremont Avenue/52<sup>nd</sup> Street, and Telegraph Avenue/51<sup>st</sup> Street intersections (#s 15 and 16) provide direct access to Downtown. As summarized above in sections (1) through (6), neither Phase 1 nor Phase 2 of the project would result in these two study intersection to operate at LOS F. Therefore, the proposed project would not cause a significant impact based on application of Significance Threshold #2.

**(9) Signalized Intersections Located Outside Downtown and not Providing Direct Access to Downtown Operating at LOS E without the Project.** According to Significance Threshold #3, a project would cause a significant impact at an intersection located outside the Downtown and that does not provide direct access to Downtown, if it would cause the total intersection average delay to increase by four or more seconds at an intersection that operates at LOS E without the project. Eight of the study intersections evaluated in this document are signalized intersections that are located outside Downtown and do not provide direct access to Downtown. As summarized above in sections (1) through (6), the 52<sup>nd</sup> Street/Shattuck Avenue intersection during both AM and PM peak hours under 2035 conditions is the only intersection located outside the Downtown and that does not provide direct access to Downtown that would operate at LOS E. However, neither Phase 1 nor Phase 2 of the project would cause the total intersection average delay to increase by four or more seconds at this intersection. Therefore, the proposed project would not cause a significant impact based on application of Significance Threshold #3.

**(10) Signalized Intersections Located Outside Downtown and not Providing Direct Access to Downtown Operating at LOS E without the Project.** According to Significance Threshold #4, a project would cause a significant impact at an intersection located outside the Downtown and that does not provide direct access to Downtown, if it would cause the average delay for any of the critical movements to increase by six or more seconds at an intersection that operates at LOS E without the project. Eight of the study intersections evaluated in this document are signalized intersections that are located outside Downtown and do not provide direct access to Downtown. As summarized above in sections (1) through (6), the 52<sup>nd</sup> Street/Shattuck Avenue intersection during both AM and PM peak hours under 2035 conditions is the only intersection located outside the Downtown and that does not provide direct access to Downtown that would operate at LOS E. However, neither Phase 1 nor Phase 2 of the project would cause the average delay for any of the critical movements at this intersection to increase by six or more seconds. Therefore, the proposed project would not cause a significant impact based on application of Significance Threshold #4.

**(11) Signalized Intersections in all Areas Operating at LOS F Regardless of the Project.** According to Significance Threshold #5, a project would cause a significant impact at an intersection located in any area, if it would cause the overall volume-to-capacity (v/c) ratio to increase 0.03 or more, or cause the critical movement v/c ratio to increase 0.05 or more. As summarized above in sections (1) through (6), neither Phase 1 nor Phase 2 of the project would result in any of the ten signalized study intersections to operate at LOS F. Therefore, the proposed project would not cause a significant impact based on application of Significance Threshold #5.

**(12) Unsignalized Intersections.** According to Significance Threshold #6, a project would cause a significant impact at an unsignalized intersection if it would add ten or vehicles to the critical movement and after project completion satisfy the California Manual on Uniform Traffic Control Devices (CA MUTCD) peak hour volume traffic signal warrant. Ten of the study intersections evaluated in this document are unsignalized intersections. As summarized above in sections (1) through



(6), neither Phase 1 nor Phase 2 of the project would add ten or more vehicles to a critical movement of an unsignalized study intersection that would satisfy the CA MUTCD peak hour volume traffic signal warrant after project completion. Therefore, the proposed project would not cause a significant impact based on application of Significance Threshold #6.

**(13) Required Congestion Management Program (CMP) Evaluation.** The CMP evaluation is based on application of Significance Thresholds #7 and #8. The Alameda County Congestion Management Program (CMP) requires the assessment of development-driven impacts to regional roadways. Because the proposed CHRCO project would generate more than 100 “net new” PM peak-hour trips, ACTC requires the use of the Countywide Travel Demand Forecasting Model to assess the impacts on regional roadways near the project site. The CMP and Metropolitan Transportation System (MTS) roadways in the project vicinity identified in the NOP comments by ACTC (August 27, 2013 letter) include SR 24, I 580, I 980, Martin Luther King Jr. Way, Shattuck Avenue, Telegraph Avenue, Stanford Avenue, Adeline Street, Claremont Avenue, and 51<sup>st</sup> Street.<sup>14</sup>

The ACTC Model used in this study is a regional travel demand model that uses socio-economic data and roadway and transit network assumptions to forecast traffic volumes and transit ridership using a four-step modeling process that includes trip generation, trip distribution, mode split, and trip assignment. This process accounts for changes in travel patterns due to future growth and balances trip productions and attractions. This version of the Countywide Model is based on Association of Bay Area Governments (ABAG) Projections 2009 land uses for 2020 and 2035.

For the purposes of this CMP and MTS Analysis, the proposed CHRCO project is assumed not to be included in the ACTC Model to present a more conservative analysis. The traffic forecasts for the 2020 and 2035 scenarios were extracted from the ACTC Model for the CMP and MTS roadway segments from that model and used as the “No Project” forecasts. Vehicle trips generated by the Phases 1 and 2 of the CHRCO project were added to the “No Project” forecasts to estimate the “Plus Phase 1 Project” and “Plus Phase 2 Project” forecasts.<sup>15</sup>

The CMP and MTS segments were assessed using a v/c ratio methodology. For freeway segments, a per-lane capacity of 2,000 vehicles per hour (vph) was used, consistent with the latest CMP documents. For surface streets, a per-lane capacity of 800 vph was used. Roadway segments with a v/c ratio greater than 1.00 signify LOS F.

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<sup>14</sup> The roadway segments included in this evaluation are not based on an assessment of the project trip distribution or application of screening criteria to determine if the project would contribute enough new trips to warrant analysis.

<sup>15</sup> Due to differences in the land use assumptions and differences in analysis methodologies, the forecasted traffic volumes on the roadway links can be different from the intersection volumes, particularly at the local level. The first area of difference is the land use data sets employed for the intersection forecasts and the MTS forecasts. The intersection forecasts, which are used to assess project traffic impacts on City of Oakland intersections, are based on land use data adjusted to reflect all past, present, existing, approved, pending and reasonably foreseeable projects in the City of Oakland, which differs from the data in the ACTC Model. The second area of difference is the use of the Furness process. The intersection forecasts use the output of the ACTC Model as an input to develop intersection volumes in conjunction with existing traffic counts. The CMP and MTS roadway analysis is based on the outputs of the ACTC Model directly on a roadway segment level. It is not unusual to have discrepancies given that the two analyses measure impacts at a different scale. For local streets, intersections are typically a more accurate measure of operating conditions because the capacity of an urban street, defined as the number of vehicles that can pass through its intersections, is controlled by the capacity at its intersections.

The “Plus Project” results were compared to the baseline results for the 2020 and 2035 horizon years. Appendix C provides the 2020 and 2035 peak hour volumes, v/c ratios and the corresponding levels of service for No Project, Plus Phase 1, and Plus Phase 2 conditions.

Phases 1 and 2 of the CHRCO project would contribute to 2020 and 2035 increases in traffic congestion on MTS roadways. However, the CHRCO project would not cause a roadway segment on the MTS to degrade from LOS E or better to LOS F. The CHRCO project also would not increase the v/c ratio by more than 3 percent for roadway segments that would operate at LOS F without the project.

This is a less-than-significant impact, and as a result no mitigation measures are required.

**(14) Transit Travel Time.** The discussion of transit travel time is based on application of Significance Threshold #9. In general, the City of Oakland has not established a numerical threshold for “substantially increased travel times” due to several factors:

- First, bus service, in general, is extremely transitory, and can change quite frequently, as is the case with AC Transit’s bus network. Existing routes may be eliminated, or new routes may be put in service by the time Phase 1 or 2 of the CHRCO project is completed. Similar to parking, transit service is not part of the physical environment, and can change over time in response to external factors. In fact, AC Transit has generally reduced its bus service over the past few years in response to budget issues.
- Second, any numerical threshold to determine the significance of increased travel times needs to consider additional characteristics of the bus service, including its headway (the amount of time between scheduled trips) and total travel time. Considering the transitory nature of bus service, establishing such thresholds is not reasonable, as service can be rerouted, eliminated, or created at any time. Consideration would also have to be given to different types of transit service (e.g., trunk service, Transbay service, local service, and community service), as they generally operate with different characteristics.
- Third, unlike the situation for intersections or roadway facilities, there are no well-established methodologies for characterizing the operations of transit service in relation to travel times. For intersections, clear distinctions are made between intersections that operate at acceptable conditions (e.g., LOS D or better) and those that operate at unacceptable conditions (e.g., LOS E or LOS F), and separate impact thresholds are provided. For bus service, however, there is no well-established LOS equivalent for characterizing transit service in relation to travel times.

However to the extent feasible, this section provides a qualitative analysis of how Phases 1 and 2 of CHRCO would affect transit travel times for local bus routes. **Table IV.D-18** summarizes travel times for the bus routes in the project vicinity under Existing conditions and **Table IV.D-19** summarizes travel times under 2020 conditions.<sup>16</sup>

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<sup>16</sup> This EIR does not evaluate bus travel times under 2035 conditions because bus travel times are affected by a variety of factors that can change in the long-term, such as route changes or bus frequencies, which cannot be known at this time. Thus, the results would not be very accurate or meaningful.

**Table IV.D-18: Bus Travel Times (Existing Conditions)**

| Bus Route/Direction   | Peak Hour | Existing                           |                     | Existing Plus Phase 1              |                     | Existing Plus Phase 2              |                     |
|---|-----------|------------------------------------|---------------------|------------------------------------|---------------------|------------------------------------|---------------------|
|   |           | Travel Time (Min:Sec) <sup>a</sup> | Average Speed (mph) | Travel Time (Min:Sec) <sup>a</sup> | Average Speed (mph) | Travel Time (Min:Sec) <sup>a</sup> | Average Speed (mph) |
| Route 1/1R Northbound<br>(from Telegraph Ave. at 51 <sup>st</sup> St. to 55 <sup>th</sup> St.)                            | AM        | 1:20                               | 11                  | 1:20                               | 11                  | 1:20                               | 11                  |
|   | PM        | 1:30                               | 10                  | 1:30                               | 10                  | 1:30                               | 10                  |
| Route 1/1R Southbound<br>(from Telegraph Ave. at 55 <sup>th</sup> St. to 51 <sup>st</sup> St.)                            | AM        | 1:10                               | 12                  | 1:10                               | 12                  | 1:10                               | 12                  |
|   | PM        | 1:10                               | 12                  | 1:10                               | 12                  | 1:20                               | 12                  |
| Route 12 Eastbound<br>(from Martin Luther King Jr. Way at 55 <sup>th</sup> St. to 51 <sup>st</sup> St. at Telegraph Ave.) | AM        | 3:20                               | 12                  | 3:20                               | 12                  | 3:20                               | 12                  |
|   | PM        | 3:20                               | 12                  | 3:30                               | 11                  | 3:30                               | 11                  |
| Route 12 Westbound<br>(from 51 <sup>st</sup> St. at Telegraph Ave. to Martin Luther King Jr. Way at 55 <sup>th</sup> St.) | AM        | 4:00                               | 10                  | 4:00                               | 10                  | 4:00                               | 10                  |
|   | PM        | 6:00                               | 6                   | 6:10                               | 6                   | 6:10                               | 6                   |
| Route 18 Northbound<br>(from Martin Luther King Jr. Way at SR 24 Ramps to Shattuck Ave. at 55 <sup>th</sup> St.)          | AM        | 2:30                               | 16                  | 2:30                               | 16                  | 2:30                               | 16                  |
|   | PM        | 2:40                               | 15                  | 2:40                               | 15                  | 2:50                               | 15                  |
| Route 18 Southbound<br>(from Shattuck Ave. at 55 <sup>th</sup> St. to Martin Luther King Jr. Way at SR 24 Ramps)          | AM        | 2:30                               | 16                  | 2:30                               | 16                  | 2:30                               | 16                  |
|   | PM        | 2:20                               | 17                  | 2:20                               | 17                  | 2:30                               | 17                  |

<sup>a</sup> Corridor travel times calculated using intersection delay and free-flow segment speeds from Synchro 8.0

Source: Fehr & Peers, 2014.

The traffic generated by either Phase 1 or Phase 2 of the project would slightly increase congestion along these bus routes. Based on the intersection operations analysis presented in previous sections by comparing travel times under No Project and Plus Project conditions, the additional traffic generated by either Phase 1 or Phase 2 of the project would increase peak hour travel times along these corridors by less than ten seconds. The resulting increases would not be noticeable to most bus riders and would have a minor effect on transit service within the area as the estimated increase is within the variability in travel time experienced by each bus on these corridors. This is a less than significant impact, and no mitigation measures are required.

**Table IV.D-19: Bus Travel Times (2020 Conditions)**

| Bus Route/Direction   | Peak Hour | Existing                           |                     | Existing Plus Phase 1              |                     | Existing Plus Phase 2              |                     |
|---|-----------|------------------------------------|---------------------|------------------------------------|---------------------|------------------------------------|---------------------|
|   |           | Travel Time (Min:Sec) <sup>a</sup> | Average Speed (mph) | Travel Time (Min:Sec) <sup>a</sup> | Average Speed (mph) | Travel Time (Min:Sec) <sup>a</sup> | Average Speed (mph) |
| Route 1/1R Northbound<br>(from Telegraph Ave. at 51 <sup>st</sup> St. to 55 <sup>th</sup> St.)                            | AM        | 1:30                               | 10                  | 1:30                               | 10                  | 1:30                               | 10                  |
|   | PM        | 1:40                               | 9                   | 1:40                               | 9                   | 1:40                               | 9                   |
| Route 1/1R Southbound<br>(from Telegraph Ave. at 55 <sup>th</sup> St. to 51 <sup>st</sup> St.)                            | AM        | 1:20                               | 11                  | 1:20                               | 12                  | 1:20                               | 12                  |
|   | PM        | 1:20                               | 11                  | 1:20                               | 11                  | 1:20                               | 11                  |
| Route 12 Eastbound<br>(from Martin Luther King Jr. Way at 55 <sup>th</sup> St. to 51 <sup>st</sup> St. at Telegraph Ave.) | AM        | 3:40                               | 11                  | 3:40                               | 11                  | 3:40                               | 11                  |
|   | PM        | 4:00                               | 10                  | 4:00                               | 10                  | 4:00                               | 10                  |
| Route 12 Westbound<br>(from 51 <sup>st</sup> St. at Telegraph Ave. to Martin Luther King Jr. Way at 55 <sup>th</sup> St.) | AM        | 4:40                               | 8                   | 4:40                               | 8                   | 4:40                               | 8                   |
|   | PM        | 6:50                               | 6                   | 7:00                               | 6                   | 7:00                               | 6                   |
| Route 18 Northbound<br>(from Martin Luther King Jr. Way at SR 24 Ramps to Shattuck Ave. at 55 <sup>th</sup> St.)          | AM        | 2:40                               | 15                  | 2:40                               | 15                  | 2:40                               | 15                  |
|   | PM        | 2:50                               | 14                  | 3:00                               | 13                  | 3:10                               | 13                  |
| Route 18 Southbound<br>(from Shattuck Ave. at 55 <sup>th</sup> St. to Martin Luther King Jr. Way at SR 24 Ramps)          | AM        | 2:40                               | 15                  | 2:40                               | 15                  | 2:40                               | 15                  |
|   | PM        | 2:40                               | 16                  | 2:40                               | 16                  | 2:40                               | 16                  |

<sup>a</sup> Corridor travel times calculated using intersection delay and free-flow segment speeds from Synchro 8.0

Source: Fehr &amp; Peers, 2014.

**(15) Vehicle, Pedestrian, and Bicycle Safety.** The discussion of vehicle, pedestrian, and bicycle safety is based on application of Significance Thresholds #10 through #14. Both Phase 1 and Phase 2 of the project would result in increased vehicular traffic and pedestrian and bicycle activity in and around the project area. In addition, both Phases 1 and 2 of the project propose changes to the public right-of-way and changes to access and circulation for different travel modes. These changes are discussed below:

- Phase 1:
  - OPC-2 would provide a 15-space parking for the Emergency Department at the ground level with vehicular access on 52<sup>nd</sup> Street at the existing signalized driveway east of Martin Luther King Jr. Way. Left-turns out of this driveway would be prohibited.
  - The existing Main Garage would be modified to relocate the existing main driveway on 52<sup>nd</sup> Street with a right-in/right-out only driveway on Martin Luther King Jr. Way. The project also proposes to provide a 40-foot right-turn lane on northbound Martin Luther King Jr. Way to provide deceleration/queuing space for vehicles entering the garage. The driveway would provide three gates: one inbound, one outbound, and a center one that can serve as inbound or outbound based on demand. An additional driveway would provide vehicular access between the Main Garage and the OPC-2 Garage (Emergency Department parking). This driveway, which would be controlled by one gate, would primarily provide outbound access from the Main Garage to 52<sup>nd</sup> Street. Motorists exiting the garage through this driveway would only be able to turn right onto

westbound 52<sup>nd</sup> Street, because left-turns out of the driveway on 52<sup>nd</sup> Street would be prohibited.

- The sidewalk adjacent to OPC-2 and the Main Garage would be 6 feet wide with 10 to 15 feet of landscaping between the sidewalk and the edge of the building.
- Phase 2:
  - The existing internal driveway south of 52<sup>nd</sup> Street, just east of Dover Street, would be extended and become the main entrance for the hospital and would provide access to the new main pick-up/drop off area and a new 334-space parking garage.
  - The right-of-way between CHRCO campus and SR 24 from the off-ramp on Martin Luther King Jr. Way to 53<sup>rd</sup> Street would be acquired from Caltrans to accommodate the construction of the Clinical Support Building and the Parking Garage during Phase 2, and to provide a 10-foot pedestrian path between 52<sup>nd</sup> and 53<sup>rd</sup> Streets adjacent to the SR 24 freeway.
  - 52<sup>nd</sup> Street would be reconfigured to provide one through travel lane and a Class 2 bicycle lane in each direction between Martin Luther King Jr. Way and Dover Street. The modifications on 52<sup>nd</sup> Street would also include bulbouts on the northeast and southeast corners of the Garage Driveway/52<sup>nd</sup> Street intersection, removal of the existing left-turn lane on eastbound 52<sup>nd</sup> Street at the Garage Driveway/52<sup>nd</sup> Street intersection, elimination of the median on 52<sup>nd</sup> Street between Martin Luther King Jr. Way and Garage Driveway, net addition of on-street parking spaces on both sides of 52<sup>nd</sup> Street between the signalized Garage Driveway and Dover Street, widening of 52<sup>nd</sup> Street by four feet along the two existing residential buildings on the north side of the street just west of Dover Street, narrowing of the sidewalk on the south side of the street just west of Dover Street to 5.5 feet.

Effects of the above described changes as well as access and circulation for different travel modes are discussed in subsequent sections.

**(16) Transportation Hazards.** The discussion of transportation hazards is based on application of Significance Threshold #10. The final detailed design for the project would be reviewed during the City's Design Review Process to ensure consistency with applicable design standards, such as adequate sight distance for pedestrians and vehicles at project driveways. The final design for the CHRCO would minimize potential conflicts between various modes and provide safe and efficient pedestrian, bicycle, and vehicle circulation within the project buildings and parking facilities and between the project and the surrounding circulation systems. Based on the project's conceptual site plan, the project is not expected to result in significant impact related to transportation hazards as discussed below for various features of both Phase 1 and Phase 2 of the project.

**Phase 1 Impacts.** Phase 1 of the CHRCO project would relocate the main driveway for the existing Main Garage to Martin Luther King Jr. Way between 52<sup>nd</sup> and 53<sup>rd</sup> Streets. The proposed driveway would be right-in/right-out only. The existing Main Garage driveway on 52<sup>nd</sup> Street would continue to serve the Main Garage as outbound access only. Motorists could exit through a gate connecting the Main Garage to the OPC-2 parking and turn right onto westbound 52<sup>nd</sup> Street at the existing signalized driveway.

Thus, motorist approaching the garage from the north would need to make a U-turn at the Martin Luther King Jr. Way/52<sup>nd</sup> Street intersection in order to access the garage through the protected left-turn lane at the intersection.

Most motorists leaving the garage for destinations to the south and west would exit through the driveway connecting to OPC-2 parking and turn-right onto westbound 52<sup>nd</sup> Street. However, some motorists would leave the garage through the relocated main driveway on Martin Luther King Jr. Way. Considering that the proposed driveway on Martin Luther King Jr. Way would be less than 80 feet south of 53<sup>rd</sup> Street, it is unlikely that motorists leaving the garage for destinations to the south and east would be able to merge through three traffic lanes on Martin Luther King Jr. Way, especially during peak congestion periods, to make a U-turn at 53<sup>rd</sup> Street. These motorists leaving the garage for destinations to the south and east have several route options after turning right on northbound Martin Luther King Jr. Way:

- Travel north on Martin Luther King Jr. Way and make a U-turn at the unsignalized Martin Luther King Jr. Way/54<sup>th</sup> Street intersection, where the U-turn would be from a shared left-turn/through lane.
- Travel north on Martin Luther King Jr. Way and make a U-turn at the signalized Martin Luther King Jr. Way/55<sup>th</sup> Street intersection, where the U-turn would be from a protected left-turn lane. Thus, vehicles on northbound Martin Luther King Jr. Way waiting for an acceptable gap in the opposing traffic in order to make a U-turn may result in queues or safety concerns at this location.
- Turn right on 53<sup>rd</sup> Street and use Dover Street to access 52<sup>nd</sup> Street.
- Motorists leaving the garage for eastbound SR 24 or north on Telegraph Avenue would most likely travel north on Martin Luther King Jr. Way and turn right on 55<sup>th</sup> Street to access Telegraph Avenue and the eastbound SR 24 on-ramp.

The proposed driveway on Martin Luther King Jr. Way would provide three gates: one inbound, one outbound, and one changeable lane depending on the expected volume. Each gate provides about 60 feet (corresponding to about three passenger vehicles) of vehicle queuing space before queues spill back into Martin Luther King Jr. Way or interfere with internal garage operations. Garage gate operations during typical peak congestion periods are described below:

- During the AM peak period, it is expected that two gates would be inbound and one would be outbound. It is estimated that about 200 vehicles would enter the garage and about 40 vehicles would exit the garage during the AM peak hour. The 95<sup>th</sup> percentile queues for both inbound and outbound lanes are estimated to be about three vehicles per lane, which can be accommodated within the queuing space provided.
- During the PM peak period, it is expected that one gate would be inbound and two would be outbound. It is estimated that about 30 vehicles would enter the garage and about 180<sup>17</sup> vehicles would exit the garage during the PM peak hour. The 95<sup>th</sup> percentile queues is estimated to be about two vehicles for the inbound lane and three vehicles per lane for the outbound lanes, which can be accommodated within the queuing space provided.

<sup>17</sup> To present a worst-case scenario, this estimate assumes that all existing vehicles would use the Martin Luther King Jr. Way driveway and the 52<sup>nd</sup> Street driveway would not be available to exiting traffic.

The proposed driveway connecting to OPC-2 parking would provide one outbound gate. This gate provides about 20 feet (corresponding to about one passenger vehicle) of vehicle queuing space before queues interfere with internal garage operations. Usage at this driveway is expected to peak during the PM peak hour, when about 60 vehicles would use the driveway. The 95<sup>th</sup> percentile queue is estimated to be about two vehicles, which cannot be accommodated within the queuing space provided.

The above estimated queues only account for operations at the garage gate. Considering the current level of congestion on Martin Luther King Jr. Way, it is expected that outbound motorists may experience longer queues as they may need to wait for available gaps in traffic flow on northbound Martin Luther King Jr. Way. Thus, outbound queues may be longer than estimated above.

Outbound motorists at both the proposed driveway on Martin Luther King Jr. Way and redesigned driveway on 52<sup>nd</sup> Street would have adequate sight distance of pedestrians on the sidewalk adjacent to the Garage and vehicles traveling on northbound Martin Luther King Jr. Way.

While not required to address a CEQA impact, the following recommendation would improve safety and access for motorists along Martin Luther King Jr. Way.

**Recommendation TRA-1: As part of relocating the Main Garage driveway to Martin Luther King Jr. Way in Phase 1 of the CHRCO project, coordinate with City of Oakland to implement the following:**

- Relocate the gate between the Main Garage and OPC-2 about 20 feet to the south to provide about 40 feet (corresponding to about two passenger vehicle) queuing space for vehicles exiting the Main Garage to 52<sup>nd</sup> Street.
- Two months after the relocation of the Main Garage driveway, conduct field observations and evaluate the safety and operations of U-turns at on northbound Martin Luther King Jr. Way at 54<sup>th</sup> Street (intersection #5). If excessive queuing is observed, consider either providing a 100-foot left-turn lane on northbound Martin Luther King Jr. Way at 54<sup>th</sup> Street (intersection #5) or prohibiting U-turns and left-turns at this location. If a new left-turn lane is provided at this location, the median on Martin Luther King Jr. Way should also be modified to provide a median nose to improve pedestrian safety.
- Provide signage at the proposed Garage exit on Martin Luther King Jr. Way to direct motorists traveling south to make U-turns at 54<sup>th</sup> and/or 55<sup>th</sup> Streets.

The environmental consequences of Recommendation TRA-1 have been evaluated. The recommended left-turn lane on northbound Martin Luther King Jr. Way can be accommodated within the existing median. The recommended median nose extension at this location would also improve safety for pedestrians crossing Martin Luther King Jr. Way at this unsignalized crossing. This and other study intersections would continue to operate at acceptable LOS if a new left-turn lane is implemented or if left-turns are prohibited at this location. Implementation of Recommendation TRA-1 would not result in any significant CEQA impacts.

**Phase 2 Impacts.** Phase 2 of the CHRCO project would expand the existing driveway on 52<sup>nd</sup> Street just east of Dover Street to serve as the main vehicular access for pick-ups/drop offs and a new 334 space parking garage. The driveway currently serves the 48-space South Lot and is used by up to



about 25 vehicles per hour during the peak hours. After completion of the Phase 2, up to 190 vehicles per hour are estimated to use this driveway.

The Dover Street and CHRCO approaches at this intersection on 52<sup>nd</sup> Street (intersection #12) are offset by about 50 feet and both approaches are controlled by stop signs, while the 52<sup>nd</sup> Street approaches are not controlled. Both the Dover Street and CHRCO approaches at the intersection provide adequate sight distance of pedestrians on the sidewalks and vehicles traveling in both directions of 52<sup>nd</sup> Street. It is expected that Phase 1 would increase traffic to the Dover Street approach of the intersection due to vehicles diversion caused by relocating the Main Garage driveway to Martin Luther King Jr. Way and Phase 2 would increase traffic on the CHRCO approach of the intersection due to the new pick-up/drop off area and the new parking garage. As shown in **Tables IV.D-15 through IV.D-17**, the stop-controlled approaches at the Dover Street-Hospital Driveway/52<sup>nd</sup> Street intersection (#12) would continue to operate at LOS C or better after completion of Phase 2 of the project. However, the additional automobile traffic and pedestrian activity at this offset intersection may increase the potential for safety conflicts at the intersection.

While not required to address a CEQA impact, the following recommendation would improve safety and access for at the Dover Street-Hospital Driveway/52<sup>nd</sup> Street intersection.

**Recommendation TRA-2: As part of Phase 2 of the CHRCO project, coordinate with City of Oakland to implement the following in order to improve safety at the Dover Street-Hospital Driveway/52<sup>nd</sup> Street intersection (#12):**

- Provide marked crosswalks with directional curb ramps on all four approaches of intersection.
- Two months after the main hospital and the new garage have been issued a Certificate of Occupancy, conduct field observations to evaluate traffic volumes using Dover Street to access the main hospital, and pedestrian activity crossing 52<sup>nd</sup> Street at Dover Street. If either of the following two conditions are satisfied: 1) the average vehicle delay for either Dover Street or Hospital Driveway intersection approach exceeds 35 seconds per vehicle (approach level of service degrades to LOS E) or 2) safety challenges for vehicles and/or pedestrians are observed due to the offset intersection, lack of left-turn pockets or other reasons, consider one of the following options to reduce traffic volumes at the intersection:
  - Close Dover Street to automobile traffic just south of 53<sup>rd</sup> Street, which would convert Dover Street between 52<sup>nd</sup> and 53<sup>rd</sup> Streets to a cul-de-sac; or
  - Prohibit left-turns from southbound Dover Street to eastbound 52<sup>nd</sup> Street and/or, except for hospital delivery vehicles, prohibit left-turns from eastbound 52<sup>nd</sup> Street to northbound Dover Street during peak congestion periods.

The environmental consequences of Recommendation TRA-2 have been evaluated. The Alternatives Chapter of this document analyzes the environmental consequences of closing Dover Street. Closure of Dover Street would not result in a significant CEQA impact. Prohibiting left-turns from southbound Dover Street to eastbound 52<sup>nd</sup> Street and/or left-turns from eastbound 52<sup>nd</sup> Street to northbound Dover Street would have similar affects as closing Dover Street. Implementation of Recommendation TRA-2 would not result in any significant CEQA impacts.

In addition to the above listed improvements, relocating the existing southbound Dover Street approach to the east so that it would align with the Hospital Driveway was also considered. This reconfiguration would have removed the current off-set across 52<sup>nd</sup> Street. However, the reconfiguration is currently not feasible due to the proposed construction of the Clinical Support Building at the northeast corner of the intersection. A potential reconfiguration of Dover Street would require constructing a taller Clinical Support Building.

**(17) Pedestrian Safety.** The discussion of pedestrian safety is based on application of Significance Threshold #11. The CHRCO project proposes several physical changes to the pedestrian environment. These features and their potential effect on pedestrian safety are discussed below.

**Phase 1 Impacts.** Phase 1 of the CHRCO project would include construction of OPC-2 at the northeast corner of the Martin Luther King Jr. Way/52<sup>nd</sup> Street intersection. Pedestrian access to OPC-2 would be provided through entrances on Martin Luther King Jr. Way and 52<sup>nd</sup> Street just north of the existing signalized crossing on 52<sup>nd</sup> Street.

Phase 1 of the project would relocate the main access for the existing Main Garage driveway on Martin Luther King Jr. Way and provide inbound and outbound vehicular access to a new Emergency Department parking facility and outbound only access for the existing Main Garage at the existing signalized driveway on 52<sup>nd</sup> Street east of Martin Luther King Jr. Way. The project would also prohibit left-turns out of the signalized driveway on 52<sup>nd</sup> Street. Both driveways would provide adequate sight distance between outbound vehicles and pedestrians on the adjacent sidewalks.

After completion of the Phase 1 project, the Main Garage would continue to serve as the primary parking facility for both employees and patients/visitors of OPC-1, OPC-2, and the Hospital. The existing signalized crossing on 52<sup>nd</sup> Street east of Martin Luther King Jr. Way (intersection #11) would continue to serve as the primary pedestrian connection between the Hospital south 52<sup>nd</sup> Street and the Main Garage, OPC-1 and OPC-2 north of 52<sup>nd</sup> Street. Although vehicular traffic at the existing Main Garage driveway at this intersection would decrease, the existing signalized crossing should continue to provide protected pedestrian crossings across 52<sup>nd</sup> Street. In addition, the decrease in vehicular traffic at this driveway, especially elimination of the left-turning vehicles out of the driveway, would reduce potential conflicts between motorists and pedestrians at this intersection.

Phase 1 of the project proposes 6-foot wide through pedestrian zones (i.e., the paved part of the sidewalk usable by pedestrians) and at least 10 feet of landscaping on sidewalks along both 52<sup>nd</sup> Street and Martin Luther King Jr. Way frontages of OPC-2 and the existing Main Garage. The proposed sidewalk on 52<sup>nd</sup> Street would be consistent with City of Oakland's *Pedestrian Master Plan* (PMP), which designates 52<sup>nd</sup> Street as a Neighborhood Route and requires a five-foot wide through pedestrian zone. The proposed sidewalk on Martin Luther King Jr. Way would not be consistent with the PMP, which designates Martin Luther King Jr. Way as a City Route, and requires an 8-foot wide through pedestrian zone.

While not required to address a CEQA impact, the following recommendation would ensure consistency with the City's PMP.

**Recommendation TRA-3: Widen the through pedestrian zone to a minimum of 8-feet on the sidewalk along Martin Luther King Jr. Way fronting OPC-2 and Main Garage to be consistent with the City of Oakland's Pedestrian Master Plan.**

The environmental consequences of Recommendation TRA-3 have been evaluated. Widening of the sidewalk along project frontage on Martin Luther King Jr. Way would reduce the amount of proposed landscaping but can be accommodated with the current right-of-way. Implementation of Recommendation TRA-3 would not result in any significant CEQA impacts.

**Phase 2 Impacts.** Pedestrian access to the Hospital would continue to be provided on 52<sup>nd</sup> Street and Martin Luther King Jr. Way after completion of Phase 2. The expanded project driveway on 52<sup>nd</sup> Street just east of Dover Street would have sidewalks on both sides of the driveway, providing pedestrian connections between 52<sup>nd</sup> Street and the proposed garage and the main entrance for the hospital.

Phase 2 of the CHRCO project would include a new major parking structure south of 52<sup>nd</sup> Street. As a result, many hospital employees and patient/visitors would park closer to the hospital and would not need to cross 52<sup>nd</sup> Street to travel between the existing Main Garage and the Hospital. However, the existing signalized crossing on 52<sup>nd</sup> Street should continue to be maintained because some hospital employees and patient/visitors would continue to use the existing Main Garage. The signal also provides protected pedestrian crossing between the Hospital and existing OPC-1 and proposed OPC-2. In addition, Recommendation TRA-4 (see below) would provide bulbouts on both side of this crossing and reduce the crossing distance.

Recommendation TRA-4 includes additional improvements along 52<sup>nd</sup> Street that would improve pedestrian safety and comfort. These include provision for a median refuge, pedestrian push-buttons, and directional curb ramps at the crossings across Martin Luther King Jr. Way (intersection #10) and potential pedestrian-scale lighting along 52<sup>nd</sup> Street. Recommendation TRA-2 would provide crosswalks at the Dover Street-Hospital Driveway/52<sup>nd</sup> Street intersection (#12).

Phase 2 of the CHRCO project would also include a 10-foot wide path between 52<sup>nd</sup> and 53<sup>rd</sup> Streets within the right-of-way acquired from Caltrans. Since the path would only be one block long and not connect to a specific destination, minimal usage is expected. The proposed path would connect with 52<sup>nd</sup> Street about 40 feet east of the Hospital driveway. Considering that few pedestrians would use this path, minimal mid-block pedestrian crossings are expected.

Phase 2 of the proposed CHRCO project would not result in permanent substantial decrease in pedestrian safety. This is a less than significant impact, and no mitigation measures are required.

**(18) Bicyclist Safety.** The discussion of bicyclist safety is based on application of Significance Threshold #12. The CHRCO project proposes several physical changes to the bicycle infrastructure surrounding the site. These changes and their effect on bicycle safety are discussed below.

The project site plan (see Figure III-9) identifies bicycle parking in the southwest corner of the existing Main Garage as part of Phase 1 of the project. However, the site plan does not identify the amount or type (short-term or long-term) of bicycle parking. The site plan also does not identify the location, type, or amount of bicycle parking as part of Phase 2 of the project. It is expected that they will be identified as the site plan is refined. See the bicycle parking discussion later in this section regarding the amount and type of bicycle parking required at the end of each phase of the project. It is anticipated that long-term bicycle parking would be provided in the ground level of the existing and

proposed garage, and short-term bicycle parking would be provided near the entrance to major CHRCO buildings. Thus, majority of cyclists would use 52<sup>nd</sup> Street to access the site.

The project would generate additional bicycle activity in the surrounding areas. Although a number of designated bikeways are provided within a quarter-mile of the project site (bicycle lanes on Shattuck Avenue, West Street, Market Street, and 55<sup>th</sup> Street, and Class 3B bicycle boulevard on Genoa Street), the project site currently is not directly served by any designated bikeways.

**Phase 1 Impacts.** After completion of the Phase 1 project, bicyclists would access the bicycle parking in the existing Main Garage through either Martin Luther King Jr. Way or 52<sup>nd</sup> Street. No other roadway modification that would affect bicycle access or safety would occur under Phase 1 project. Phase 1 of the project would not result in permanent substantial decrease in bicycle safety. This is a less than significant impact, and no mitigation measures are required.

**Phase 2 Impacts.** Phase 2 of the CHRCO project includes modifications to 52<sup>nd</sup> Street in order to accommodate Class 2 bicycle lanes in both directions between Martin Luther King Jr. Way and Dover Street. The proposed Class 2 bicycle lanes would not connect to any existing or planned bicycle facilities; thus, access to them would be inconvenient for most bicyclists.

While not required to address a CEQA impact, the following recommendation would improve access, comfort, and safety for bicyclists and pedestrians.

**Recommendation TRA-4:** As part of Phase 2 of the CHRCO project, coordinate with City of Oakland to implement a bikeway on 52<sup>nd</sup> Street between Market Street and Shattuck Avenue as shown on Figure IV.D-24 and consisting of the following:

- Provide a Class 3B bicycle boulevard on 52<sup>nd</sup> Street between Market and West Streets within the current street right-of-way. In addition, consider installing physical traffic calming measures as appropriate on this segment of 52<sup>nd</sup> Street to reduce automobile speeds and potential for cut-through traffic.
- Provide Class 2 bike lanes (with buffers where feasible) between West and Dover Streets, and a combination of Class 2 bike lanes (with buffers where feasible) and Class 3A arterial bicycle routes on 52<sup>nd</sup> Street between Dover Street and Shattuck Avenue, which will require following street modifications:
  - Reduce eastbound 52<sup>nd</sup> Street to one travel lane between West Street and SR 24 Ramps.
  - Reduce westbound 52<sup>nd</sup> Street to one travel lane between SR 24 Ramps and the existing Garage Driveway.
  - Reconfigure westbound 52<sup>nd</sup> Street at SR 24 On-Ramp to provide two right-turn lanes, one bicycle lane, and one through lane.
  - Adjust signal timing at the Martin Luther King Jr. Way/52<sup>nd</sup> Street (#10) and Garage Driveway/52<sup>nd</sup> Street (#11) intersections.
- Provide bulbouts on the northeast and southeast corners of the Garage Driveway/52<sup>nd</sup> Street intersection (#11)
- Create a refuge on the south crosswalk at Martin Luther King Jr. Way/52<sup>nd</sup> Street intersection by installing a median nose.

- Provide median pedestrian push-buttons for the north and south crosswalks at the Martin Luther King Jr. Way/52<sup>nd</sup> Street intersection.
- Install directional curb ramps at the northwest and southwest corners of the Martin Luther King Jr. Way/52<sup>nd</sup> Street intersection.
- To the extent feasible, maintain or widen sidewalk widths on both sides of 52<sup>nd</sup> Street between Martin Luther King Jr. Way and Dover Street.
- Consider providing pedestrian-scale lighting on 52<sup>nd</sup> Street along project frontage and under the freeway underpass.

The environmental consequences of Recommendation TRA-4 have been evaluated. Recommendation TRA-4 would modify 52<sup>nd</sup> Street as proposed by the project in order to improve bicycle and pedestrian access and safety along 52<sup>nd</sup> Street. The proposed roadway reconfiguration would increase automobile delay at the intersections along the affected segments of 52<sup>nd</sup> Street. However, Recommendation TRA-4 would not result in a significant impact. Recommendation TRA-4 would result in longer queues on 52<sup>nd</sup> Street at West Street, Martin Luther King Jr. Way, and Garage Driveway (Intersections #18, 10, and 11, respectively), which is not considered a CEQA issue. It will be more likely for queues to spill back past upstream intersections due to the close spacing of these intersections. However, all queues are expected to clear at the end of each signal cycle. Recommendation TRA-4 would also result in three net new parking spaces along 52<sup>nd</sup> Street between Martin Luther King Jr. Way and SR 24 Ramps. Implementation of Recommendation TRA-4 would not result in any significant CEQA impacts.

**(19) Bus Rider Safety.** The discussion of bus rider safety is based on application of Significance Threshold #13. Bus riders would use pedestrian facilities to travel between the bus stops and the project site.

The nearest bus stops to the project site are on Martin Luther King Jr. Way:

- Southbound Route 18 bus stop is provided just north of 52<sup>nd</sup> Street.
- Northbound Route 18 bus stop is provided mid-block between 52<sup>nd</sup> and 53<sup>rd</sup> Streets.

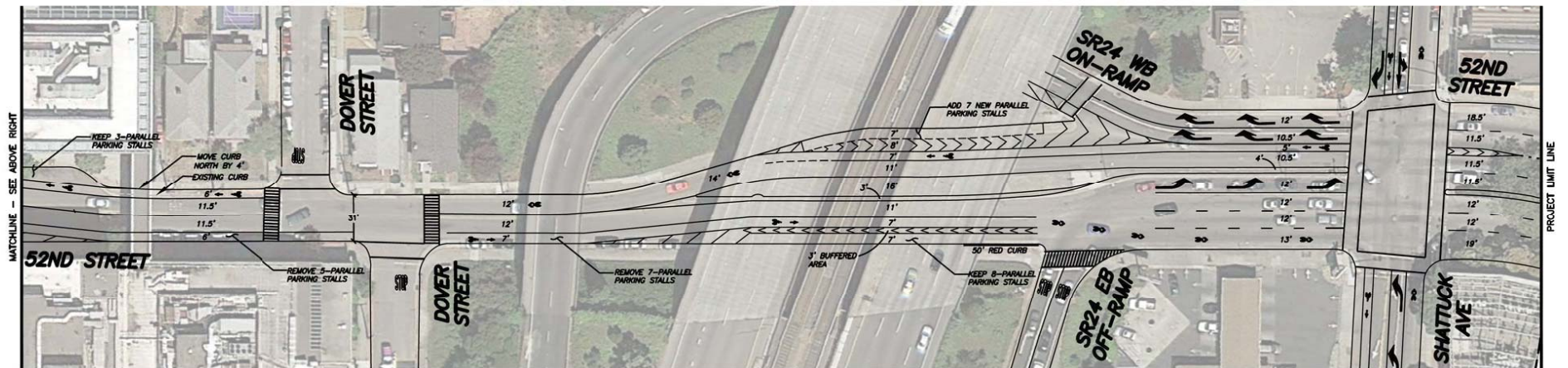
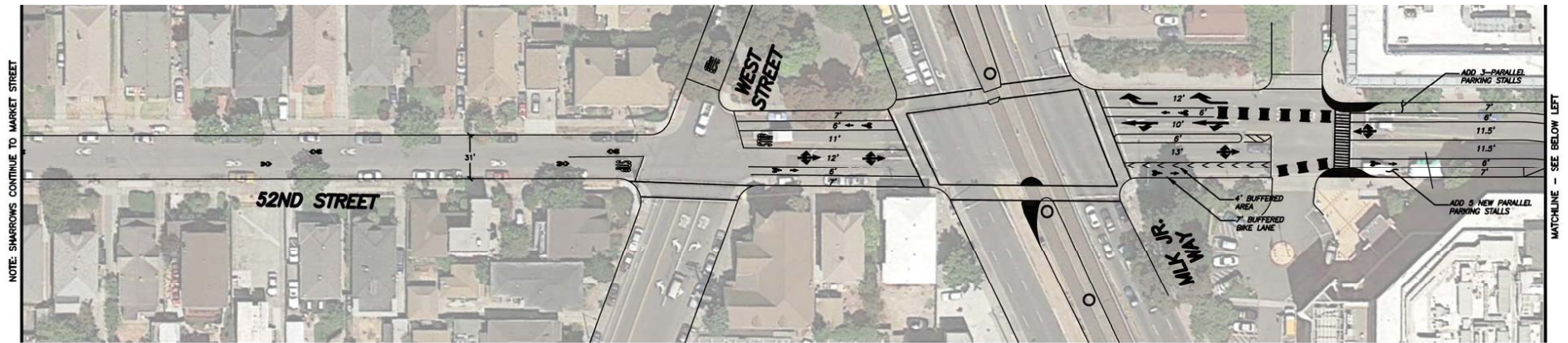
Both bus stops currently provide a shelter, bench, and trash receptacle.

**Phase 1 Impacts.** As previously described, Phase 1 of the CHRCO project would relocate the driveway for the existing Main Garage to Martin Luther King Jr. Way between 52<sup>nd</sup> and 53<sup>rd</sup> Streets. The proposed driveway would be located where the existing bus stop on northbound Martin Luther King Jr. Way is, which will require moving the bus stop.

Currently, CHRCO shuttles use the Main Plaza (i.e., Main Hospital pick-up/drop off area) in the southeast corner of Martin Luther King Jr. Way/52<sup>nd</sup> Street intersection as the on-site shuttle stop serving the hospital. It is expected that CHRCO shuttles would continue to use this location after completion of Phase 1.

Phase 1 of the CHRCO project would not result in permanent substantial decrease in bus rider safety. This is a less than significant impact, and no mitigation measures are required.

While not required to address a CEQA impact, the following recommendation would improve access and comfort for bus riders.



LSA



FIGURE IV.D-24

SOURCE: FEHR & PEERS, 2014.

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**Recommendation TRA-5: As part of Phase 1 of the CHRCO project, coordinate with AC Transit to implement the following:**

- Move the northbound Route 18 bus stop from mid-block between 52<sup>nd</sup> and 53<sup>rd</sup> Streets to just north of 52<sup>nd</sup> Street.
- Ensure that the new bus stop location would have adequate space for a shelter, bench, and trash receptacle, and maintain a pedestrian passage zone on the adjacent sidewalk. Also, provide pedestrian-scale lighting at the bus stop.

Martin Luther King Jr. Way would provide about 65 feet along the OPC-2 frontage between 52<sup>nd</sup> Street and the start of the right-turn lane into the Main Garage. This space would be adequate to accommodate 40-foot buses operated by AC Transit on Route 18. The OPC-2 building is set back about 20 feet from the curb on Martin Luther King Jr. Way, which would provide adequate space for a bus shelter while maintaining a pedestrian passage zone on the adjacent sidewalk. The proposed bus stop would also be adjacent to OPC-2 and closer to OPC-1 and the hospital compared to the current stop location, which would be more convenient for bus riders.

When buses are stopped at the proposed bus stop, they may delay motorists that want to turn into the Main Garage. Considering that AC Transit operates three to four buses per hour on this route, not all buses stop at this bus stop, and the relatively short time that buses would dwell at the bus stop, potential queues behind buses would be infrequent and short duration. Therefore, implementation of Recommendation TRA-5 would not result in any significant CEQA impacts.

**Phase 2 Impacts.** Phase 2 of the CHRCO project would not modify the surrounding roadways or have features that would affect safety or access for AC Transit bus riders. Phase 2 of the CHRCO project would close the existing Main Plaza driveway on Martin Luther King Jr. Way, which is currently used by CHRCO shuttles to access the on-site shuttle stop.

Phase 2 of the CHRCO project would not result in permanent substantial decrease in bus rider safety. This is a less than significant impact, and no mitigation measures are required.

While not required to address a CEQA impact, the following recommendation would improve access and comfort for shuttle riders.

**Recommendation TRA-6: As part of Phase 2 of the CHRCO project, consider providing shuttle stops at the following locations:**

- Either along eastbound 52<sup>nd</sup> Street just east of the signalized pedestrian crossing to primarily serve OPC-1 and OPC-2 or within the reconfigured plaza at the southeast corner of the Martin Luther King Jr. Way/52<sup>nd</sup> Street intersection.
- In the new entrance area for the hospital that can be accessed through the extension of Dover Street to primarily serve the main hospital.

The relocation of the shuttle stops, as described in Recommendation TRA-6, would not interfere with access and circulation or substantial decrease safety for any travel modes. Therefore, implementation of Recommendation TRA-6 would not result in any significant CEQA impacts.

**(20) At-Grade Railroad Crossings.** The discussion of at-grade railroad crossing safety is based on application of Significance Threshold #14. The CHRCO project site is not located near any at-grade railroad crossings. Therefore, it will not generate substantial traffic of any travel mode travelling across at-grade railroad crossings. Phase 1 or Phase 2 of the project will result in no impact related to at-grade railroad crossings, and no mitigation measures are required.

**(21) Consistency with Adopted Policies, Plans or Programs Supporting Alternative Transportation.** The discussion of consistency with adopted policies, plans or programs supporting alternative transportation is based on application of Significance Threshold #15. A discussion of applicable policies and plans is provided below. In general, the CHRCO project and the associated SCAs and Recommendations presented in this DEIR, are consistent with these policies, plans and programs, and would not cause a significant impact by conflicting with adopted policies, plans, or programs supporting public transit, bicycle, or pedestrian.

The City of Oakland General Plan LUTE, as well as the City's Public Transit and Alternative Mode and Complete Streets Policies, states a strong preference for encouraging the use of non-automobile transportation modes, such as transit, bicycling, and walking. The proposed project would encourage the use of non-automobile transportation modes because it is in a walkable urban environment with quality bicycle infrastructure and transit service. Specifically, the site is directly served by a frequent BART shuttle service, and several AC Transit routes provide bus service within walking distance of CHRCO. In addition, Recommendation TRA-4, would provide a designated bicycle facility adjacent to the project site, which will connect to the bicycle system throughout the City.

As required by City of Oakland's SCA TRA-1, the project would implement a TDM program to directly encourage more employees to shift from driving alone to other modes of travel. The TDM program would consist of strategies that incentivize travel by non-automobile modes, such as discounted transit tickets and preferential carpool parking, and strategies that disincentivize travel by automobile, such as higher parking fees.

Although a robust TDM program would reduce the number of single-occupant automobile trips generated by the project, a TDM program may not be as effective for hospitals as other types of developments. Typically, TDM programs are most effective for developments, such as office buildings, where most trips are daily peak period commute trips. Although most employees regularly travel to and from CHRCO, many have irregular work hours and may start and/or end their work shift outside the peak commute periods. As a result, some employees may not have access to convenient transit. Most patients and visitors do not travel to the site daily, may be traveling long distances, or may be traveling in distress. Thus, walking, bicycling, or transit may not be convenient travel modes. Although most of the TDM strategies are aimed at CHRCO employees, it is expected that patients and visitors would also benefit from some of these strategies.

As previously described, the CHRCO project and the recommendations included in this EIR would alter the public right-of-way in the project vicinity. However, these modifications would generally enhance pedestrian and bicycle access and safety. For example, Recommendation TRA-3 would widen the sidewalk adjacent to OPC-2 and the existing Main Garage to be consistent with the City's *Pedestrian Master Plan*. Recommendation TRA-4 would provide bicycle facilities on 52<sup>nd</sup> Street between Market Street and Shattuck Avenue. Although this bicycle facility, except the segment between West and Genoa Streets, is not included in the City's *Bicycle Master Plan*, it would connect the CHRCO site with the City's extensive bicycle network.

Overall, the proposed project is consistent with both the City's Pedestrian Master Plan and Bicycle Master Plan because modifications proposed to existing pedestrian or bicycle facilities in the surrounding areas would not adversely affect current pedestrian and bicycle access and circulation and would not adversely affect installation of future facilities. The CHRCO project is also anticipated to include short-term and long-term bicycle parking that encourage bicycle activity (addressed in more detail in section 7.a, Bicycle Parking). Recommendations TRA-1 through TRA-6 would improve access, circulation, safety, and comfort for pedestrians, bicyclists, and bus riders, further encouraging the use of these modes in the project vicinity.

The proposed CHRCO project would not conflict with adopted City policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities. This is a less than significant impact, and no mitigation measures are required.

**(22) Construction-Period Impacts.** The discussion of construction-period impacts is based on application of Significance Threshold #16. During the construction period for either the Phase 1 or Phase 2 project, temporary and intermittent transportation impacts may result from truck movements as well as construction worker vehicles to and from the project site. The construction-related traffic may temporarily reduce capacities of roadways in the project vicinity because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles.

**Figure IV.D-25** shows the construction truck routes between the project site and the nearby freeways. Considering the proximity of freeway ramps on Martin Luther King Jr. Way and Telegraph Avenue, it is expected that construction trucks on local roadways would be limited to Martin Luther King Jr. Way, 52<sup>nd</sup> Street, Telegraph Avenue, and if necessary 55<sup>th</sup> Street. Truck traffic that occurs during the peak commute hours (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.) may result in worse LOS and higher delays at study intersections during the construction period.

Parking for construction workers' vehicles would need to be accommodated while maintaining adequate parking supply for the CHRCO employees and patients/visitors. Since CHRCO parking facilities operate at or near capacity on typical weekdays, it is expected that parking for most construction workers could not be accommodated on-site. During the construction to move the main access for the existing garage from 52<sup>nd</sup> Street to Martin Luther King Jr. Way, some or all of the parking spaces in the existing garage may be temporarily inaccessible. If parking cannot be accommodated within the project site, it would temporarily increase parking occupancy levels in the area.

Potential construction activity along the Martin Luther King Jr. Way and 52<sup>nd</sup> Street frontages, especially in the public right-of-way, could also result in temporary closure of sidewalks, prohibition of on-street parking, and/or may impact the operations of AC Transit Route 18 buses along Martin Luther King Jr. Way.

**Phase 1 Impacts.** Phase 1 construction is expected to last about 58 months. During this period up to 140 construction workers are expected to be at CHRCO. Parking for all construction workers would be accommodated off-site. **Figure IV.D-25** shows the construction truck routes.

**Phase 2 Impacts.** Phase 2 construction is expected to last about 60 months. During this period up to 300 construction workers are expected to be at CHRCO. Parking for all construction workers would be accommodated off-site. **Figure IV.D-25** shows the construction truck routes.

The City of Oakland SCA TRA-2 (Construction Traffic and Parking), as listed above, requires that a Construction Traffic Management Plan be developed as part of a larger Construction Management Plan to address potentially significant impacts during the project's construction. To further implement SCA TRA-2, the Construction Traffic Management Plan developed for the project shall include the following:

- m) A set of comprehensive traffic control measures for motor vehicles, transit, bicycle, and pedestrian access and circulation during each phase of construction.
- n) A construction period parking management plan to ensure that parking demands for construction workers, site employees, and patients/visitors are accommodated during each phase of construction.
- o) Limit construction truck traffic to the streets identified in **Figure IV.D-25** as part of the contract for project construction.

Thus, with the implementation of SCA TRA-2 as part of the project, Phase 1 and Phase 2 of the CHRCO project would not result in a substantial, though temporary, adverse effect on the circulation system during construction of the project.

**(23) Changes in Air Traffic Patterns.** The discussion of changes in air traffic patterns is based on application of Significance Threshold #17. The Oakland International Airport is located about eight miles south of the project site. The CHRCO project would increase density and increase building heights at the project site. However, building heights are not expected to interfere with current flight patterns of Oakland International Airport or other nearby airports.

The project site currently includes a helistop. As noted in the Chapter III, Project Description (Project Site Existing Characteristics subsection), helicopter arrivals/departures are expected to increase approximately 1 percent per year through 2025, with or without the project, from an average base count of 559 helicopter arrivals/departures in 2013 (or a total of 1,118 operations). Phase 2 of the proposed project would include the demolition of the existing helistop and construction of a new helistop on the roof of the Link Building, approximately 250 feet north of the existing helistop. The projected number of helicopter operations that would occur in the year 2025 with or without the project is approximately 1,260. While helicopters are bringing patients from different directions, pilots want to land into the wind. Typically, prevailing winds are out of the west, therefore most approaches would be from the east and most departures would be toward the west. Implementation of the proposed project would not result in a significant change in air traffic patterns compared to existing and future conditions. Please see Section IV.J Hazards and Hazardous Materials for a discussion on the aviation setting and analysis.

**(24) Cumulative Impact.** According to Significance Threshold #18, a project's contribution to cumulative impacts is considered significant if the project would exceed one of the previously listed thresholds in a future year scenario. As summarized above in sections (3) through (7), neither Phase 1 nor Phase 2 of the proposed project would cause a significant impact under 2020 or 2035 conditions. Therefore, in combination with past, present, and reasonably foreseeable future projects, the proposed project would not contribute to a cumulatively considerable impact on traffic operations.





FIGURE IV.D-25

LSA

NOT TO SCALE



SOURCE: FEHR & PEERS, 2014.

I:\CHR1201 Childrens Hospital\figures\Fig\_IVD25.ai (4/4/14)

CHRCO Campus Master Plan Project EIR  
Construction Truck Routes

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**(25) Traffic Intrusion in Residential Street.** The traffic operations analysis presented in previous sections accounts for CHRCO traffic using residential streets such as 53<sup>rd</sup>, 54<sup>th</sup>, and Dover Streets. As shown on **Figure IV.D-10**, the majority of the residential streets in the vicinity of the CHRCO currently have speed humps which reduce automobile speeds and discourage cut-through traffic. The CHRCO project is expected to increase traffic on the residential streets primarily due to relocating the existing Main Garage driveway from 52<sup>nd</sup> Street to Martin Luther King Jr. Way. The new driveway would be limited to right-in/right-out only which would result in some motorists using the residential streets adjacent to the CHRCO, especially for driving to destinations in the east, such as Telegraph Avenue or Eastbound SR 24.

The traffic impact analysis for Existing, 2020, and 2035 conditions for both Phase 1 and Phase 2 (i.e., buildout) of the project included analysis of potential impacts on intersections along the residential streets. As previously shown, neither Phase 1 nor Phase 2 (i.e., buildout) of the project would cause a significant impact at the study intersections on residential streets. In addition, due to the relatively low current traffic volumes on residential streets, even if more project generated traffic than estimated in the traffic impact analysis use these residential streets, the traffic volumes are not expected to meet the thresholds for adverse impacts set by City of Oakland's Significance Thresholds, and no significant impacts would be identified.

Since neighborhood traffic intrusion would not exceed the capacity of these residential streets, it would not result in a significant impact based on the identified significant criteria. As a result, no mitigation measure is required.

## 7. Planning-Related Non-CEQA Considerations

The following section discusses transportation-related topics that are not considerations under CEQA but are evaluated to inform decision makers and the public about these issues. For each topic, the section begins with a summary of the City's guidelines for evaluation followed by analysis, and if necessary, recommendations for improvements.

**a. Parking-Related Impacts.** The First District Court of Appeal has held that parking is not part of the permanent physical environment, that parking conditions change over time as people change their travel patterns, and that unmet parking demand created by a project need not be considered a significant environmental impact under CEQA unless it would cause significant secondary effects, such as air quality or noise effects.<sup>18</sup> Similarly, the December 2009 amendments to the State *CEQA Guidelines* (which became effective March 18, 2010) removed parking from the State's Environmental Checklist (Appendix G of the State CEQA Guidelines) as an environmental factor to be considered under CEQA.

Parking supply/demand varies by time of day, day of week, and seasonally. As parking demand increases faster than the supply, parking prices rise to reach equilibrium between supply and demand. Decreased availability and increased costs result in changes to people's mode and pattern of travel. However, the City of Oakland, in its review of the proposed project, wants to ensure that the project's provision of parking spaces along with measures to lessen parking demand (by encouraging the use of

<sup>18</sup> San Franciscans Upholding the Downtown Plan v. the City and County of San Francisco (2002) 102 Cal.App.4<sup>th</sup> 656.



non-auto travel modes) would result in minimal adverse effects to project occupants and visitors, and that any secondary effects (such as on air quality due to drivers searching for parking spaces) would be minimized. As such, although not required by CEQA, parking conditions are evaluated in this document as a non-CEQA topic for informational purposes.

Parking deficits may be associated with secondary physical environmental impacts, such as air quality and noise effects, caused by congestion resulting from drivers circling as they look for a parking space. However, the absence of a ready supply of parking spaces, combined with available alternatives to auto travel (e.g., transit service, shuttles, taxis, bicycles or travel by foot), may induce drivers to shift to other modes of travel, or change their overall travel habits. Any such resulting shifts to alternative modes of travel would be in keeping with the City's Public Transit and Alternative Modes Policy (sometimes referred to as the "Transit First" policy) and Complete Streets Policy.

Additionally, regarding potential secondary effects, cars circling and looking for a parking space in areas of limited parking supply is typically a temporary condition, often offset by a reduction in vehicle trips due to others who are aware of constrained parking conditions in a given area. Hence, any secondary environmental impacts that might result from a shortfall in parking in the vicinity of the proposed project are considered less than significant.

This document evaluates if the proposed CHRCO's estimated parking demand (both project-generated and project-displaced) would be met by the proposed parking supply or by the existing parking supply within a reasonable walking distance of the project site.<sup>19</sup> Project-displaced parking results from the project's removal of standard on-street parking, City or owned/controlled parking, and/or legally required off-street parking (non-open-to-the-public parking which is legally required).

**b. Bicycle Parking.** Currently, CHRCO provides bicycle parking for about 40 bicycles in the form of bicycle racks on the ground level of the existing Main Garage.

City of Oakland Bicycle Parking Ordinance (Municipal Code Chapter 17.117) provides bicycle parking requirements for new facilities, additions and remodels to existing facilities. Two types of bicycle parking are required: long-term bicycle parking, which includes lockers or locked enclosures, and short-term bicycle parking, which includes bicycle racks.

The Bicycle Parking Ordinance has requirements for new facilities, additions, and remodel projects over 50,000 square feet and with an estimated construction cost of over \$1 million. The Bicycle Parking Ordinance has the following requirements for health care and special health care facilities (Municipal Code Chapter 17.117.110):

- Long-term: One space for each 20 employees, or 1 space for each 70,000 square feet, whichever is greater
- Short-term: One space for each 40,000 square feet of floor area

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<sup>19</sup> The analysis must compare the proposed parking supply with both the estimated demand **and** the Oakland Planning Code requirements.

**Table IV.D-20** summarizes the bicycle parking supply as required by the Bicycle Parking Ordinance for Phases 1 and 2 of the project. At the end of Phase 1, CHRCO is required to provide 3 additional long-term and 5 additional short-term bicycle parking spaces. At the end of Phase 2, CHRCO is required to provide 10 additional long-term and 9 additional short-term bicycle parking spaces.

**Table IV.D-20: Required Bicycle Parking<sup>a</sup>**

| Project Phase               | Units                        | Long-Term                                      |              | Short-Term                   |           |
|-----------------------------|------------------------------|--|--------------|------------------------------|-----------|
|                             |                              | Spaces per Unit <sup>b</sup>                   | Spaces       | Spaces per Unit <sup>b</sup> | Spaces    |
| Phase 1                     | 185.750 KSF<br>25 employees  | 1:70 KSF<br>1:20 emp.<br>(whichever is higher) | 3 spaces     | 1:40 KSF                     | 5 spaces  |
| Phase 2<br>(i.e., buildout) | 351.340 KSF<br>205 employees | 1:70 KSF<br>1:20 emp.<br>(whichever is higher) | 10<br>spaces | 1:40 KSF                     | 9 spaces  |
| <b>Total</b>                |                              |  | <b>13</b>    |                              | <b>14</b> |

<sup>a</sup> The bicycle parking requirements are only applicable to new facilities, additions, and remodeled components of the project

<sup>b</sup> Based on Oakland Municipal Code Section 17.117.10

Source: Fehr & Peers, 2014.

As previously discussed, the Bicycle Parking Ordinance requirements are only applicable to new facilities, additions, and remodel projects, which are summarized in **Table IV.D-20** for the CHRCO project. Although not required by the Bicycle Parking Ordinance, **Table IV.D-21** applies the bicycle parking requirements to the entire CHRCO site to present a parking supply that would accommodate the entire site's parking demand.

**Table IV.D-21: Recommended Bicycle Parking**

| Units                        | Long-Term                                   |            | Short-Term                   |           |
|------------------------------|---|------------|------------------------------|-----------|
|                              | Spaces per Unit <sup>a</sup>                | Spaces     | Spaces per Unit <sup>a</sup> | Spaces    |
| 1,025 KSF<br>2,371 employees | 1:70 KSF<br>1:20 emp. (whichever is higher) | 119 spaces | 1:40 KSF                     | 26 spaces |

<sup>a</sup> Based on Oakland Municipal Code Section 17.117.10

Source: Fehr & Peers, 2014.

The Oakland Bicycle Parking Ordinance addresses not only the quantity of parking, but the design and layout of that parking. Generally, long-term and short-term bicycle parking spaces are required to be located within 500 feet and 50 feet of the building entrance, respectively. The current project plans identify bicycle parking in the southwest corner of the existing Main Garage as part of Phase 1 of the project; however, the project plans do not identify the type and amount of long-term or short-term bicycle parking spaces as part of Phase 1 of the project and the location, type and amount of bicycle parking as part of Phase 2 of the project.

**Recommendation TRA-7:** Although not required to address an adverse environmental impact, the following should be considered in regards to bicycle parking as part of the TDM program required by SCA TRA-1:

- Consistent with the Oakland Bicycle Parking Ordinance, consider providing a total of 119 long-term and 26 short-term bicycle parking spaces at project buildout.
- Monitor the usage of long-term and short-term bicycle parking spaces and if necessary provide additional bicycle parking spaces.

**c. Automobile Parking.** This section discusses parking supply and demand under Phases 1 and 2 of the proposed project

**(1) Parking Supply.** The proposed project would result in the following changes to the off-street parking supply under each project phase:

- Phase 1 would decrease the total parking supply by two spaces from the current 1,107 spaces to 1,105 spaces through the following:
  - Addition of 15 Emergency Department parking spaces on the ground level of OPC-2 with access to and from 52<sup>nd</sup> Street (net loss of 2 spaces).
  - Elimination of 17 parking spaces at the existing Main Garage/Physicians' Garage due to modifications to change the main garage access from 52<sup>nd</sup> Street to Martin Luther King Jr. Way.
- Phase 2 would increase the total parking supply by an additional 286 spaces to 1,391 spaces through the following:
  - Elimination of the existing 48-space South Lot.
  - Construction of a new 334-space parking garage at the south end of the main campus with access to and from 52<sup>nd</sup> Street.

The proposed project is not expected to change the on-street parking after Phase 1 project. The Phase 2 project is expected to result in the following changes to on-street parking:

- Implementation of Recommendation TRA-4 would add three additional on-street parking spaces on 52<sup>nd</sup> Street between Martin Luther King Jr. Way and Dover Street. In addition, Recommendation TRA-4 would also remove 7 on-street spaces on the south side of 52<sup>nd</sup> Street between Dover Street and SR 24 Ramps and add 7 on-street spaces on the north side of the street.

**(2) Parking Demand Estimate.** Parking demand for Phases 1 and 2 of the CHRCO project was estimated using a similar methodology used to estimate trip generation (see section 5.b(2), Trip Generation, for more detail).

Based on the current population of 3,645 (2,166 employees and 1,479 patients/visitors) and current peak parking demand of 1,113 spaces, CHRCO has the following peak parking generation rate:

- Peak Parking Demand Rate = 0.31 parking spaces per person

This peak parking demand rate assumes that the CHRCO would continue to operate similar to current conditions with similar parking behavior by project employees and patients/visitors. The parking demand rate is conservative because it does not account for the TDM program that would be implemented by the proposed project to reduce project parking demand.

**Table IV.D-22** summarizes parking demand and supply at end of Phases 1 and 2 of the CHRCO project. These parking demand estimates are based on the population estimates that are higher than the population forecasts provided by CHRCO as described in section 5.b(1), Project Description. In addition, the estimated parking demand includes the current CHRCO employees and patients/visitors who park on-street.

**Table IV.D-22: Parking Supply and Peak Parking Demand**

|                                  | Existing (2013) | Phase 1 | Phase 2 (i.e., buildout) |
|----------------------------------|-----------------|---------|--------------------------|
| Population                       | 3,645           | 3,796   | 4,435                    |
| Peak Parking Demand <sup>a</sup> | 1,113           | 1,176   | 1,374                    |
| Parking Supply                   | 1,107           | 1,105   | 1,391                    |
| Surplus (Deficit)                | (6)             | (71)    | +17                      |

<sup>a</sup> Based on estimated parking demand of 0.31 spaces per person

Source: Fehr & Peers, 2014.

It is estimated that CHRCO would have a parking deficit of about 71 spaces at the end of Phase 1 and a parking surplus of 17 spaces at the end of Phase 2. The parking deficit at the end of Phase 1 corresponds to about 5 percent of the overall demand. A successful implementation of the TDM program can reduce the overall parking demand by more than 5 percent and eliminate the projected parking deficit.

**(3) City Code Parking Requirements.** A consideration when evaluating the project's proposed parking supply is how it compares to the City's Municipal Code requirements for off-street parking (Municipal Code Chapter 17.116). The project site is zoned S-1 (Medical Center), and Municipal Code Chapter 17.116.70 indicates the following parking requirements for Hospitals:

- One space for every four beds,
- Plus one space for every four employees other than doctors, and
- Plus one space for every staff or regular visiting doctor.

**Table IV.D-23** summarizes the off-street parking required by the City's Municipal Code under existing conditions and after the completion of Phases 1 and 2 of the project. Currently, CHRCO's parking supply and demand exceed the City Code requirements. The Phase 1 project would require fewer spaces than the current project because of the reduction in number of on-site beds. The parking supply proposed by the project would exceed the City Code requirements after the completion of both Phases 1 and 2 of the project.

**(4) Parking Analysis Conclusions.** Although the proposed project currently provides and would continue to provide parking in excess of the parking supply required by City Code, it is estimated to have an interim parking deficit at the end of Phase 1. However, it would provide adequate parking supply to meet the overall parking demand at the end of Phase 2 (i.e., buildout).

**Table IV.D-23: City Code Parking Requirements Summary**

| Project Phase            | Units   | Spaces per Unit <sup>a</sup>               | Required Spaces                       | Parking Supply | Net Difference |
|--------------------------|---|--|---------------------------------------|----------------|----------------|
| Existing Project         | 170 Beds<br>1,921 Non-Dr. Emp.<br>245 Doctors | 1:4 Beds<br>1:4 Non-Dr. Emp.<br>1:1 Doctor | 43<br>481<br><u>245</u><br><b>769</b> | 1,107          | 338            |
| Phase 1                  | 140 Beds<br>1,946 Non-Dr. Emp.<br>245 Doctors | 1:4 Beds<br>1:4 Non-Dr. Emp.<br>1:1 Doctor | 35<br>487<br><u>245</u><br><b>767</b> | 1,105          | 338            |
| Phase 2 (i.e., buildout) | 170 Beds<br>1,921 Non-Dr. Emp.<br>245 Doctors | 1:4 Beds<br>1:4 Non-Dr. Emp.<br>1:1 Doctor | 53<br>527<br><u>266</u><br><b>846</b> | 1,391          | 545            |

<sup>a</sup> Based on Oakland Municipal Code Section 17.116.70

Source: Fehr &amp; Peers, 2014.

The TDM program that would be implemented by CHRCO would include several strategies that would reduce parking demand. These strategies may include providing transit subsidies, on-site car-sharing, preferential employee carpool parking, and increasing parking fees.

**Recommendation TRA-8: Although not required to address an adverse environmental impact, the following strategies, should be considered as part of the TDM program required by SCA TRA-1, to reduce parking demand and better manage the available parking supply:**

- Install an automated parking counting system including variable message signs to inform motorists approaching CHRCO of the number of unoccupied parking spaces in the two garages in order to reduce potential traffic circulation. In addition, provide a variable message sign at the entrance to the Main Garage basement that shows the number of unoccupied parking spaces in the basement.
- Continue to restrict parking in the basement of the existing garage to parking for physicians and hospital senior management only.
- Continue to provide attendant parking at the West Lot and consider providing attendant parking at the existing and/or proposed garage during peak parking demand periods if necessary.
- Install parking meters at all on-street parking spaces on 52<sup>nd</sup> Street between Martin Luther King Jr. Way and SR 24 Ramps and on segments of Martin Luther King Jr. Way within two blocks of the project site with non-residential frontage.
- Limit parking on 52<sup>nd</sup> Street along project frontage to 30 minutes.

**d. Transit Ridership.** Transit load is not part of the permanent physical environment; transit service changes over time as people change their travel patterns. Therefore, the effect of the proposed project on transit ridership need not be considered a significant environmental impact under CEQA unless it would cause significant secondary effects, such as causing the construction of new permanent transit facilities which in turn causes physical effects on the environment. Furthermore, an increase in transit ridership is an environmental benefit, not an adverse impact. One of the goals of the Land Use and Transportation Element of the Oakland General Plan is to promote transit ridership. The City of Oakland, however, in its review of the proposed project, takes into account the project's potential effect on transit ridership. As such, although not required by CEQA, transit ridership is evaluated in this document as a non-CEQA topic for informational purposes.

This document evaluates whether the proposed project would exceed any of the following:

- Increase the average ridership on AC Transit lines by 3 percent at bus stops where the average load factor in place would exceed 125 percent over a peak thirty minute period;
- Increase the peak hour average ridership on BART by 3 percent where the passenger volume would exceed the standing capacity of BART trains; or,
- Increase the peak hour average ridership at a BART station by 3 percent where average waiting time at faregates would exceed one minute.

(1) **AC Transit Ridership.** As shown in **Table IV.D-14**, the project would generate about one new peak hour AC Transit bus trip under Phase 1 and about five new peak hour bus trips under Phase 2. Considering that about eight buses operate just on Martin Luther King Jr. Way adjacent to the project site during the peak hours, it is expected that ridership on buses in the project vicinity would increase by less than one rider per bus during the peak hours. This level of increase would not have a substantial effect on AC Transit bus ridership.

(2) **BART Ridership and Faregates.** As shown in **Table IV.D-14**, the project would generate about two new peak hour BART trips under Phase 1 and about nine new peak hour BART trips under Phase 2. Considering that the MacArthur BART Station is served by about 30 trains during the peak hours, it is expected that the proposed project would increase ridership on BART by less than one rider per train during the peak hours. This level of increase would not have a substantial effect on BART ridership or queues at BART faregates.

**e. Intersection Queuing Analysis.** City of Oakland requires the Evaluation of a Project's potential effect on 95<sup>th</sup> percentile queuing. This document evaluates whether the project would:

- Cause an increase in 95<sup>th</sup> percentile queue length of 25 feet or more at a study, signalized intersection under the Existing Plus Project condition or the Near-Term Future Baseline Plus Project condition.<sup>20</sup>

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<sup>20</sup> This EIR does not evaluate queuing conditions under 2035 conditions because queuing is affected by a variety of factors that can change in the long-term. Thus, the results would not be very accurate or meaningful.

Environmental impacts of the Phase 1 and Phase 2 on intersection traffic operations were analyzed through the delay/ LOS analysis presented earlier in this document. Although not an environmental impact, an analysis of project's impacts on queuing at intersections was also completed to provide additional information to aid the public and decision makers in evaluating and considering the merits of the proposed CHRCO project.

Queuing analysis for intersections in the project vicinity was completed for the Existing and 2020 scenarios using the Synchro software. The software calculates the expected queue using a formula that extrapolates the length of queue based on two cycle lengths. This methodology provides reasonable results for locations operating in the LOS A through LOS D, but can misrepresent conditions as intersection operations approach capacity. In these instances, the software output denotes the condition with a letter/symbol adjacent to the analysis output worksheet.

Queuing impacts were identified where the trips generated by either Phase 1 or Phase 2 would add 25 or more feet to the 95<sup>th</sup> percentile queue if the 95<sup>th</sup> percentile queue was over the available storage length with or without the project. Appendix C summarizes queues at the study intersections.

Neither Phase 1 or Phase 2 of the project would add 25 or more feet to the 95<sup>th</sup> percentile queues at locations where the 95<sup>th</sup> percentile queue would be over the available storage length with or without the project.

**f. Traffic Control.** City of Oakland requires evaluating the need for additional traffic control devices (e.g., stop signs, street lighting, crosswalks, traffic calming devices) using the California Manual for Uniform Traffic Control Devices (CA MUTCD) and applicable City standards.

To assess consideration for signalization of stop-controlled intersections, the CA MUTCD presents eight signal warrants. Generally, meeting one of the signal warrants could justify signalization of an intersection. However, meeting one or more of the signal warrants does not mean that the intersection must be signalized. Therefore, an evaluation of all applicable warrants should be conducted and additional factors (e.g., congestion, approach conditions, collision record) should be considered before the decision to install a signal is made. This EIR evaluates the peak hour vehicular volume warrant (Warrant 3) for urban conditions using the existing traffic count data because this warrant is one of the thresholds of significance used by City of Oakland to determine if a project causes a significant impact.

None of the unsignalized study intersections currently meet the peak hour signal warrant. The unsignalized study intersections are also not expected to meet the peak hour signal warrant under 2020 or 2035 conditions for either Phase 1 or Phase 2.

In addition, the currently signalized Martin Luther King Jr. Way/53<sup>rd</sup> Street intersection (#8) also does not meet the peak hour signal warrant.

**g. Collision History.** City of Oakland requires evaluation of three years of vehicle, pedestrian, and bicycle collision data for intersections and roadway segments within three blocks of the project site to determine if the project would contribute to an existing problem or if any improvements are recommended in order to alleviate potential effects of the project.



Collision data for the streets adjacent to the project site for the five year period from 2008 through 2012 was obtained through the Statewide Integrated Traffic Records System (SWITRS). Appendix C summarizes the data for vehicle/vehicle, vehicle/bicycle, and vehicle/pedestrian collisions.

A total of 180 collisions, including 15 (about 8 percent) involving bicycles and six (about 4 percent) involving pedestrians were reported at intersections and mid-block in the study area. About 58 percent of all collisions resulted in injury, including 80 percent of collisions involving bicycles and 100 percent of collisions involving pedestrians. No fatal collisions were reported during this period in the study area.

The highest number of vehicle/vehicle collisions and injuries was reported at or near the Martin Luther King Jr. Way/52<sup>nd</sup> Street intersection. A total of 31 vehicle/vehicle collisions were reported at this intersection over the five year period, with 34 resulting injuries. Another 18 vehicle/vehicle collisions were reported just south of the intersection and six were reported to the north. The most common vehicle/vehicle collision type at all analyzed intersections was broadside collisions.

Vehicle collisions with bicycles and pedestrians accounted for about 12 percent of reported collisions in the study area. There were six reported pedestrian collisions, with five on Martin Luther King Way. Pedestrian collisions occurred mostly along Martin Luther King Jr. Way between 51<sup>st</sup> and 55<sup>th</sup> Streets, with two collisions at 55<sup>th</sup> Street. A total of 15 bicycle collisions were reported in the study area, seven of which were along Martin Luther King Jr. Way. The intersections on Martin Luther King Jr. Way between 53<sup>rd</sup> and 55<sup>th</sup> Streets had the highest number of bicycle collisions (five collisions), four of which resulted in injury. Another four bicycle collisions were reported at the Shattuck Ave/52<sup>nd</sup> Street intersection, all of which resulted in injuries.

A relatively small percentage of the collisions (about 30 percent) were reported mid-block between intersections. These collisions were largely between vehicles, with sideswipe and rear-end the most common. Three mid-block collisions involving pedestrians and two mid-block collisions involving bicycles were also reported. The highest number of mid-block vehicle collisions (18) was on Martin Luther King Jr. Way between 51<sup>st</sup> and 52<sup>nd</sup> Streets, resulting in four injuries.

The proposed CHRCO project would result in additional automobile traffic, as well as pedestrian and bicycle activity in the vicinity of the project site. As previously described, the proposed project and the Recommendations included in this EIR would include design features that would improve safety for all users, especially for pedestrians and bicyclists.

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## E. AIR QUALITY

This section has been prepared using the methodologies and assumptions contained in the Bay Area Air Quality Management District's (BAAQMD) *CEQA Air Quality Guidelines*.<sup>1</sup> In keeping with these guidelines, this section describes existing air quality and the regulatory framework for air quality. The section also describes the potential effects of the project on air quality, including the effects of project construction and operational traffic on regional pollutant levels and health risks. Mitigation measures to reduce potentially significant air quality impacts are identified, where appropriate.

### 1. Setting

This section describes existing air quality conditions in the City of Oakland, beginning with a discussion of typical air pollutant types and sources, health effects, and climatology relating to air quality.

**a. Air Pollutants and Health Effects.** Both State and federal governments have established health-based Ambient Air Quality Standards for six criteria air pollutants:<sup>2</sup> carbon monoxide (CO), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), lead (Pb), and suspended particulate matter (PM). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Long-term exposure to elevated levels of criteria pollutants may result in adverse health effects. However, emission thresholds established by an air district are used to manage total regional emissions within an air basin based on the air basin's attainment status for criteria pollutants. These emission thresholds were established for individual projects that would contribute to regional emissions and pollutant concentrations and could adversely affect or delay the projected attainment target year for certain criteria pollutants.

Because of the conservative nature of the thresholds, and the basin-wide context of individual project emissions, there is no direct correlation between a single project and localized air quality-related health effects. One individual project that generates emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like nitrogen oxides (NO<sub>x</sub>) and reactive organic gases (ROG).

Occupants of facilities such as schools, day care centers, parks and playgrounds, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to air pollutants because these population groups have increased susceptibility to respiratory disease. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions, compared to commercial and industrial areas, because people generally spend longer periods of time at their residences, with greater associated exposure to ambient air quality conditions. Recreational uses are also considered sensitive compared to commercial and industrial uses due to greater exposure to ambient air quality conditions associated with exercise.

<sup>1</sup> Bay Area Air Quality Management District, 2012. *CEQA Air Quality Guidelines*. May.

<sup>2</sup> Criteria pollutants are defined as those pollutants for which the federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health.

Air pollutants and their health effects, and other air pollution-related considerations are summarized in **Table IV.E-1** and are described in more detail below.

**Table IV.E-1: Sources and Health Effects of Air Pollutants**

| Pollutants   | Sources   | Primary Effects   |
|--|---|---|
| Carbon Monoxide (CO)   | <ul style="list-style-type: none"> <li>Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust.</li> <li>Natural events, such as decomposition of organic matter.</li> </ul> | <ul style="list-style-type: none"> <li>Reduced tolerance for exercise.</li> <li>Impairment of mental function.</li> <li>Impairment of fetal development.</li> <li>Death at high levels of exposure.</li> <li>Aggravation of some heart diseases (angina).</li> </ul>                                      |
| Nitrogen Dioxide (NO <sub>2</sub> )                                    | <ul style="list-style-type: none"> <li>Motor vehicle exhaust.</li> <li>High temperature stationary combustion.</li> <li>Atmospheric reactions.</li> </ul>   | <ul style="list-style-type: none"> <li>Aggravation of respiratory illness.</li> <li>Reduced visibility.</li> <li>Reduced plant growth.</li> <li>Formation of acid rain.</li> </ul>  |
| Ozone (O <sub>3</sub> )  | <ul style="list-style-type: none"> <li>Atmospheric reaction of organic gases with nitrogen oxides in sunlight.</li> </ul>   | <ul style="list-style-type: none"> <li>Aggravation of respiratory and cardiovascular diseases.</li> <li>Irritation of eyes.</li> <li>Impairment of cardiopulmonary function.</li> <li>Plant leaf injury.</li> </ul>   |
| Lead (Pb)  | <ul style="list-style-type: none"> <li>Contaminated soil.</li> </ul>  | <ul style="list-style-type: none"> <li>Impairment of blood functions and nerve construction.</li> <li>Behavioral and hearing problems in children.</li> </ul>   |
| Suspended Particulate Matter (PM <sub>2.5</sub> and PM <sub>10</sub> ) | <ul style="list-style-type: none"> <li>Stationary combustion of solid fuels.</li> <li>Construction activities.</li> <li>Industrial processes.</li> <li>Atmospheric chemical reactions.</li> </ul>                 | <ul style="list-style-type: none"> <li>Reduced lung function.</li> <li>Aggravation of the effects of gaseous pollutants.</li> <li>Aggravation of respiratory and cardiorespiratory diseases.</li> <li>Increased cough and chest discomfort.</li> <li>Soiling.</li> <li>Reduced visibility.</li> </ul>     |
| Sulfur Dioxide (SO <sub>2</sub> )                                      | <ul style="list-style-type: none"> <li>Combustion of sulfur-containing fossil fuels.</li> <li>Smelting of sulfur-bearing metal ores.</li> <li>Industrial processes.</li> </ul>                                    | <ul style="list-style-type: none"> <li>Aggravation of respiratory diseases (asthma, emphysema).</li> <li>Reduced lung function.</li> <li>Irritation of eyes.</li> <li>Reduced visibility.</li> <li>Plant injury.</li> <li>Deterioration of metals, textiles, leather, finishes, coatings, etc.</li> </ul> |

Source: California Air Resources Board (ARB), 2012.

**(1) Ozone.** Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving ROG and NO<sub>x</sub>. The main sources of ROG and NO<sub>x</sub>, often referred to as ozone precursors, are combustion processes (including combustion in motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the Bay Area, automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

**(2) Carbon Monoxide.** CO is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles. While CO transport is limited, it disperses with distance from the source under normal meteorological condi-

tions. However, under certain extreme meteorological conditions, CO concentrations near congested roadways or intersections may reach unhealthful levels that adversely affect local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS) or with extremely high traffic volumes. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue, impair central nervous system function, and induce angina (chest pain) in persons with serious heart disease. Extremely high levels of CO, such as those generated when a vehicle is running in an unventilated garage, can be fatal.

**(3) Particulate Matter.** Particulate matter is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from manmade and natural sources. Particulate matter is categorized in two size ranges: PM<sub>10</sub> for particles less than 10 microns in diameter and PM<sub>2.5</sub> for particles less than 2.5 microns in diameter. In the Bay Area, motor vehicles generate about half of the air basin's particulates, through tailpipe emissions as well as brake pad and tire wear. Wood burning in fireplaces and stoves, industrial facilities, and ground-disturbing activities such as construction are other sources of such fine particulates. These fine particulates are small enough to be inhaled into the deepest parts of the human lung and can cause adverse health effects. According to the California Air Resources Board (ARB), studies in the United States and elsewhere have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks, and studies of children's health in California have demonstrated that particle pollution may significantly reduce lung function growth in children. The ARB also reports that Statewide attainment of particulate matter standards could prevent thousands of premature deaths, lower hospital admissions for cardiovascular and respiratory disease and asthma-related emergency room visits, and avoid hundreds of thousands of episodes of respiratory illness in California.<sup>3</sup>

**(4) Nitrogen Dioxide.** NO<sub>2</sub> is a reddish brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO<sub>2</sub>. Aside from its contribution to ozone formation, NO<sub>2</sub> also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO<sub>2</sub> may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. NO<sub>2</sub> decreases lung function and may reduce resistance to infection. On January 22, 2010, the U.S. Environmental Protection Agency (EPA) strengthened the health-based National Ambient Air Quality Standards (NAAQS) for NO<sub>2</sub>.

**(5) Sulfur Dioxide.** SO<sub>2</sub> is a colorless acidic gas with a strong odor. It is produced by the combustion of sulfur-containing fuels such as oil, coal, and diesel. SO<sub>2</sub> has the potential to damage materials and can cause health effects at high concentrations. It can irritate lung tissue and increase the risk of acute and chronic respiratory disease.<sup>4</sup> SO<sub>2</sub> also reduces visibility and the level of sunlight at the ground surface.

**(6) Lead.** Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources.

<sup>3</sup> California Air Resources Board, 2011. *Fact Sheets*. Website: [www.arb.ca.gov/htm/fslst.htm#Health.pdf](http://www.arb.ca.gov/htm/fslst.htm#Health.pdf). October.

<sup>4</sup> Bay Area Air Quality Management District, 2012, op. cit.

As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery factories.

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the EPA established national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and overall levels of lead in the air decreased dramatically.

**(7) Odors.** Odors are also an important element of local air quality conditions. Specific activities can raise concerns related to odors on the part of nearby neighbors. Major sources of odors include restaurants and manufacturing plants. Other odor producers include the industrial facilities within the region. While sources that generate objectionable odors must comply with air quality regulations, the public's sensitivity to locally-produced odors often exceeds regulatory thresholds.

**(8) Toxic Air Contaminants.** In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. Some examples of TACs include: benzene, butadiene, formaldehyde, and hydrogen sulfide. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

TACs do not have ambient air quality standards, but are regulated by the EPA, ARB, and the Bay Area Air Quality Management District (BAAQMD). In 1998, ARB identified particulate matter from diesel-fueled engines as a TAC. ARB has completed a risk management process that identified potential cancer risks for a range of activities and land uses that are characterized by use of diesel-fueled engines.<sup>5</sup> High-volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truck stops) were identified as posing the highest risk to adjacent receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high volume transit centers, and schools with a high volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

Monitoring data and emissions inventories of TACs help the BAAQMD determine potential health risks to Bay Area residents. Ambient monitoring concentrations of TACs indicate that pollutants emitted primarily from motor vehicles (1,3-butadiene and benzene) account for slightly over 50 percent of the average calculated cancer risk from ambient air in the Bay Area.<sup>6</sup>

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<sup>5</sup> California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October.

<sup>6</sup> Bay Area Air Quality Management District, 2007. *Toxic Air Contaminant Control Program Annual Report 2003 Volume 1*. August.

Unlike TACs emitted from industrial and other stationary sources noted above, most diesel particulate matter is emitted from mobile sources – primarily “off-road” sources such as construction and mining equipment, agricultural equipment, and truck-mounted refrigeration units, as well as trucks and buses traveling on freeways and local roadways.

Agricultural and mining equipment is not commonly used in urban parts of the Bay Area, while construction equipment typically operates for a limited time at various locations. As a result, the readily identifiable locations where diesel particulate matter is emitted in the City of Oakland include high-traffic roadways and other areas with substantial truck traffic.

Although not specifically monitored, recent studies indicate that exposure to diesel particulate matter may contribute significantly to a cancer risk (a risk of approximately 500 to 700 in 1,000,000) that is greater than all other measured TACs combined.<sup>7</sup> The technology for reducing diesel particulate matter emissions from heavy-duty trucks is well established, and both State and federal agencies are moving aggressively to regulate engines and emission control systems to reduce and remediate diesel emissions. ARB anticipates that by 2020 average Statewide diesel particulate matter concentrations will decrease by 85 percent from levels in 2000 with full implementation of the Diesel Risk Reduction Plan, meaning that the Statewide health risk from diesel particulate matter is expected to decrease from 540 cancer cases in 1,000,000 to 21.5 cancer cases in 1,000,000. It is likely that the Bay Area cancer risk from diesel particulate matter will decrease by a similar factor by 2020.

**(9) High Volume Roadways.** Air pollutant exposures and their associated health burdens vary considerably within places in relation to sources of air pollution. Motor vehicle traffic is perhaps the most important source of intra-urban spatial variation in air pollution concentrations. Air quality research consistently demonstrates that pollutant levels are substantially higher near freeways and busy roadways, and human health studies have consistently demonstrated that children living within 100 to 200 meters (328 to 656 feet) of freeways or busy roadways have reduced lung function and higher rates of respiratory disease.<sup>8</sup> At present, it is not possible to attribute the effects of roadway proximity on non-cancer health effects to one or more specific vehicle types or vehicle pollutants. Engine exhaust, from diesel, gasoline, and other combustion engines, is a complex mixture of particles and gases, with collective and individual toxicological characteristics. Four epidemiological studies on roadways and health impacts conducted in California populations are described below.

- In Oakland, California, children at schools in proximity to high volume roadways experienced more asthma and bronchitis symptoms.<sup>9</sup>
- In a low-income population of children in San Diego, children with asthma living within 550 feet of roadways with high traffic volumes were more likely than those residing near roadways with lower traffic volumes to have more medical care visits for asthma.<sup>10</sup>

<sup>7</sup> Bay Area Air Quality Management District, 2007. *Toxic Air Contaminant Control Program Annual Report 2003 Volume 1*. August.

<sup>8</sup> Delfino, R.J., 2002. Epidemiologic Evidence for Asthma and Exposure to Air Toxics: Linkages Between Occupational, Indoor, and Community Air Pollution Research. *Environmental Health Perspectives*.

<sup>9</sup> Kim, J., et al., 2004. Traffic-Related Air Pollution and Respiratory Health: East Bay Children’s Respiratory Health Study. *American Journal of Respiratory and Critical Care Medicine*.

<sup>10</sup> English, P., et al., 1999. Examining Associations Between Childhood Asthma and Traffic Flow Using a Geographic Information System. *Environmental Health Perspectives*.



- In a study of Southern California school children, residence location within 75 meters (246 feet) of a major road was associated with an increased risk of asthma.<sup>11</sup>
- In a study conducted in 12 Southern California communities, children who lived within 500 feet of a freeway had reduced growth in lung capacity compared to those living greater than 1,500 feet from a freeway.<sup>12</sup>

Federal and State regulations control air pollutants at the regional level by limiting vehicle and stationary source emissions. However, air quality regulations have not limited the use of vehicles and generally have not protected sensitive land uses from air pollution “hot spots” associated with proximity to transportation facilities.

**b. Existing Climate and Air Quality.** Regional air quality, local climate, air quality in the San Francisco Bay Area region, and air pollution climatology are described below.

**(1) Regional Air Quality.** The City of Oakland is located in the San Francisco Bay Area, a large shallow air basin ringed by hills that taper into a number of sheltered valleys around the perimeter. Two primary atmospheric outlets exist. One is through the Golden Gate Strait, a direct outlet to the Pacific Ocean. The second outlet extends to the northeast, along the west delta region of the Sacramento and San Joaquin Rivers.

The City of Oakland is within the jurisdiction of the BAAQMD, which regulates air quality in the San Francisco Bay Area. Air quality conditions in the San Francisco Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen dramatically. Exceedances of air quality standards occur primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons.

**(2) Local Climate and Air Quality.** Air quality is a function of both local climate and local sources of air pollution. The amount of a given air pollutant in the atmosphere is determined by the amount of pollutant released and the atmosphere's ability to transport and/or dilute that pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain, and, for photochemical pollutants, sunshine.

The City of Oakland is located in the Northern Alameda and Western Contra Costa Region of the Basin. This climatological subregion stretches from Richmond to San Leandro. Its western boundary is defined by San Francisco Bay and its eastern boundary by the Oakland/Berkeley hills. The Oakland/Berkeley hills have a ridge line height of approximately 1,500 feet, a significant barrier to air flow. The most densely populated area of the subregion lies in a strip of land between San Francisco Bay and the lower hills.

In this area, marine air traveling through the Golden Gate, as well as across San Francisco and through the San Bruno Gap, is a dominant weather factor. The Oakland/Berkeley hills cause the

<sup>11</sup> McConnell, R., et al., 2006. Traffic, Susceptibility, and Childhood Asthma. *Environmental Health Perspectives*.

<sup>12</sup> Gauderman, W.J., et al., 2004. The Effect of Air Pollution on Lung Development From 10 to 18 Years of Age. *New England Journal of Medicine*. September.

westerly flow of air to split off to the north and south of Oakland, which causes diminished wind speeds. The prevailing winds for most of this subregion are from the west. At the northern end, near Richmond, prevailing winds are from the south-southwest.

Temperatures in this subregion have a narrow range due to the proximity of the moderating marine air. The maximum temperatures in summer average in the mid-70s, with minimums in the mid-50s. Winter highs are in the mid- to high-50s, with lows in the low- to mid-40s.

The air pollution potential is lowest for the parts of the subregion that are closest to the bay, due largely to good ventilation and less influx of pollutants from upwind sources. The occurrence of light winds in the evenings and early mornings occasionally causes elevated pollutant levels. The air pollution potential at the northern (Richmond) and southern (Oakland, San Leandro) parts of this subregion is marginally higher than communities directly east of the Golden Gate, because of the lower frequency of strong winds.

This subregion contains a variety of industrial air pollution sources. Some industries are quite close to residential areas. The subregion is also traversed by frequently congested major freeways. Traffic and congestion, and the motor vehicle emissions they generate, are increasing.

Pollutant monitoring results for the years 2010 to 2012 for the Oakland 9925 International Boulevard monitoring station, the closest station to the project site, are shown in **Table IV.E-2**. Where data were not available at this location, the closest monitoring stations to the project site for which data were available were used. Ambient air quality monitoring stations indicate that air quality in the project area has generally been good.

As indicated in the monitoring results, one violation of State PM<sub>10</sub> standard was recorded in 2011; no violations were recorded in 2010 or 2012. No violation of federal PM<sub>10</sub> standard was recorded during the three year period. The federal 24-hour standard for PM<sub>2.5</sub> was exceeded in 2011. The State 1-hour standard was exceeded once in 2010, while the State and federal 8-hour ozone standards have not been exceeded within the past three years at these monitoring stations. Both State and federal standards for CO, NO<sub>2</sub>, and SO<sub>2</sub> were not exceeded in this area during the three-year period according to the available data.

**c. Regulatory Framework.** Air quality standards, the regulatory framework, and State and federal attainment status are discussed below.

**(1) United States Environmental Protection Agency.** At the federal level, the EPA has been charged with implementing national air quality programs. The EPA's air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA), which was enacted in 1963. The FCAA was amended in 1970, 1977, and 1990.

**Table IV.E-2: Ambient Air Quality at the 9925 International Boulevard, Oakland Monitoring Station**

| Pollutant  | Standard                         | 2010  | 2011  | 2012  |
|--|----------------------------------|-------|-------|-------|
| <b>Carbon Monoxide (CO)</b>                                  |                                  |       |       |       |
| Maximum 1-hour concentration (ppm)                           |                                  | 3.0   | 4.1   | 2.9   |
| Number of days exceeded:                                     | State: > 20 ppm                  | 0     | 0     | 0     |
|  | Federal: > 35 ppm                | 0     | 0     | 0     |
| Maximum 8-hour concentration (ppm)                           |                                  | 1.63  | 1.50  | 1.57  |
| Number of days exceeded:                                     | State: > 9 ppm                   | 0     | 0     | 0     |
|  | Federal: > 9 ppm                 | 0     | 0     | 0     |
| <b>Ozone (O<sub>3</sub>)</b>                                 |                                  |       |       |       |
| Maximum 1-hour concentration (ppm)                           |                                  | 0.097 | 0.091 | 0.072 |
| Number of days exceeded:                                     | State: > 0.09 ppm                | 1     | 0     | 0     |
| Maximum 8-hour concentration (ppm)                           |                                  | 0.058 | 0.051 | 0.045 |
| Number of days exceeded:                                     | State: > 0.07 ppm                | 0     | 0     | 0     |
|  | Federal: > 0.08 ppm              | 0     | 0     | 0     |
| <b>Coarse Particulates (PM<sub>10</sub>)<sup>a</sup></b>     |                                  |       |       |       |
| Maximum 24-hour concentration (µg/m <sup>3</sup> )           |                                  | 39.7  | 69.6  | 45.1  |
| Number of days exceeded:                                     | State: > 50 µg/m <sup>3</sup>    | 0     | 1     | 0     |
|  | Federal: > 150 µg/m <sup>3</sup> | 0     | 0     | 0     |
| Annual arithmetic average concentration (µg/m <sup>3</sup> ) |                                  | 16.1  | 19.0  | 15.2  |
| Exceeded for the year:                                       | State: > 20 µg/m <sup>3</sup>    | No    | No    | No    |
|  | Federal: > 50 µg/m <sup>3</sup>  | No    | No    | No    |
| <b>Fine Particulates (PM<sub>2.5</sub>)</b>                  |                                  |       |       |       |
| Maximum 24-hour concentration (µg/m <sup>3</sup> )           |                                  | 25.2  | 49.3  | 33.6  |
| Number of days exceeded:                                     | Federal: > 35 µg/m <sup>3</sup>  | 0     | 3     | 0     |
| Annual arithmetic average concentration (µg/m <sup>3</sup> ) |                                  | 7.7   | 10.1  | 9.4   |
| Exceeded for the year:                                       | State: > 12 µg/m <sup>3</sup>    | No    | No    | No    |
|  | Federal: > 15 µg/m <sup>3</sup>  | No    | No    | No    |
| <b>Nitrogen Dioxide (NO<sub>2</sub>)<sup>b</sup></b>         |                                  |       |       |       |
| Maximum 1-hour concentration (ppm)                           |                                  | 0.064 | 0.057 | 0.065 |
| Number of days exceeded:                                     | State: > 0.250 ppm               | 0     | 0     | 0     |
| Annual arithmetic average concentration (ppm)                |                                  | 0.013 | 0.013 | 0.012 |
| Exceeded for the year:                                       | Federal: > 0.053 ppm             | No    | No    | No    |
| <b>Sulfur Dioxide (SO<sub>2</sub>)</b>                       |                                  |       |       |       |
| Maximum 1-hour concentration (ppm)                           |                                  | 0.011 | 0.019 | 0.068 |
| Number of days exceeded:                                     | State: > 0.25 ppm                | 0     | 0     | 0     |
| Maximum 3-hour concentration (ppm)                           |                                  | ND    | ND    | ND    |
| Number of days exceeded:                                     | Federal: > 0.50 ppm              | ND    | ND    | ND    |
| Maximum 24-hour concentration (ppm)                          |                                  | 0.004 | 0.004 | 0.008 |
| Number of days exceeded:                                     | State: > 0.04 ppm                | 0     | 0     | 0     |
|  | Federal: > 0.14 ppm              | 0     | 0     | 0     |
| Annual arithmetic average concentration (ppm)                |                                  | 0.0   | 0.001 | ND    |
| Exceeded for the year:                                       | Federal: > 0.030 ppm             | No    | No    | ND    |

<sup>a</sup> Results based on readings at the San Pablo – Rumrill Boulevard monitoring station.<sup>b</sup> Results based on readings at 1100 21<sup>st</sup> Street, Oakland monitoring station.

ppm = parts per million

µg/m<sup>3</sup> = micrograms per cubic meter

ND = No data. There was insufficient (or no) data to determine the value.

Source: ARB, EPA, and BAAQMD, 2014.

The FCAA required the EPA to establish primary and secondary NAAQS and required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The Federal Clean Air Act Amendments of 1990 (FCAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The EPA has responsibility to review all state SIPs to determine conformity with the mandates of the FCAAA and determine if implementation will achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area, which imposes additional control measures. Failure to submit an approvable SIP, or to implement the plan within the mandated timeframe, may result in sanctions on transportation funding and stationary air pollution sources in the air basin.

The EPA is also required to develop National Emission Standards for Hazardous Air Pollutants, which are defined as those which may reasonably be anticipated to result in increased deaths or serious illness and which are not already regulated. An independent science advisory board reviews the health and exposure analyses conducted by the EPA on suspected hazardous pollutants prior to regulatory development.

**(2) California Air Resources Board.** In 1992 and 1993, the ARB requested delegation of authority for the implementation and enforcement of specified New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants to the BAAQMD. The EPA's review of the State of California's laws, rules, and regulations showed them to be adequate for the implementation and enforcement of federal standards, and the EPA granted the delegations as requested.

The ARB is the agency responsible for the coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA), adopted in 1988. The CCAA requires that all air districts in the State achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CCAA specifies that districts should focus on reducing the emissions from transportation and air-wide emission sources, and provides districts with the authority to regulate indirect sources.

ARB is also primarily responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. ARB is primarily responsible for Statewide pollution sources and produces a major part of the SIP. Local air districts provide additional strategies for sources under their jurisdiction. ARB combines this data and submits the completed SIP to the EPA.

Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing CAAQS (which in many cases are more stringent than the NAAQS), determining and updating area designations and maps, and setting emissions standards for mobile sources, consumer products, small utility engines, and off-road vehicles. The ARB's Diesel Risk Reduction Plan<sup>13</sup> is intended to substantially reduce diesel particulate matter emissions and associated health risks through introduction of ultra-low-sulfur diesel fuel – a step already implemented – and cleaner-burning diesel engines.

<sup>13</sup> California Air Resources Board, 2000. Stationary Source Division and Mobile Source Control Division. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October.

The State of California's regulatory efforts for toxic air contaminants are embodied in the Tanner Bill<sup>14</sup> (effective 1984), which defines a process for the identification and control of toxic air contaminants. The ARB identifies the most important toxic pollutants by considering risk of harm to public health, amount or potential amount of emissions, manner of usage of the substance, its persistence in the atmosphere, and its concentration in outdoor air. The California Office of Environmental Health Hazard Assessment prepares health assessment documents that outline the toxicity of compounds. After a pollutant is listed as a toxic air contaminant, control measures are developed by the ARB and local air districts.

Other relevant legislation is the Air Toxics “Hot Spots” Information and Assessment Act<sup>15</sup> (AB 2588). This bill was enacted in 1987 with the objective of collecting information concerning industrial emissions of toxic air contaminants and making the information available to the public. The bill established a formal regulatory program for site-specific air toxics emissions inventory and health risk quantification that is managed by California air districts. Under this program, a wide variety of industrial, commercial, and public facilities are required to report the types and quantities of toxic substances their facilities routinely release into the air. The goals of the Air Toxics Hot Spots Program are to collect emissions data, identify facilities with potential for localized health impacts, ascertain health risks, notify nearby residents of risks that are determined to warrant such notification, and reduce significant risks.

Because of evidence relating proximity to roadways and a range of non-cancer and cancer health effects, the ARB also created guidance for avoiding air quality conflicts in land use planning in its *Air Quality and Land Use Handbook: A Community Health Perspective*.<sup>16</sup> In its guidance, the ARB advises that new sensitive uses (e.g., residences, schools, day care centers, playgrounds, and hospitals) not be located within 500 feet of a freeway or urban roads carrying 100,000 vehicles per day, or within 1,000 feet of a distribution center (warehouse) that accommodates more than 100 trucks or more than 90 refrigerator trucks per day. ARB guidance suggests that the use of these guidelines be customized for individual land use decisions, and take into account the context of development projects. The *Air Quality and Land Use Handbook* specifically states that these recommendations are advisory and acknowledges that land use agencies must balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

**(3) National and State Ambient Air Quality Standards.** Pursuant to the FCAA of 1970, the EPA established NAAQS. The NAAQS were established for major pollutants, termed “criteria” pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health.

Both the EPA and the ARB have established ambient air quality standards for the following common pollutants: CO, O<sub>3</sub>, NO<sub>2</sub>, SO<sub>2</sub>, Pb, and PM. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to

<sup>14</sup> California Air Resources Board, 1997. Technical Support Document, *Proposed Identification of Inorganic Lead as a Toxic Air Contaminant. Part A – Exposure Assessment*. March.

<sup>15</sup> AB 2588, Connelly, 1987. Chaptered in the California Health and Safety Code Section 44300, et al.

<sup>16</sup> California Environmental Protection Agency and Air Resources Board, 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*. Website: [www.arb.ca.gov/ch/landuse.htm](http://www.arb.ca.gov/ch/landuse.htm).

protect the health and welfare of the populace with a reasonable margin of safety. These ambient air quality standards are levels of contaminants that avoid specific adverse health effects associated with each pollutant.

Federal standards include both primary and secondary standards. Primary standards establish limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, and damage to animals, crops, vegetation, and buildings.<sup>17</sup> State and federal standards for the criteria air pollutants are listed in **Table IV.E-3**.

**(4) Bay Area Air Quality Management District.** The BAAQMD seeks to attain and maintain air quality conditions in the San Francisco Bay Area Air Basin through a comprehensive program of planning, regulation, enforcement, technical innovation, and education. The clean air strategy includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. The BAAQMD also inspects stationary sources and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by law.

**Clean Air Plan.** The BAAQMD is responsible for developing a Clean Air Plan<sup>18</sup> which guides the region's air quality planning efforts to attain the CAAQS. The BAAQMD's 2010 Clean Air Plan is the latest Clean Air Plan which contains district-wide control measures to reduce ozone precursor emissions (e.g., ROG and NO<sub>x</sub>), particulate matter, and greenhouse gas emissions.

The Bay Area 2010 Clean Air Plan, which was adopted on September 15, 2010 by the BAAQMD's board of directors:

- Updates the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone;
- Provides a control strategy to reduce ozone, PM, TACs, and greenhouse gases in a single, integrated plan;
- Reviews progress in improving air quality in recent years; and
- Establishes emission control measures to be adopted or implemented in the 2010 to 2012 timeframe.

<sup>17</sup> U.S. Environmental Protection Agency, 2007. Website: [www.epa.gov/air/criteria.html](http://www.epa.gov/air/criteria.html). January.

<sup>18</sup> Bay Area Air Quality Management District, 2010. *Bay Area 2010 Clean Air Plan*. September.

**Table IV.E-3: State and Federal Ambient Air Quality Standards**

| Pollutant   | Averaging Time                       | California Standards <sup>a</sup>   |   | Federal Standards <sup>b</sup>                         |                                   |   |
|---|--------------------------------------|---|---|--|-----------------------------------|---|
|   |                                      | Concentration <sup>c</sup>  | Method <sup>d</sup>                       | Primary <sup>c,e</sup>                                 | Secondary <sup>c,f</sup>          | Method <sup>g</sup>   |
| Ozone (O <sub>3</sub> )                           | 1-Hour                               | 0.09 ppm (180 µg/m <sup>3</sup> )   | Ultraviolet Photometry                    | -  | Same as Primary Standard          | Ultraviolet Photometry  |
|   | 8-Hour                               | 0.07 ppm (137 µg/m <sup>3</sup> )   |   | 0.075 ppm (147 µg/m <sup>3</sup> )                     |                                   |   |
| Respirable Particulate Matter (PM <sub>10</sub> ) | 24-Hour                              | 50 µg/m <sup>3</sup>  | Gravimetric or Beta Attenuation           | 150 µg/m <sup>3</sup>                                  | Same as Primary Standard          | Inertial Separation and Gravimetric Analysis                        |
|   | Annual Arithmetic Mean               | 20 µg/m <sup>3</sup>  |   | —  |                                   |   |
| Fine Particulate Matter (PM <sub>2.5</sub> )      | 24-Hour                              | —   |   | 35 µg/m <sup>3</sup>                                   | Same as Primary Standard          | Inertial Separation and Gravimetric Analysis                        |
|   | Annual Arithmetic Mean               | 12 µg/m <sup>3</sup>  | Gravimetric or Beta Attenuation           | 12 µg/m <sup>3</sup>                                   | 15 µg/m <sup>3</sup>              |   |
| Carbon Monoxide (CO)                              | 8-Hour                               | 9.0 ppm (10 mg/m <sup>3</sup> )   | Non-Dispersive Infrared Photometry (NDIR) | 9 ppm (10 mg/m <sup>3</sup> )                          | —                                 | Non-Dispersive Infrared Photometry (NDIR)                           |
|   | 1-Hour                               | 20 ppm (23 mg/m <sup>3</sup> )  |   | 35 ppm (40 mg/m <sup>3</sup> )                         | —                                 |   |
|   | 8-Hour (Lake Tahoe)                  | 6 ppm (7 mg/m <sup>3</sup> )  |   | —  | —                                 |   |
| Nitrogen Dioxide (NO <sub>2</sub> ) <sup>h</sup>  | Annual Arithmetic Mean               | 0.030 ppm (57 µg/m <sup>3</sup> )   | Gas Phase Chemiluminescence               | 0.053 ppb (100 µg/m <sup>3</sup> )                     | Same as Primary Standard          | Gas Phase Chemiluminescence   |
|   | 1-Hour                               | 0.18 ppm (339 µg/m <sup>3</sup> )   |   | 100 ppb (188 µg/m <sup>3</sup> )                       | —                                 |   |
| Lead (Pb) <sup>j,k</sup>                          | 30-day Average                       | 1.5 µg/m <sup>3</sup>   | Atomic Absorption                         | —  | —                                 | High-Volume Sampler and Atomic Absorption                           |
|   | Calendar Quarter                     | —   |   | 1.5 µg/m <sup>3</sup> (for certain areas) <sup>k</sup> | Same as Primary Standard          |   |
|   | Rolling 3-Month Average <sup>i</sup> | —   |   | 0.15 µg/m <sup>3</sup>                                 |                                   |   |
| Sulfur Dioxide (SO <sub>2</sub> ) <sup>i</sup>    | 24-Hour                              | 0.04 ppm (105 µg/m <sup>3</sup> )   | Ultraviolet Fluorescence                  | 0.14 ppm (for certain areas) <sup>i</sup>              | —                                 | Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method) |
|   | 3-Hour                               | —   |   | —  | 0.5 ppm (1300 µg/m <sup>3</sup> ) |   |
|   | 1-Hour                               | 0.25 ppm (655 µg/m <sup>3</sup> )   |   | 75 ppb (196 µg/m <sup>3</sup> )                        | —                                 |   |
|   | Annual Arithmetic Mean               | —   |   | 0.030 ppm (for certain areas) <sup>i</sup>             | —                                 |   |
| Visibility-Reducing Particles <sup>l</sup>        | 8-Hour                               | Extinction coefficient of 0.23 per kilometer - visibility of 10 miles or more (0.07–30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape. |   | No Federal Standards                                   |                                   |   |
| Sulfates  | 24-Hour                              | 25 µg/m <sup>3</sup>  | Ion Chromatography                        |  |                                   |   |
| Hydrogen Sulfide                                  | 1-Hour                               | 0.03 ppm (42 µg/m <sup>3</sup> )  | Ultraviolet Fluorescence                  |  |                                   |   |
| Vinyl Chloride <sup>j</sup>                       | 24-Hour                              | 0.01 ppm (26 µg/m <sup>3</sup> )  | Gas Chromatography                        |  |                                   |   |

Table notes continued on next page.



- <sup>a</sup> California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, suspended particulate matter (PM<sub>10</sub>, PM<sub>2.5</sub>, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- <sup>b</sup> National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM<sub>10</sub>, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m<sup>3</sup> is equal to or less than one. For PM<sub>2.5</sub>, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current federal policies.
- <sup>c</sup> Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- <sup>d</sup> Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
- <sup>e</sup> National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- <sup>f</sup> National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- <sup>g</sup> Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.
- <sup>h</sup> To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb are identical to 0.100 ppm.
- <sup>i</sup> On June 2, 2010, a new 1-hour SO<sub>2</sub> standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO<sub>2</sub> national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standards to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
- <sup>j</sup> The ARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
- <sup>k</sup> The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m<sup>3</sup> as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
- <sup>l</sup> In 1989, the ARB converted both the general Statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and “extinction of 0.07 per kilometer” for the Statewide and Lake Tahoe Air Basin standards, respectively.

°C = degrees Celsius

ARB = California Air Resources Board

EPA = United States Environmental Protection Agency

µg/m<sup>3</sup> = micrograms per cubic meter

mg/m<sup>3</sup> = milligrams per cubic meter

ppm = parts per million

ppb = parts per billion

Source: ARB, December, 2013.

**BAAQMD CARE Program.** The Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area. The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program is being implemented in three phases that include an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TACs, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and a high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. The BAAQMD has identified six affected communities: Concord, eastern San Francisco, western Alameda County (including much of the City of Oakland), Redwood City/East Palo Alto, and San Jose. These communities have all been identified as in need of immediate mitigation action.

For commercial and industrial sources, the BAAQMD regulates TACs using a risk-based approach. This approach uses a health risk assessment to determine what sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated and considered together with information regarding the toxic potency of the substances, in order to provide a quantitative estimate of health risks.<sup>19</sup> As part of ongoing efforts to identify and assess potential health risks to the public, the BAAQMD has collected and compiled air toxics emissions data from industrial and commercial sources of air pollution throughout the Bay Area.

**BAAQMD CEQA Air Quality Guidelines.** The BAAQMD *CEQA Air Quality Guidelines* were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures and background air quality information. They also include assessment methodologies for air toxics, odors and greenhouse gas emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of their *CEQA Guidelines*. In May 2011, the updated BAAQMD *CEQA Air Quality Guidelines* were amended to include a risk and hazards threshold for new receptors and modify procedures for assessing impacts related to risk and hazard impacts. In May 2012, in response to pending litigation, the BAAQMD released the 2012 *CEQA Air Quality Guidelines* which do not include recommendations for thresholds of significance.<sup>20</sup>

<sup>19</sup> In general, a health risk assessment is required if the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggests a potential public health risk. Such an assessment generally evaluates chronic, long-term effects, including the increased risk of cancer as a result of exposure to one or more TACs.

<sup>20</sup> On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance in the 2011 BAAQMD *CEQA Air Quality Guidelines*. The court issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD complied with CEQA. On May 4, 2012, BAAQMD commenced an appeal in the First District of the California Court of Appeal seeking to overturn the Alameda County Superior Court decision. In August of 2013 the First District Court of Appeal overturned the trial court and held that the thresholds of significance were not subject to CEQA review. The decision of the First District Court of Appeal is currently pending before the California Supreme Court, although the specific issue taken up by the court is whether CEQA requires an analysis of how existing environmental conditions will impact future residents or users of a proposed project. The BAAQMD has not reinstated the 2011 Guidelines.

(5) **Attainment Status Designations.** The ARB is required to designate areas of the State as attainment, nonattainment, or unclassified for each State standard. An “attainment” designation for an area signifies that pollutant concentrations did not violate pollutant standards. A “nonattainment” designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An “unclassified” designation signifies that data do not support either an attainment or nonattainment status. The law divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The EPA designates areas for ozone, CO, and NO<sub>2</sub> as “does not meet the primary standards,” “cannot be classified,” or “is better than national standards.” For SO<sub>2</sub>, areas are designated as “does not meet the primary standards,” “does not meet the secondary standards,” “cannot be classified” or “is better than national standards.” In 1991, new nonattainment designations were assigned to areas for PM<sub>10</sub> based on the likelihood that they would violate national PM<sub>10</sub> standards. All other areas are designated “unclassified.” **Table IV.E-4** provides a summary of the attainment status for the San Francisco Bay Area with respect to national and State ambient air quality standards.

(6) **Local Regulations.** The City of Oakland has policies related to air quality in the City’s General Plan and the Standard Conditions of Approval as described below.

**City of Oakland General Plan Air Quality Policies.** The Open Space Conservation and Recreation (OSCAR) element of the City of Oakland’s General Plan includes the following policies related to air quality;

- **Objective CO-12: Air Resources.** To improve air quality in Oakland and the surrounding Bay Region.
- **Policy CO-12.1: Land Use Patterns Which Promote Air Quality.** Promote land use patterns and densities which help improve regional air quality conditions by: (a) minimizing dependence on single passenger autos; (b) promoting projects which minimize quick auto starts and stops, such as live-work development, mixed use development, and office development with ground floor retail space; (c) separating land uses which are sensitive to pollution from the sources of air pollution; and (d) supporting telecommuting, flexible work hours, and behavioral changes which reduce the percentage of people in Oakland who must drive to work on a daily basis.
- **Policy CO-12.4: Design of Development to Minimize Air Quality Impacts.** Require that development projects be designed in a manner which reduces potential adverse air quality impacts. This may include: (a) the use of vegetation and landscaping to absorb carbon monoxide and to buffer sensitive receptors; (b) the use of low-polluting energy sources and energy conservation measures; and (c) designs which encourage transit use and facilitate bicycle and pedestrian travel.
- **Policy CO-12.5: Use of best available control technology.** Require new industry to use best available control technology to remove pollutants, including filtering, washing, or electrostatic treatment of emissions
- **Policy CO-12.6: Control of Dust Emissions.** Require construction, demolition and grading practices which minimize dust emissions.

**Table IV.E-4: Bay Area Air Quality Standards and Attainment Status**

| Pollutant  | Averaging Time         | California Standards <sup>a</sup>     |                            | National Standards <sup>b</sup>       |                             |
|--|------------------------|---------------------------------------|----------------------------|---------------------------------------|-----------------------------|
|  |                        | Concentration                         | Attainment Status          | Concentration <sup>c</sup>            | Attainment Status           |
| <b>Ozone</b><br>(O <sub>3</sub> )                        | 8-Hour                 | 0.070 ppm<br>(137 µg/m <sup>3</sup> ) | Nonattainment <sup>i</sup> | 0.075 ppm                             | Nonattainment <sup>d</sup>  |
|  | 1-Hour                 | 0.09 ppm<br>(180 µg/m <sup>3</sup> )  | Nonattainment              | Not Applicable                        | Not Applicable <sup>e</sup> |
| <b>Carbon Monoxide</b> (CO)                              | 8-Hour                 | 9.0 ppm<br>(10 mg/m <sup>3</sup> )    | Attainment                 | 9 ppm<br>(10 mg/m <sup>3</sup> )      | Attainment <sup>f</sup>     |
|  | 1-Hour                 | 20 ppm<br>(23 mg/m <sup>3</sup> )     | Attainment                 | 35 ppm<br>(40 mg/m <sup>3</sup> )     | Attainment                  |
| <b>Nitrogen Dioxide</b><br>(NO <sub>2</sub> )            | 1-Hour                 | 0.18 ppm<br>(339 µg/m <sup>3</sup> )  | Attainment                 | 0.100 ppb <sup>k</sup>                | Unclassified                |
|  | Annual Arithmetic Mean | 0.030 ppm<br>(57 µg/m <sup>3</sup> )  | Not Applicable             | 0.053 ppm<br>(100 µg/m <sup>3</sup> ) | Attainment                  |
| <b>Sulfur Dioxide</b><br>(SO <sub>2</sub> ) <sup>l</sup> | 24-Hour                | 0.04 ppm<br>(105 µg/m <sup>3</sup> )  | Attainment                 | 0.14 ppm<br>(365 µg/m <sup>3</sup> )  | Attainment                  |
|  | 1-Hour                 | 0.25 ppm<br>(655 µg/m <sup>3</sup> )  | Attainment                 | 0.075 ppm<br>(196 µg/m <sup>3</sup> ) | Attainment                  |
|  | Annual Arithmetic Mean | Not Applicable                        | Not Applicable             | 0.030 ppm<br>(80 µg/m <sup>3</sup> )  | Attainment                  |
| <b>Particulate Matter</b><br>Coarse (PM <sub>10</sub> )  | Annual Arithmetic Mean | 20 µg/m <sup>3</sup>                  | Nonattainment <sup>g</sup> | Not Applicable                        | Not Applicable              |
|  | 24-Hour                | 50 µg/m <sup>3</sup>                  | Nonattainment              | 150 µg/m <sup>3</sup>                 | Unclassified                |
| <b>Particulate Matter</b><br>Fine (PM <sub>2.5</sub> )   | Annual Arithmetic Mean | 12 µg/m <sup>3</sup>                  | Nonattainment <sup>g</sup> | 12 µg/m <sup>3</sup>                  | Attainment                  |
|  | 24-Hour                | Not Applicable                        | Not Applicable             | 35 µg/m <sup>3</sup> <sup>j</sup>     | Nonattainment               |

<sup>a</sup> California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM<sub>10</sub>, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equalled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM<sub>10</sub> annual standard), then some measurements may be excluded. In particular, measurements are excluded that ARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.

<sup>b</sup> National standards shown are the “primary standards” designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the fourth highest daily concentrations is 0.075 ppm (75 ppb) or less. The 24-hour PM<sub>10</sub> standard is attained when the 3-year average of the 99<sup>th</sup> percentile of monitored concentrations is less than 150 µg/m<sup>3</sup>. The 24-hour PM<sub>2.5</sub> standard is attained when the 3-year average of 98<sup>th</sup> percentiles is less than 35 µg/m<sup>3</sup>.

<sup>c</sup> Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM<sub>10</sub> is met if the 3-year average falls below the standard at every site. The annual PM<sub>2.5</sub> standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.

<sup>d</sup> National air quality standards are set by the EPA at levels determined to be protective of public health with an adequate margin of safety.

<sup>e</sup> Final designations effective July 20, 2012.

<sup>f</sup> The national 1-hour ozone standard was revoked by the EPA on June 15, 2005.

<sup>g</sup> In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.

<sup>h</sup> In June 2002, ARB established new annual standards for PM<sub>2.5</sub> and PM<sub>10</sub>.

(Table notes continued on next page.)

- <sup>i</sup> The 8-hour CA ozone standard was approved by the Air Resources Board on April 28, 2005, and became effective on May 17, 2006.
- <sup>j</sup> On January 9, 2013, the EPA issued a final rule to determine that the Bay Area attains the 24-hour PM<sub>2.5</sub> national standard. This EPA rule suspends key SIP requirements as long as monitoring data continues to show that the Bay Area attains the standard. Despite this EPA action, the Bay Area will continue to be designated as “non-attainment” for the national 24-hour PM<sub>2.5</sub> standard until such time as the Air District submits a “redesignation request” and a “maintenance plan” to the EPA, and the EPA approves the proposed redesignation.
- <sup>k</sup> To attain this standard, the 3-year average of the 98<sup>th</sup> percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100ppm (effective January 22, 2010).
- <sup>l</sup> On June 2, 2010, the EPA established a new 1-hour SO<sub>2</sub> standard, effective August 23, 2010, which is based on the 3-year average of the annual 99<sup>th</sup> percentile of 1-hour daily maximum concentrations.

Lead (Pb) is not listed in the above table because it has been in attainment since the 1980s.

ppm = parts per million

mg/m<sup>3</sup> = milligrams per cubic meter

µg/m<sup>3</sup> = micrograms per cubic meter

Source: Bay Area Air Quality Management District, Air Quality Standards and Attainment Status, 2013.

**City of Oakland Municipal Code.** Pursuant to the City of Oakland Municipal Code, Title 15 Buildings and Construction, Chapter 15.36 Demolition Permits, 15.36.100 Dust Control Measures: ‘Best Management Practices’ shall be used throughout all phases of work, including suspension of work, to alleviate or prevent fugitive dust nuisance and the discharge of smoke or any other air contaminants into the atmosphere in such quantity as will violate any city or regional air pollution control rules, regulations, ordinances, or statutes. Water or dust palliatives or combinations of both shall be applied continuously and in sufficient quantity during the performance of work and at other times as required. Dust nuisance shall also be abated by cleaning and sweeping or other means as necessary. A dust control plan may be required as condition of permit issuance or at other times as may be deemed necessary to assure compliance with this section. Failure to control effectively or abate fugitive dust nuisance or the discharge of smoke or any other air contaminants into the atmosphere may result in suspension or revocation of the permit, in addition to any other applicable enforcement actions or remedies.<sup>21</sup> (Ord. 12152 § 1, 1999).

**City of Oakland’s Standard Conditions of Approval.** The City’s Standard Conditions of Approval (SCA) relevant to this impact topic are listed below for reference. The Conditions of Approval would be adopted as requirements of the proposed project if the project is approved by the City.

**SCA AIR-1: Construction-Related Air Pollution Controls (Dust and Equipment Emissions).** *Ongoing throughout demolition, grading, and/or construction.*

During construction, the project applicant shall require the construction contractor to implement all of the following applicable measures recommended by the Bay Area Air Quality Management District (BAAQMD):

- a) Water all exposed surfaces of active construction areas at least twice daily (using reclaimed water if possible). Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible.

<sup>21</sup> Oakland, City of, 2008. Ord. 12152 § 1, 1999.

- b) Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
- c) All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- d) Pave all roadways, driveways, sidewalks, etc. as soon as feasible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- e) Enclose, cover, water twice daily or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.).
- f) Limit vehicle speeds on unpaved roads to 15 miles per hour.
- g) Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485, of the California Code of Regulations. Clear signage to this effect shall be provided for construction workers at all access points.
- h) All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- i) Post a publicly visible sign that includes the contractor's name and telephone number to contact regarding dust complaints. When contacted, the contractor shall respond and take corrective action within 48 hours. The telephone numbers of contacts at the City and the BAAQMD shall also be visible. This information may be posted on other required on-site signage.
- j) All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
- k) All excavation, grading, and demolition activities shall be suspended when average wind speeds exceed 20 mph.
- l) Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- m) Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for one month or more).
- n) Designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress.
- o) Install appropriate wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of the construction site to minimize wind-blown dust. Wind breaks must have a maximum 50 percent air porosity.
- p) Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- q) The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
- r) All trucks and equipment, including tires, shall be washed off prior to leaving the site.
- s) Site accesses to a distance of 100 feet from the paved road shall be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel.
- t) Minimize the idling time of diesel-powered construction equipment to two minutes.

- u) The project applicant shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NO<sub>x</sub> reduction and 45 percent particulate matter (PM) reduction compared to the most recent California Air Resources Board (ARB) fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as they become available.
- v) Use low VOC (e.g., ROG) coatings beyond the local requirements (e.g., BAAQMD Regulation 8, Rule 3: Architectural Coatings).
- w) All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NO<sub>x</sub> and PM.
- x) Off-road heavy diesel engines shall meet the ARB's most recent certification standard.

**SCA AIR-2: Exposure to Air Pollution (Toxic Air Contaminants: Particulate Matter).** *Prior to issuance of a demolition, grading, or building permit*

- A. Indoor Air Quality: In accordance with the recommendations of the California Air Resources Board (ARB) and the Bay Area Air Quality Management District, appropriate measures shall be incorporated into the project design in order to reduce the potential health risk due to exposure to diesel particulate matter to achieve an acceptable interior air quality level for sensitive receptors. The appropriate measures shall include one of the following methods:
  - 1. The project applicant shall retain a qualified air quality consultant to prepare a health risk assessment (HRA) in accordance with the ARB and the Office of Environmental Health and Hazard Assessment requirements to determine the exposure of project residents/occupants/users to air pollutants prior to issuance of a demolition, grading, or building permit. The HRA shall be submitted to the Planning and Zoning Division for review and approval. The applicant shall implement the approved HRA recommendations, if any. If the HRA concludes that the air quality risks from nearby sources are at or below acceptable levels, then additional measures are not required.
  - 2. The applicant shall implement all of the following features that have been found to reduce the air quality risk to sensitive receptors and shall be included in the project construction plans. These features shall be submitted to the Planning and Zoning Division and the Building Services Division for review and approval prior to the issuance of a demolition, grading, or building permit and shall be maintained on an ongoing basis during operation of the project.
    - a) Redesign the site layout to locate sensitive receptors as far as possible from any freeways, major roadways, or other sources of air pollution (e.g., loading docks, parking lots).
    - b) Do not locate sensitive receptors near distribution center's entry and exit points.
    - c) Incorporate tiered plantings of trees (redwood, deodar cedar, live oak, and/or oleander) to the maximum extent feasible between the sources of pollution and the sensitive receptors.
    - d) Install, operate and maintain in good working order a central heating and ventilation (HV) system or other air take system in the building, or in each individual residential unit, that meets or exceeds an efficiency standard of MERV 13. The HV system shall include the following features: Installation of a high efficiency filter and/or carbon filter to filter particulates and other chemical matter from entering the building. Either HEPA filters or ASHRAE 85 percent supply filters shall be used.
    - e) Retain a qualified HV consultant or HERS rater during the design phase of the project to locate the HV system based on exposure modeling from the pollutant sources.

- f) Install indoor air quality monitoring units in buildings.
  - g) Project applicant shall maintain, repair and/or replace HV system on an ongoing and as needed basis or shall prepare an operation and maintenance manual for the HV system and the filter. The manual shall include the operating instructions and the maintenance and replacement schedule. This manual shall be included in the CC&Rs for residential projects and distributed to the building maintenance staff. In addition, the applicant shall prepare a separate homeowners manual. The manual shall contain the operating instructions and the maintenance and replacement schedule for the HV system and the filters.
- B. Outdoor Air Quality: To the maximum extent practicable, individual and common exterior open space, including playgrounds, patios, and decks, shall either be shielded from the source of air pollution by buildings or otherwise buffered to further reduce air pollution for project occupants.

**SCA AIR-3: Exposure to Air Pollution (Toxic Air Contaminants: Gaseous Emissions).** *Prior to issuance of a demolition, grading, or building permit*

- A. Indoor Air Quality: In accordance with the recommendations of the California Air Resources Board (ARB) and the Bay Area Air Quality Management District, appropriate measures shall be incorporated into the project design in order to reduce the potential risk due to exposure to toxic air contaminants to achieve an acceptable interior air quality level for sensitive receptors. The project applicant shall retain a qualified air quality consultant to prepare a health risk assessment (HRA) in accordance with the ARB and the Office of Environmental Health and Hazard Assessment requirements to determine the exposure of project residents/occupants/users to air pollutants prior to issuance of a demolition, grading, or building permit. The HRA shall be submitted to the Planning and Zoning Division for review and approval. The applicant shall implement the approved HRA recommendations, if any. If the HRA concludes that the air quality risks from nearby sources are at or below acceptable levels, then additional measures are not required.
- B. Exterior Air Quality: To the maximum extent practicable, individual and common exterior open space, including playgrounds, patios, and decks, shall either be shielded from the source of air pollution by buildings or otherwise buffered to further reduce air pollution for project occupants.

## 2. Impacts and Mitigation Measures

This section provides an assessment of the potential adverse impacts related to air quality associated with the proposed project. It begins with the thresholds of significance, which establish the thresholds for determining whether an impact is significant. The latter part of this section identifies potential impacts. Where potentially significant impacts are identified, mitigation measures are recommended.

**a. Significance Thresholds.** The proposed project would have a significant impact on the environment related to air quality if it would:<sup>22,23</sup>

- (1) During project construction result in average daily emissions of 54 pounds per day of ROG, NO<sub>x</sub>, or PM<sub>2.5</sub> or 82 pounds per day of PM<sub>10</sub>;

<sup>22</sup> The thresholds that pertain to the effect of the environment on the project (as compared to the project's impact on the environment) are not legally required to be analyzed under CEQA but are nevertheless evaluated in order to provide information to decision-makers and the public.

<sup>23</sup> The thresholds related to criteria air pollutants pertain to impacts that are, by their nature, cumulative impacts because one project by itself cannot generate air pollution that would violate regional air quality standards. Thresholds 1 through 3 pertain to a project's contribution to cumulative impacts but are labeled "Project-Level Impacts" here to be consistent with the terminology used by BAAQMD.



- (2) During project operation result in average daily emissions of 54 pounds per day of ROG, NO<sub>x</sub>, or PM<sub>2.5</sub> or 82 pounds per day of PM<sub>10</sub>; or result in maximum annual emissions of 10 tons per year of ROG, NO<sub>x</sub>, or PM<sub>2.5</sub> or 15 tons per year of PM<sub>10</sub>;
- (3) Contribute to carbon monoxide (CO) concentrations exceeding the California Ambient Air Quality Standards (CAAQS) of nine parts per million (ppm) averaged over eight hours and 20 ppm for one hour;<sup>24</sup>
- (4) For new sources of Toxic Air Contaminants (TACs), during either project construction or project operation, expose sensitive receptors to substantial levels of TACs under project conditions resulting in (a) an increase in cancer risk level greater than 10 in one million, (b) a non-cancer risk (chronic or acute) hazard index greater than 1.0, or (c) an increase of annual average PM<sub>2.5</sub> of greater than 0.3 micrograms per cubic meter; or, under cumulative conditions, resulting in (a) a cancer risk level greater than 100 in a million, (b) a non-cancer risk (chronic or acute) hazard index greater than 10.0, or (c) annual average PM<sub>2.5</sub> of greater than 0.8 micrograms per cubic meter;<sup>25</sup>
- (5) Expose new sensitive receptors to substantial ambient levels of Toxic Air Contaminants (TACs) resulting in (a) a cancer risk level greater than 100 in a million, (b) a non-cancer risk (chronic or acute) hazard index greater than 10.0, or (c) annual average PM<sub>2.5</sub> of greater than 0.8 micrograms per cubic meter;<sup>26</sup> or
- (6) Frequently and for a substantial duration, create or expose sensitive receptors to substantial objectionable odors affecting a substantial number of people.<sup>27</sup>

For additional thresholds related to air emissions, see Section IV.F, Greenhouse Gas Emissions, for Greenhouse Gas Emissions and the Section IV.J, Hazards for Hazards and Hazardous Materials.

**b. Project Impacts** This section discusses the air quality impacts related to implementation of the project.

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<sup>24</sup> Pursuant to BAAQMD CEQA Guidelines, localized CO concentrations should be estimated for projects in which (a) project-generated traffic would conflict with an applicable congestion management program established by the county congestion management agency or (b) project-generated traffic would increase traffic volumes at affected intersections to more than 44,000 vehicles per hour (or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited, such as tunnels, parking garages, bridge underpasses, natural or urban street canyons, and below-grade roadways). In Oakland, only the MacArthur Maze portion of Interstate 580 exceeds the 44,000 vehicles per hour screening criteria.

<sup>25</sup> Pursuant to the BAAQMD CEQA Guidelines, when siting new TAC sources consider receptors located within 1,000 feet. For this threshold, sensitive receptors include residential uses, schools, parks, daycare centers, nursing homes, and medical centers. The cumulative analysis should consider the combined risk from all TAC sources.

<sup>26</sup> Pursuant to the BAAQMD CEQA Guidelines when siting new sensitive receptors consider TAC sources located within 1,000 feet including, but not limited to, stationary sources, freeways, major roadways (10,000 or greater vehicles per day), truck distribution centers, airports, seaports, ferry terminals, and rail lines. For this threshold sensitive receptors include residential uses, schools, parks, daycare centers, nursing homes, and medical centers.

<sup>27</sup> For this threshold, sensitive receptors include residential uses, schools, daycare centers, parks, nursing homes, and medical centers.

(1) **Construction Emissions.** During construction, short-term degradation of air quality may occur due to the release of particulate matter emissions generated by excavation, grading, hauling, and other activities. Emissions from construction equipment are also anticipated and would include CO, NO<sub>x</sub>, ROG, directly-emitted particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>), and TACs such as diesel exhaust particulate matter.

Site preparation and project construction would involve demolition of the existing structures on the project site, clearing, cut-and-fill activities, grading, and building activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling, and transport of soils on the site. If not properly controlled, these activities would temporarily generate PM<sub>10</sub>, PM<sub>2.5</sub>, and to a lesser extent CO, SO<sub>2</sub>, NO<sub>x</sub>, and volatile organic compounds. Sources of fugitive dust would include disturbed soils at the construction sites and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM<sub>10</sub> emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM<sub>10</sub> emissions would depend on soil moisture, the silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site. These emissions would be temporary and limited to the immediate area surrounding the construction sites.

**Analysis Methodology.** Construction emissions were estimated for demolition and construction using the California Emissions Estimator Model (CalEEMod v.2013.2.2) for fugitive emissions and ROG from architectural coatings/paving and construction equipment by type and duration of use. Emission factors by equipment type were estimated using ARB's EMFAC 2011 model and the EPA's off-road engine Tier Standards (Code of Federal Regulations Title 40 Part 1039.102), in conjunction with the brake horse powers by equipment type identified in CalEEMod. Renovation emissions were estimated by first estimating the total amount of debris that would be generated by the project, then by using CalEEMod to generate the estimated number of truck trips based on the debris estimates. Emissions were then calculated using EMFAC2011 to determine total emissions associated with renovation activities. Unlike other areas where impacts from phasing are additive, construction emissions are evaluated based on average daily emissions for the construction period. Phase 1 and Phase 2 (see Project Description Tables III-5 and III-6) need to happen sequentially; they could not overlap. Construction of OPC2 (Phase 1) is required to allow for the relocation of existing services from the D&T Building, 1982 Tower and B/C Wing, and allow for the demolition activities proposed in Phase 2. Therefore, for purposes of this analysis, construction emissions for Phase 1 and Phase 2 are evaluated independently, they are not added together. Construction emission calculation details are provided in Appendix E.

**Phase 1 Impacts.** Phase 1 would include the demolition of approximately 1,541 square feet of use, construction of the approximately 89,100 square-foot Outpatient Center Building (OPC2), a new entrance to the parking garage and an expansion of the central utility plant. Phase 1 would also include interior hospital renovations. Total project construction is anticipated to take 58 months. Construction-related emissions are presented in **Table IV.E-5**. Detailed calculations are provided in Appendix E. As shown in **Table IV.E-5**, construction emissions of ozone precursors (ROG and NO<sub>x</sub>) would not exceed the BAAQMD's threshold for average daily construction emissions.

Through their Standard Conditions of Approval, the City has established measures for reducing fugitive dust emissions (PM<sub>2.5</sub> and PM<sub>10</sub>) including the use of water or other soil stabilizers. Implementation of SCA AIR-1 would require implementation of the BAAQMD's Best Management Practices and additional measures to reduce diesel PM exhaust emissions and other construction pollutants. Implementation of this Standard Condition of Approval would further reduce PM emissions to a less-than-significant level.<sup>28</sup>

**Phase 2 Impacts.** Phase 2 of the project would include demolition of approximately 65,041 square feet of building space. Construction during Phase 2 would include construction of the Family Residence Building, the Clinical Support Building, the Link Building, the Helistop, the Patient Pavilion, the Central Utility Plant and the new Parking Structure (a total of 309,000 square feet). Interior hospital renovations would also continue during Phase 2 of the project. Phase 2 would begin in 2020 and would take approximately 60 months. Average daily construction-related emissions for Phase 2 are presented in **Table IV.E-6**. Detailed calculations are provided in Appendix E. Results indicate Phase 2 of project construction would not exceed the average daily construction emission standards. In addition, the proposed project would be subject to SCA AIR-1, which would further reduce PM emissions to a less-than-significant level.

## (2) Operational Emissions.

According to the City of Oakland's CEQA Thresholds, for operational-related criteria air pollutant and air precursor impacts, the project must not generate operational emissions of ROG, NO<sub>x</sub> or PM<sub>2.5</sub> of greater than 10 tons per year or 54 pounds per day or PM<sub>10</sub> emissions greater than 15 tons per year or 82 pounds per day. The project would generate long-term air emissions associated with changes in the permanent use of the project site. These long-term emissions are primarily mobile source emissions that would result from vehicle trips associated with the proposed project. Area sources, such as natural gas heaters, landscape equipment, and to a much lesser extent the use of consumer products such as pressurized air canisters would also result in pollutant emissions.

<sup>28</sup> BAAQMD, 2012, op. cit.

**Table IV.E-5: Phase 1 Project Construction Emissions in Pounds Per Day**

| Project Construction                                 | ROG       | NO <sub>x</sub> | Exhaust PM <sub>2.5</sub> | Exhaust PM <sub>10</sub> |
|--|-----------|-----------------|---------------------------|--------------------------|
| Average Daily Exhaust Emissions <sup>a</sup>         | 3.4       | 15.1            | 1.3                       | 1.3                      |
| Average Daily Architectural Coating/Paving Emissions | 6.4       | NA              | NA                        | NA                       |
| <b>Total Construction Emissions</b>                  | 9.8       | 15.1            | 1.3                       | 1.3                      |
| Thresholds   | 54.0      | 54.0            | 54.0                      | 82.0                     |
| <b>Exceed Threshold?</b>                             | <b>No</b> | <b>No</b>       | <b>No</b>                 | <b>No</b>                |

<sup>a</sup> Emissions reported for the year of highest level of construction activity.

NA = Not Applicable

Source: LSA Associates, Inc., 2014.

**Table IV.E-6: Phase 2 Project Construction Emissions in Pounds Per Day**

| Project Construction                                 | ROG       | NO <sub>x</sub> | Exhaust PM <sub>2.5</sub> | Exhaust PM <sub>10</sub> |
|--|-----------|-----------------|---------------------------|--------------------------|
| Average Daily Exhaust Emissions <sup>a</sup>         | 5.4       | 49.7            | 1.6                       | 1.6                      |
| Average Daily Architectural Coating/Paving Emissions | 17.8      | NA              | NA                        | NA                       |
| <b>Total Construction Emissions</b>                  | 23.2      | 49.7            | 1.6                       | 1.6                      |
| Thresholds   | 54.0      | 54.0            | 54.0                      | 82.0                     |
| <b>Exceed Threshold?</b>                             | <b>No</b> | <b>No</b>       | <b>No</b>                 | <b>No</b>                |

<sup>a</sup> Emissions reported for the year of highest level of construction activity.

NA = Not Applicable

Source: LSA Associates, Inc., 2014.

*Existing On-Site Emissions.* The existing CHRCO campus includes approximately 692,416 square feet of building space on 11 acres. The CalEEMod air emissions model, which the BAAQMD approves for use in estimating emissions associated with land use development projects, was used to calculate long-term mobile and area source emissions for existing on-site emissions. CalEEMod output sheets are included in Appendix E of this EIR.

As described in Section IV.D, Transportation and Circulation, existing trip generation on the project site is equal to approximately 5,690 trips per day, which was used to estimate criteria air pollutants for existing vehicle emissions. Area source emissions associated with the existing uses were calculated using the total hospital building square footages, and CalEEMod default assumptions based on the land use type. Additionally, other emissions from current hospital operations such as helicopter trips, boiler emissions and standby generators were estimated for the site.

Helicopter emissions were estimated using the Federal Aviation Administrations (FAA's) Emission Dispersion Modeling System (EDMS) to account for the 559 helicopter arrivals/departures that occurred in 2013 (the most recent year with this data). The CHRCO Campus includes the operation of seven boilers and four standby generators. Emissions were calculated for each piece of equipment using the model year and installed size information provided by the project applicant. All equipment summary details are provided in Appendix E. Daily and annual emissions for the existing uses on the project site are shown in **Table IV.E-7**.

**Phase 1 Impacts.** According to the traffic analysis prepared for the project (see Section IV.D, Transportation and Circulation), the Phase 1 of the project is expected to generate approximately 5,930 trips per day (or 240 net trips, taking into account existing uses on the site). Area source emissions associated with the project would include water heating, architectural coatings, and the use of landscaping equipment all of which were calculated using CalEEMod. Energy efficiency associated with the OPC2's LEED (Leadership in Energy and Environmental Design) Silver certification level for LEED Healthcare was also accounted for in the analysis.

The CalEEMod analysis included an evaluation of approximately 82,100 square feet of medical office space, an approximately 1,100 square foot central utility plant and a 7,000 square foot parking garage. The Phase 1 analysis also includes the remaining approximately 690,875 square feet of existing hospital space with a trip generation rate of 5,690 daily trips. Emissions associated with existing CHRCO uses (retained CHRCO emissions) under Phase 1 represent emissions from the project with demolition of 1,541 square feet of building area Phase 1 would include renovations to these buildings and area source emissions estimates include activities such as repainting. Operational emissions are the sum of mobile source emissions from vehicles traveling to and from the project site and area

**Table IV.E-7: Existing Regional Emissions from CHRCO Campus**

|                                    | ROG         | NO <sub>x</sub> | Exhaust PM <sub>2.5</sub> | Exhaust PM <sub>10</sub> |
|------------------------------------|-------------|-----------------|---------------------------|--------------------------|
| <b>Emissions in Pounds Per Day</b> |             |                 |                           |                          |
| Helicopter Emissions               | 0.1         | 1.2             | 0.1                       | 0.1                      |
| Boilers                            | 2.2         | 7.3             | 2.2                       | 2.2                      |
| Standby Generators                 | 0.1         | 9.0             | 0.2                       | 0.2                      |
| Operational Emissions              | 49.3        | 92.4            | 32.9                      | 10.7                     |
| <b>Total Emissions</b>             | <b>51.7</b> | <b>109.9</b>    | <b>35.4</b>               | <b>13.2</b>              |
| <b>Emissions in Tons Per Year</b>  |             |                 |                           |                          |
| Helicopter Emissions               | 0.02        | 0.2             | 0.01                      | 0.01                     |
| Boilers                            | 0.2         | 1.7             | 0.03                      | 0.03                     |
| Standby Generators                 | 0.2         | 1.6             | 0.01                      | 0.01                     |
| Operational Emissions              | 8.5         | 16.3            | 5.8                       | 1.9                      |
| <b>Total Emissions</b>             | <b>8.9</b>  | <b>19.8</b>     | <b>5.9</b>                | <b>2.0</b>               |

Source: LSA Associates, Inc., 2014.

source emissions, which include paint emissions and the use of other consumer products. The net new daily and annual emissions associated with the Phase 1 of the project are identified in **Table IV.E-8** for ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. All calculation details are provided in Appendix E.

**Table IV.E-8: Phase 1 Project Regional Emissions**

|   | Emissions in Pounds Per Day |                 |                           |                          | Emissions in Tons Per Year |                 |                           |                          |
|---|-----------------------------|-----------------|---------------------------|--------------------------|----------------------------|-----------------|---------------------------|--------------------------|
|   | ROG                         | NO <sub>x</sub> | Exhaust PM <sub>2.5</sub> | Exhaust PM <sub>10</sub> | ROG                        | NO <sub>x</sub> | Exhaust PM <sub>2.5</sub> | Exhaust PM <sub>10</sub> |
| <b>Phase 1 Project Emissions</b>                  |                             |                 |                           |                          |                            |                 |                           |                          |
| Boiler Emissions                                  | 3.4                         | 14.0            | 3.7                       | 3.7                      | 0.6                        | 2.6             | 0.7                       | 0.7                      |
| Standby Generator Testing Emissions               | 0.1                         | 10.1            | 0.1                       | 0.1                      | 0.0                        | 1.8             | 0.0                       | 0.0                      |
| Operational Emissions                             | 2.9                         | 1.6             | 1.0                       | 0.3                      | 0.5                        | 0.3             | 0.2                       | 0.1                      |
| Retained CHRCO Operational Emissions <sup>a</sup> | 36.4                        | 59.8            | 32.5                      | 10.2                     | 6.4                        | 10.4            | 5.7                       | 1.8                      |
| <b>Total Phase 1 Emissions</b>                    | <b>42.8</b>                 | <b>85.5</b>     | <b>37.3</b>               | <b>14.3</b>              | <b>7.5</b>                 | <b>15.3</b>     | <b>6.6</b>                | <b>2.6</b>               |
| Existing (2013) Emissions                         | 51.7                        | 109.9           | 35.4                      | 13.2                     | 8.9                        | 19.8            | 5.9                       | 2.0                      |
| <b>Net New Phase 1 Project Emissions</b>          | <b>-8.9</b>                 | <b>-24.4</b>    | <b>1.9</b>                | <b>1.1</b>               | <b>-1.4</b>                | <b>-4.5</b>     | <b>0.7</b>                | <b>0.6</b>               |
| <b>Significance Threshold</b>                     | <b>54.0</b>                 | <b>54.0</b>     | <b>82.0</b>               | <b>54.0</b>              | <b>10.0</b>                | <b>10.0</b>     | <b>15.0</b>               | <b>10.0</b>              |
| <b>Exceed?</b>                                    | No                          | No              | No                        | No                       | No                         | No              | No                        | No                       |

<sup>a</sup> This includes helicopter emissions. It is estimated by CHRCO that helicopter flights would increase at the rate of approximately 1 percent per year through implementation of the Master Plan, with or without the elements proposed in Phase 1 or Phase 2 of the Master Plan.

Source: LSA Associates, Inc., 2014.

The results indicate the net new project emissions would not exceed the City's threshold for ROG, NO<sub>x</sub>, PM<sub>2.5</sub> and PM<sub>10</sub>. As shown in **Table IV.E-8**, the emission summary indicates that total CHRCO emissions would actually be less under Phase 1 than current emissions primarily due to reductions in vehicle emissions associated attributable to increased fuel standards. Therefore, regional emissions associated with the project would not exceed the City's significance thresholds; impacts would be less than significant.

**Phase 2 Impacts.** The Phase 2 analysis represents project buildout and includes new construction from Phase 1. Phase 2 of the project would include the demolition of 65,041 square feet of building area construction 309,000 square feet of new building space for a net increase of 243,959 square feet. The Family Residence Building and the Clinical Support Building would be built using the latest CalGreen standards which would result in lower energy usage when compared to existing buildings.

When combined with the new building area constructed during Phase 1, the project would add a net new total of 332,618 square feet of building area. Phase 2 of the project would generate an additional 990 vehicle trips per day for a total project trip generation of 1,230 net new trips. An emissions analysis using CalEEMod was performed to evaluate the following land uses:

- 82,100-square-foot medical office (240 net new trips)(Phase 1);
- 7,000-square-foot parking garage (Phase 1);
- 14,500-square-foot residential (Phase 2);
- 31,300-square-foot office (310 net new trips)(Phase 2);

- 144,500-square-foot hospital (680 net new trips, LEED Certified) (Phase 2); and
- 114,900-square-foot parking garage (Phase 2);
- 625,834-square-foot hospital (retained hospital space, 5,690 trips).

Phase 2 would also include the construction of 3,800 square feet of central utility plant space. Emission estimates include the installation of a new 1,500 kW standby diesel generator which would replace an existing 131 kW diesel generator, and five new boilers would replace two existing boilers.

The primary emissions associated with the project are regional in nature, meaning that air pollutants are rapidly dispersed on emission or, in the case of vehicle emissions associated with the project; emissions are released in other areas of the air basin. Because the resulting emissions are dispersed rapidly and contribute only a small fraction of the region's air pollution, air quality in the immediate vicinity of the project site would not substantially change compared to existing conditions or the air quality monitoring data reported in **Table IV.E-2**. Operational emissions, including project related vehicle emissions are the largest source of project emissions. As shown in **Table IV.E-9**, the project at buildout would not result in net new emissions that would exceed the City's significance thresholds for regional air emissions, this impact would be less-than-significant. Nitrogen oxide (NO<sub>x</sub>) and reactive organic gasses (ROG) emissions would be lower under buildout conditions due to vehicle emission control standards that would be phased in through 2020.

**Table IV.E-9: Project Buildout (Phase 1 and Phase 2) Regional Emissions**

|   | Emissions in Pounds Per Day |                 |                           |                          | Emissions in Tons Per Year |                 |                           |                          |
|---|-----------------------------|-----------------|---------------------------|--------------------------|----------------------------|-----------------|---------------------------|--------------------------|
|   | ROG                         | NO <sub>x</sub> | Exhaust PM <sub>2.5</sub> | Exhaust PM <sub>10</sub> | ROG                        | NO <sub>x</sub> | Exhaust PM <sub>2.5</sub> | Exhaust PM <sub>10</sub> |
| <b>Phase 1 and Phase 2 Project Emissions</b>      |                             |                 |                           |                          |                            |                 |                           |                          |
| Boiler Emissions                                  | 3.2                         | 13.9            | 4.2                       | 4.2                      | 0.6                        | 2.6             | 0.8                       | 0.8                      |
| Standby Generator Testing Emissions               | 0.1                         | 10.0            | 0.2                       | 0.2                      | 0.0                        | 1.9             | 0.0                       | 0.0                      |
| Operational Emissions                             | 20.3                        | 10.4            | 10.0                      | 5.3                      | 2.4                        | 1.8             | 1.2                       | 0.3                      |
| Retained CHRCO Operational Emissions <sup>a</sup> | 31.8                        | 50.1            | 32.4                      | 10.1                     | 5.6                        | 8.5             | 5.7                       | 1.5                      |
| <b>Total Project Buildout Emissions</b>           | <b>55.4</b>                 | <b>84.4</b>     | <b>46.8</b>               | <b>19.8</b>              | <b>8.6</b>                 | <b>14.8</b>     | <b>7.7</b>                | <b>2.6</b>               |
| Existing (2013) Emissions                         | 51.7                        | 109.9           | 35.4                      | 13.2                     | 8.9                        | 19.8            | 5.9                       | 2.0                      |
| <b>Net New Project Buildout Emissions</b>         | <b>3.7</b>                  | <b>-25.5</b>    | <b>11.4</b>               | <b>6.6</b>               | <b>-0.3</b>                | <b>-4.0</b>     | <b>1.8</b>                | <b>0.6</b>               |
| <b>Significance Threshold</b>                     | <b>54.0</b>                 | <b>54.0</b>     | <b>82.0</b>               | <b>54.0</b>              | <b>10.0</b>                | <b>10.0</b>     | <b>15.0</b>               | <b>10.0</b>              |
| <b>Exceed?</b>                                    | No                          | No              | No                        | No                       | No                         | No              | No                        | No                       |

<sup>a</sup> This includes helicopter emissions. It is estimated by CHRCO that helicopter flights would increase at the rate of approximately 1 percent per year through implementation of the Master Plan, with or without the elements proposed in Phase 1 or Phase 2 of the Master Plan.

Source: LSA Associates, Inc., 2014.

**(3) Localized CO Impacts.** Emissions and ambient concentrations of CO have decreased dramatically in the Bay Area with the introduction of the catalytic converter in 1975. No exceedances of the State or federal CO standards have been recorded at Bay Area monitoring stations since 1991. The May 2012 BAAQMD *CEQA Air Quality Guidelines* include recommended methodologies for quantifying concentrations of localized CO levels for proposed transportation projects. Guidance is not provided for evaluation of development projects. However, in an order to provide a comprehen-

sive analysis of the potential impacts of the project on air pollution, a screening level analysis using guidance from the BAAQMD 2011 *CEQA Air Quality Guidelines* was performed. The screening methodology provides a conservative indication of whether the implementation of a proposed project would result in significant CO emissions. According to the BAAQMD's 2011 *CEQA Air Quality Guidelines*, a proposed project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria are met:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, and the regional transportation plan and local congestion management agency plans.
- Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, or below-grade roadway).

**Phase 1 Impacts.** Under Phase 1, the proposed project would not conflict with the Alameda County Transportation Commission's Congestion Management Program for designated roads or highways, a regional transportation plan, or other agency plans. The proposed project would also not be located in an area where vertical or horizontal mixing is substantially limited and traffic volumes on roadways in the vicinity of the project site are less than 44,000 vehicles per hour. In Oakland, only the MacArthur Maze portion of Interstate 580 exceeds the 44,000 vehicles per hour criteria. The project site is located more than 1 mile from the MacArthur Maze. As shown in **Table IV.E-2**, background CO concentrations are substantially below State and federal standards. Therefore, as the proposed project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour and the project would not result in localized CO concentrations that exceed State or federal standards, localized CO impacts would be less than significant.

**Phase 2 Impacts.** Under Phase 2, the proposed project would also not conflict with the Alameda County Transportation Commission's Congestion Management Program for designated roads or highways, a regional transportation plan, or other agency plans. As with Phase 1 conditions, the proposed project would not be located in an area where vertical or horizontal mixing is substantially limited and traffic volumes on roadways in the vicinity of the project site are less than 44,000 vehicles per hour. Phase 2 (i.e., buildout) of the project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour. The parking garage would generate a maximum of 40 vehicles per hour. Therefore, Phase 2 of the project would also not result in localized CO concentrations that exceed State or federal standards. This impact would be less than significant.

**(4) Exposure of Sensitive Receptors to Toxic Air Contaminants.** According to the City of Oakland, a new source of toxic air contaminants (TACs) would result in a significant impact if during project construction or operation it would: expose sensitive receptors to TACs resulting in an increased cancer risk greater than 10.0 in one million, increased non-cancer risk of greater than 1.0 on the hazard index (chronic or acute), or an annual average ambient PM<sub>2.5</sub> increase greater than 0.3 µg/m<sup>3</sup>. A significant cumulative impact would occur if the project in combination with other projects located within a 1,000-foot radius of the project site would expose sensitive receptors to TACs resulting in an increased cancer risk greater than 100.0 in one million, an increased non-cancer risk of

greater than 10.0 on the hazard index (chronic), or an ambient PM<sub>2.5</sub> increase greater than 0.8 µg/m<sup>3</sup> on an annual average basis. The project would expose sensitive receptors to increased health risks during project construction and during project operation.

The health risk assessment (HRA) conducted for this project was based on three current guidance documents: 1) the California EPA *Air Toxics Hot Spots Program Risk Assessment Guidelines*,<sup>29</sup> 2) The California Air Pollution Control Officers Association (CAPCOA) *Health Risk Assessment for Proposed Land Use Projects*,<sup>30</sup> and 3) the BAAQMD *Recommended Methods for Screening and Modeling Local Risks and Hazards*.<sup>31</sup> The BAAQMD document was released in May 2011 with the purpose of assisting lead agencies in conducting a risk and hazard analysis as part of the environmental review process for proposed land use projects. It provides Bay Area-specific guidance on how to screen projects and provides specific inputs for HRA modeling. This section describes the potential impact on sensitive receptors from construction and operation of the proposed project.

**Project Construction – Toxic Air Contaminants.** The project site is located in an urban area in close proximity to existing residential uses, as well as existing hospital uses, that could be exposed to diesel emission exhaust during the construction period. To estimate the potential cancer risk associated with construction of the proposed project from equipment exhaust (including diesel particulate matter), a dispersion model was used to translate an emission rate from the source location to a concentration at the receptor location of interest (i.e., a nearby residence). Dispersion modeling varies from a simpler, more conservative screening-level analysis to a more complex and refined detailed analysis. This assessment was conducted using ARB's exposure methodology, with the air dispersion modeling performed using the EPA dispersion model ISCST3. The model provides a detailed estimate of exhaust concentrations based on site and source geometry, source emissions strength, distance from the source to the receptor, and site-specific meteorological data.

*Construction Emission Estimation.* PM<sub>10</sub> and PM<sub>2.5</sub> off-road construction equipment exhaust emissions from the proposed project were calculated using emission factors from the EPA's off-road engine Tier Standards (code of Federal Regulations Title 40 Part 1039.102) in conjunction with brake horse powers (BHP) by equipment type. On-road mobile source emissions were calculated using the ARB's EMFAC2011 online system in conjunction with BHPs by equipment type identified in CalEEMod. Modeled construction equipment emissions are based on the equipment list provided to LSA by the project sponsor that is included in Appendix E.

PM<sub>10</sub> exhaust emissions were used in the model as a surrogate for diesel particulate matter (DPM). Emissions were estimated for the total construction periods. The construction equipment list, emission factors for construction equipment, and total project construction emissions are shown in Appendix E.

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<sup>29</sup> California Environmental Protection Agency, 2003. *Air Toxics Hot Spots Program Risk Assessment Guidelines*. August.

<sup>30</sup> California Air Pollution Control Officers Association, 2009. *Health Risk Assessment for Proposed Land Use Projects*. July.

<sup>31</sup> Bay Area Air Quality Management District, 2011. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May.



*Model Use.* To estimate the construction PM<sub>10</sub> exhaust concentrations, the ISCST3 model was used with all regulatory options selected. The model was run using the Oakland meteorological dataset from the years 2006 through 2010. Terrain data from Lakes' WebGIS website was also used to evaluate terrain near the project site. Emissions from construction activities were modeled as a volume source encompassing the project site with a release height of 16.4 feet. The resulting modeled concentrations were then post-processed using BAAQMD methodology.

The total construction emissions were summed using specific operational assumptions, including hourly and daily equipment usage for each phase of construction, as shown in Appendix E. The total emissions from operations were then modeled using conservative operational conditions (i.e., 13 hours per day, 350 days per year) to determine an average emission concentration. The resulting concentration represents the maximum exposure concentration to on- and off-site receptors.

*Construction Receptor Grid.* Existing hospital uses would be considered a sensitive receptor in addition to residential land uses surrounding the project. A construction receptor grid was established as part of the modeling effort to capture locations representing existing on- and off-site receptors that may be affected by emissions associated with construction of the project. The construction grid identifies blocks of nearby receptors and on-site receptors (e.g., hospital patients and playground users) that were modeled in the analysis to determine if they would be adversely affected using the thresholds identified by the City of Oakland. Residential units in the project area that are currently being used by the hospital as office space were excluded in the receptor grid. A grid space sufficient to ensure that nearby residents are adequately assessed was used. The BAAQMD recommends a receptor spacing of between 33 and 82 feet (10 and 25 meters).<sup>32</sup> Therefore, in order to conduct a cautious impact analysis that is protective of human health, a receptor spacing of 33 feet (10 meters) was used.

*Exposure Assumptions.* Also called dose-response assessment, exposure assumptions involve the process of characterizing the relationship between exposure to an agent and incidence of an adverse health effect in exposed populations. In a quantitative carcinogenic risk assessment such as this, the dose-response relationship is expressed in terms of a potency slope that is used to calculate the probability or risk of cancer associated with an estimated exposure. Cancer potency factors are expressed as the 95th percent upper confidence limit of the slope of the estimated dose-response curve, assuming continuous lifetime exposure to a substance at a dose of 1 milligram per kilogram of body weight per day and commonly expressed in units of inverse dose (i.e., (mg/kg/day)<sup>-1</sup>). It is assumed in cancer risk assessments that risk is directly proportional to dose and that there is no threshold for carcinogenesis. The Office of Environmental Health and Hazard (OEHHA) has compiled cancer potency factors, which are used in risk assessments.

For non-carcinogenic effects, dose-response data developed from animal or human studies are used to develop acute and chronic non-cancer Reference Exposure Levels (RELs). The acute and chronic RELs are defined as the concentration at which no adverse non-cancer adverse health effects are anticipated. The most sensitive health effect is chosen to determine the REL if the chemical affects multiple organ systems. Unlike cancer health effects, non-cancer acute and chronic health effects are generally assumed to have thresholds for adverse effects. In other words, acute or chronic injury from a pollutant will not occur until exposure to that pollutant has reached or exceeded a certain concentra-

<sup>32</sup> Bay Area Air Quality Management District, 2011. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May.

tion (i.e., threshold). The acute and chronic RELs are intended to be below the threshold for health effects for the general population. The actual threshold for health effects in the general population is generally not known with any precision.

Risk characterization is the final step of risk assessment. Modeled concentrations and public exposure information, which are determined through exposure assessment, are combined with potency factors and RELs that are developed through dose-response assessment.

*Cancer Risk.* The maximum incremental cancer risk from exposure to TACs was calculated following the guidelines established by OEHHA. The following equation was used to determine life time cancer risk levels for a resident child:

Inhalation cancer risk =  $(C_{\text{air}} * \text{DBR} * A * \text{EF} * \text{ED} * 1 \times 10^{-6}) / \text{AT} * \text{Inhalation Cancer Potency Factor} * \text{CRAF}$ , where:

$C_{\text{air}}$  = concentration of PM<sub>10</sub> in air (used as a surrogate for DPM concentration)  
DBR = daily breathing rate  
A = inhalation absorption factor  
EF = exposure frequency  
ED = exposure duration  
AT = time period over which exposure is averaged in days (25,550 days for a 70-year cancer risk)  
CRAF = cancer risk adjustment factor (an age sensitivity factor of 10 for first 2 years, and 3 for the third year through age 16)

Source: OEHHA Guidelines, August 2003 and BAAQMD's Recommended Methods for Screening and Modeling Local Risks and Hazards, May 2011.

As recommended by BAAQMD, the breathing rate of 302 liters per kilogram per day was used for adult exposure and 581 liters per kilogram per day was used for child exposure. The exposure frequency was assumed to be 259 days per year for off-site residents.<sup>33</sup> Based on historical hospital stay data, the average hospital stay is 5 days, with the longest stay of 30 days. Therefore, on-site receptors (hospital patients) were evaluated for an exposure duration of 30 days for each year of construction. The duration for project construction was assumed to be 3 years for Phase 1 and 4 years for Phase 2. The inhalation absorption factor was based on the conservative assumption that all pollution would be absorbed, and thus was 1.0. To determine incremental cancer risk, the estimated dose through inhalation was multiplied by the OEHHA-established cancer potency slope factor for DPM, which is 1.1 (mg/kg/day)<sup>-1</sup>.

Analyses conducted by the OEHHA indicate that both the prenatal and postnatal life stages can be, but are not always, much more susceptible to developing cancer than the adult life stage. The analyses also indicate that the age sensitivity factors (ASFs) for these age windows vary by chemical, gender and species. ASFs for prenatal, postnatal and juvenile exposures are complicated by the limited database of chemicals and studies available for analysis, and the broad distribution of results for different chemicals. The BAAQMD recommends a CRAF of 10 for construction projects to account for

<sup>33</sup> Bay Area Air Quality Management District, 2010. *Air Toxics NSR Program Health Risk Screening Analysis Guidelines*. January.

exposure from the third trimester to age 2. After reaching age 2, the CRAF is reduced to 3, until the resident child reaches age 16.

The concentration of each TAC at every receptor and the equation outlined above was applied to determine the cancer risk from all TACs using the weighted toxicity factors found in **Table IV.E-10**. The cancer risk level from all TACs was determined at each receptor. The cancer risk at all locations of sensitive receptors was then determined and the highest of these was reported as the maximum exposed individual (MEI). Work sites in the project vicinity were determined to have a lower maximum risk level than residential areas, as the exposure duration of 8 hours for workers would be much lower than the exposure duration of 24 hours for residents and patients. Worker exposures are also not subject to the age sensitivity factors which increase risk associated with residential receptors. Therefore, the off-site MEI was determined to be a residential receptor. Residential units and the hospital playground were evaluated using an outdoor exposure rate; hospital patients on-site were evaluated assuming an indoor exposure rate as the hospital buildings have inoperable windows.

**Table IV.E-10: Inhalation Health Risks from Phase 1 Project Construction**

|                                     | <b>Carcinogenic<br/>Inhalation Health<br/>Risk in One Million<br/>with CRAF</b> | <b>Chronic Inhalation<br/>Hazard Index</b> | <b>Acute Inhalation<br/>Hazard Index</b> | <b>Annual PM<sub>2.5</sub><br/>Concentration<br/>(µg/m<sup>3</sup>)</b> |
|-------------------------------------|---|--|--|---|
| Child Exposure On-Site Playground   | 1.11  | 0.030                                      | 0.0                                      | 0.073   |
| Maximum Exposed On-Site Individual  | 2.37  | 0.352                                      | 0.0                                      | 0.187   |
| Maximum Exposed Off-Site Individual | 7.92  | 0.352                                      | 0.0                                      | 0.094   |
| <b>Threshold</b>                    | <b>&gt;10.0 in one million</b>  | <b>&gt;1.0</b>                             | <b>&gt;1.0</b>                           | <b>&gt;0.30</b>   |

Note: This analysis conservatively assumes that patients would be in the hospital for 30 days for each year of construction period; however, the average hospital stay is approximately 5 days.

CRAF = Cancer Risk Adjustment Factors

Source: LSA Associates, Inc., 2014.

*Chronic Non-Cancer.* Non-cancer health risk is based on a hazard index for chronic (long-term) exposures. The hazard index is established by the OEHHA and is the ratio of the predicted incremental exposure concentration (using the annual emission concentration) to the REL that could cause adverse chronic health effects. The Chronic REL is the inhalation exposure concentration at which no adverse chronic health effects would be anticipated following exposure. For instance, the OEHHA has established a DPM Chronic REL of 5.0 µg/m<sup>3</sup>. This REL represents the level below which exposure to DPM would not result in adverse health effects.

The DPM chronic risk level is calculated as follows:

$$\text{Inhalation chronic risk} = C_{\text{air}} / \text{Inhalation Chronic REL}$$

where:  $C_{\text{air}}$  = annual concentration of DPM  
Inhalation Chronic REL = 5.0

This is repeated for all TACs with chronic RELs and the resulting chronic hazard indices at each receptor are summed and reported as the total chronic hazard index.

*Acute Non-Cancer.* Similarly, the acute hazard index is established by the OEHHA and is the ratio of the predicted incremental exposure concentration to the REL that could cause adverse acute health effects. The Acute REL is the inhalation exposure concentration at which no adverse acute health effects would be anticipated following exposure.

*PM<sub>2.5</sub>.* Annual average concentrations of PM<sub>2.5</sub> were calculated using the same methodology to determine the concentrations of TACs at all receptors. The resulting concentrations of PM<sub>2.5</sub> were then compared with the appropriate BAAQMD thresholds to determine significance.

**Phase 1 Construction Health Risk Impacts.** Existing residents in the vicinity of the project site and hospital patients would be exposed to TAC emissions generated during construction of the project. The comprehensive receptor grid developed for this Phase 1 analysis allows the examination of TAC concentrations throughout the area surrounding the project site, including all residents in the immediate vicinity. The on-site risk evaluation was done to evaluate the risk to patients of the hospital, including use of the on-site playground.

Maximum construction health risk and PM<sub>2.5</sub> concentrations are shown in **Table IV.E-10**. The results for acute and chronic impacts are also shown in **Table IV.E-10**. ISCST3 model inputs and results for construction of the project are included in Appendix E. Results of the analysis indicate that construction Phase 1 of the project would not expose sensitive receptors in the project site vicinity to health risk levels that would exceed the criteria established by the City for existing hospital patients or residents in the project vicinity.

Results of the analysis indicate that the highest risk during construction of Phase 1 would be a risk level of 7.92 in one million for the maximum exposed resident in the vicinity of the project site. This analysis conservatively assumed the resident to be an infant during the construction period and therefore assumed the CRAF to be 10 until the resident reached age 2, when the CRAF is 3. The resulting risk level for off-site receptors during Phase 1 of construction at 7.92 cancer cases in one million is below the threshold of 10 in one million. Risk levels for on-site patients during Phase 1 of construction would be 2.37 in one million which is also below the City's threshold. Risk levels for on-site patients are lower due to the indoor evaluation period. The Chronic Hazard Index would be also below the threshold at 0.352.

The acute inhalation Hazard Index threshold for non-carcinogenic TACs is 1.0. As shown in **Table IV.E-10**, the maximum acute Hazard Index would be negligible and therefore would not exceed the threshold of 1.0. Therefore, the potential for short-term acute exposure would be less than significant.

The results of the analysis also indicate that the maximum PM<sub>2.5</sub> concentration the maximum exposed individual would be 0.094 µg/m<sup>3</sup> for off-site receptors and 0.187 µg/m<sup>3</sup> for on-site receptors, which would also be below the City's significance threshold of 0.3 µg/m<sup>3</sup>.

Therefore, impacts from project construction during Phase 1 would be less-than-significant.

**Phase 2 Construction Health Risk Impacts.** Using the same methodology used for the Phase 1 analysis, Phase 2 (project buildout) construction health risks impacts were evaluated. Maximum construction health risk and PM<sub>2.5</sub> concentrations are shown in **Table IV.E-11**. The results for acute and chronic impacts for total project construction are also shown in **Table IV.E-11**. ISCST3 model inputs and results for construction of the project are included in Appendix E. Total cumulative

risk is lower than the sum of Phase 1 and Phase 2 due to the application of the Cancer Risk Adjustment Factor which applies to the first 16 years of the risk analysis. Results of the analysis indicate that construction of the project would not expose sensitive receptors in the project site vicinity to carcinogenic health risk levels that would exceed the criteria established by the City.

**Table IV.E-11: Inhalation Health Risks from Total Project Construction**

|  | <b>Carcinogenic<br/>Inhalation Health<br/>Risk in One Million<br/>with CRAF</b> | <b>Chronic Inhalation<br/>Hazard Index</b> | <b>Acute Inhalation<br/>Hazard Index</b> | <b>Annual PM<sub>2.5</sub><br/>Concentration<br/>(µg/m<sup>3</sup>)</b> |
|--|---|--|--|---|
| Maximum Exposed<br>On-Site Individual  | 2.98  | 0.585                                      | 0.0                                      | 0.17  |
| Maximum Exposed<br>Off-Site Individual | 4.48  | 0.014                                      | 0.0                                      | 0.209   |
| <b>Threshold</b>                       | <b>&gt;10.0<br/>in one million</b>  | <b>&gt;1.0</b>                             | <b>&gt;1.0</b>                           | <b>&gt;0.30</b>   |

Note: This analysis conservatively assumes that patients would be in the hospital for 30 days each year of the construction period; however, the average hospital stay is approximately 5 days.

CRAF = Cancer Risk Adjustment Factors

Source: LSA Associates, Inc., 2014.

Results of the analysis indicate that the highest risk during construction would be a risk level of 4.48 for residents in the project vicinity. This analysis conservatively assumed the resident to be an infant during the start of project construction project and therefore assumed the CRAF to be 10 until the resident reached age 2, when the CRAF is 3. This risk level is below the threshold of 10 in one million.

The Chronic Hazard Index would be below the threshold at 0.014. The acute inhalation Hazard Index threshold for non-carcinogenic TACs is 1.0. As shown in **Table IV.E-11**, the maximum acute Hazard Index would be negligible and would not exceed the threshold of 1.0. Therefore, the potential for short-term acute exposure would be less than significant. The results of the analysis also indicate that the maximum PM<sub>2.5</sub> concentration would be 0.209 µg/m<sup>3</sup>, which is also below the City's significance threshold of 0.3 µg/m<sup>3</sup>.

SCA AIR-1 would require the project applicant to develop a plan demonstrating that the off-road equipment to be used in the construction project would achieve a project wide fleet-average 45 percent reduction in particulate matter emissions compared to the most recent California Air Resources Board fleet average. The analysis above assumed an average fleet. With implementation of this SCA AIR-1, emissions attributable to risk levels would be further reduced.

**Cumulative Construction Health Risk Impacts.** The cumulative construction analysis sums the risk levels from project construction emissions, screening level values for the permitted sources in the project vicinity, and screening level roadway risk levels within 1,000 feet of the project site.

The City recommends that all stationary sources within 1,000 feet of a project site be included in a cumulative impact assessment. Using the toxic air contaminant emissions reported to the BAAQMD by the stationary sources identified in the project vicinity, LSA included the risk levels (adjusted for distance) in the cumulative analysis. Using the BAAQMD's database, two sources of emissions were found within 1,000 feet of the project site including a gasoline dispensing facility and a permitted standby generator.

The results of the cumulative analysis are presented in **Table IV.E-12**. As shown in **Table IV.E-12**, the cumulative health risk of all roadways, stationary sources and mobile sources would be less than the City's cumulative risk and hazard thresholds. Therefore, residents in the vicinity of the project site would not be exposed to significant cumulative health risk impacts during construction of the project.

**Table IV.E-12: Cumulative Construction Health Risk Impacts**

|   | Cancer Risk<br>(in one million) | Chronic Inhalation<br>Hazard Index | Annual PM <sub>2.5</sub><br>Concentration<br>( $\mu\text{g}/\text{m}^3$ ) |
|---|---------------------------------|------------------------------------|---|
| CHRCO Project Construction                                | 4.48                            | 0.14                               | 0.209   |
| Arco Facility (Gas Station – 5131 Shattuck)               | 1.6                             | 0.002                              | NA  |
| City of Oakland (Generator – 463 51 <sup>st</sup> Street) | 3.17                            | NA                                 | 0.0007  |
| Highway 24  | 22.0                            | 0.22                               | 0.19  |
| <b>Total</b>  | <b>31.25</b>                    | <b>0.362</b>                       | <b>0.3997</b>   |
| Threshold   | 100.0                           | 10.0                               | 0.8   |
| <b>Exceed</b>   | <b>No</b>                       | <b>No</b>                          | <b>No</b>   |

Source: BAAQMD, 2014 and LSA Associates, Inc., 2014.

**Project Operation – Toxic Air Contaminants.** The proposed project currently utilizes four standby emergency generators on-site. The project would install a 1,500 kW standby diesel generator which would replace an existing 131 kW diesel generator. All generators would be permitted by the BAAQMD and require intermittent use as part of testing, thereby emitting diesel particulate matter. Additionally, the project would install five new gas-fired boilers, replacing two of the existing boilers, which would also be a source of emissions. Other sources of toxic air contaminants associated with the project are the helicopter trips, ambulances, and delivery trucks. Therefore, a health risk assessment was performed to determine the health risk to hospital patients and nearby residents based on the proposed location of each piece of equipment (see Appendix E).

*Phase 1 Off-Site Project Impacts.* The results of the Phase 1 operational health risk analysis are shown in **Table IV.E-13**. The project, under project Phase 1 conditions, including testing of standby generators, operation of boilers, ambulance trips, helicopter trips and delivery trucks would result in a risk level of 2.59 in one million, which is lower than the threshold of 10 in one million, and would therefore be less than significant. The maximum chronic Inhalation Hazard Index would be 0.002 at the maximum exposed residence, which is below the threshold of 1.0. The results of the analysis also indicate that the maximum annual PM<sub>2.5</sub> concentration at a receptor location would be 0.136  $\mu\text{g}/\text{m}^3$ , which is below the City's significance threshold of 0.3  $\mu\text{g}/\text{m}^3$ . Therefore, operation of Phase 1 of the proposed project would not expose off-site sensitive receptors to significantly increased health risks.

**Table IV.E-13: Phase 1 Off-Site Inhalation Health Risks Project Operations**

|  | <b>Carcinogenic<br/>Inhalation Health<br/>Risk in One Million<br/>with CRAF</b> | <b>Chronic Inhalation<br/>Hazard Index</b> | <b>Acute Inhalation<br/>Hazard Index</b> | <b>Annual PM<sub>2.5</sub><br/>Concentration<br/>(µg/m<sup>3</sup>)</b> |
|--|---|--|--|---|
| Maximum Exposed<br>Off-Site Individual | 2.59  | 0.002                                      | 0.040                                    | 0.136   |
| <b>Threshold</b>                       | <b>&gt;10.0<br/>in one million</b>  | <b>&gt;1.0</b>                             | <b>&gt;1.0</b>                           | <b>&gt;0.30</b>   |

CRAF = Cancer Risk Adjustment Factors

Source: LSA Associates, Inc., 2014.

*Phase 1 Cumulative Health Risk Impacts.* The cumulative analysis sums the risk levels from project operation emissions, risk levels for the permitted sources in the project vicinity, and roadway risk levels within 1,000 feet of the project site. Using the BAAQMD's database, two sources of emissions were found within 1,000 feet of the project site including a gasoline dispensing facility and a permitted standby generator. The results of the cumulative analysis are presented in **Table IV.E-14**. The cumulative health risk of operation of Phase 1 of the project would be less than the City's cumulative risk and hazard thresholds. Therefore, residents in the vicinity of the project site would not be exposed to significant cumulative health risk impacts with operation of Phase 1 of the project.

**Table IV.E-14: Phase 1 Cumulative Off-Site Health Risk Impacts**

|   | <b>Cancer Risk<br/>(in one million)</b> | <b>Chronic Inhalation<br/>Hazard Index</b> | <b>Annual PM<sub>2.5</sub><br/>Concentration<br/>(µg/m<sup>3</sup>)</b> |
|---|---|--|---|
| CHRCO Phase 1 Operation                                   | 2.59                                    | 0.002                                      | 0.136   |
| Arco Facility (Gas Station – 5131 Shattuck)               | 1.6                                     | 0.002                                      | NA  |
| City of Oakland (Generator – 463 51 <sup>st</sup> Street) | 3.17                                    | NA   | 0.0007  |
| Highway 24  | 22.0                                    | 0.22                                       | 0.19  |
| <b>Total</b>  | <b>29.36</b>                            | <b>0.224</b>                               | <b>0.3267</b>   |
| Threshold   | 100.0                                   | 10.0                                       | 0.8   |
| <b>Exceed</b>   | <b>No</b>                               | <b>No</b>                                  | <b>No</b>   |

Source: BAAQMD, 2014 and LSA Associates, Inc., 2014.

*Phase 2 Off-Site Project Impacts.* The results of the project buildout (Phase 1 and Phase 2) health risk analysis are shown in **Table IV.E-15**. Project buildout conditions, including testing of standby generators, operation of boilers, ambulance trips, helicopter trips and delivery trucks would result in a risk level of 2.59 in one million, which is lower than the threshold of 10 in one million, and would therefore be less than significant. The maximum chronic Inhalation Hazard Index would be 0.002 at the maximum exposed residence, which is below the threshold of 1.0. The results of the analysis also indicate that the maximum annual PM<sub>2.5</sub> concentration at a receptor location would be 0.2 µg/m<sup>3</sup>, which is below the City's significance threshold of 0.3 µg/m<sup>3</sup>. Therefore, buildout operations of the proposed project would not expose off-site sensitive receptors to significantly increased health risks.

**Table IV.E-15: Project Buildout (Phase 1 and Phase 2) Off-Site Inhalation Health Risks Project Operations**

|                                     | Carcinogenic Inhalation Health Risk in One Million with CRAF | Chronic Inhalation Hazard Index | Acute Inhalation Hazard Index | Annual PM <sub>2.5</sub> Concentration (µg/m <sup>3</sup> ) |
|-------------------------------------|--|---------------------------------|-------------------------------|---|
| Maximum Exposed Off-Site Individual | 2.59   | 0.002                           | 0.040                         | 0.200   |
| <b>Threshold</b>                    | <b>&gt;10.0 in one million</b>                               | <b>&gt;1.0</b>                  | <b>&gt;1.0</b>                | <b>&gt;0.30</b>   |

CRAF = Cancer Risk Adjustment Factors

Source: LSA Associates, Inc., 2014.

*Phase 2 Cumulative Health Risk Impacts.* The cumulative analysis sums the risk levels from project buildout (Phase 1 and Phase 2) operational emissions, risk levels for the permitted sources in the project vicinity, and roadway risk levels within 1,000 feet of the project site. Using the BAAQMD's database, two sources of emissions were found within 1,000 feet of the project site including a gasoline dispensing facility and a permitted standby generator. The results of the cumulative analysis are presented in **Table IV.E-16**. The cumulative health risk of operation of the project at buildout would be less than the City's cumulative risk and hazard thresholds. Therefore, residents in the vicinity of the project site would not be exposed to significant cumulative health risk impacts during long term operation of the proposed project under the buildout scenario.

**Table IV.E-16: Project Buildout (Phase 1 and Phase 2) Cumulative Health Risk Impacts**

|   | Cancer Risk (in one million) | Chronic Inhalation Hazard Index | Annual PM <sub>2.5</sub> Concentration (µg/m <sup>3</sup> ) |
|---|------------------------------|---------------------------------|---|
| CHRCO Phase 2 Project                                     | 2.59                         | 0.002                           | 0.200   |
| Arco Facility (Gas Station – 5131 Shattuck)               | 1.6                          | 0.002                           | NA  |
| City of Oakland (Generator – 463 51 <sup>st</sup> Street) | 3.17                         | NA                              | 0.0007  |
| Highway 24  | 22.0                         | 0.22                            | 0.19  |
| <b>Total</b>  | <b>29.36</b>                 | <b>0.224</b>                    | <b>0.3907</b>   |
| Threshold   | 100.0                        | 10.0                            | 0.8   |
| <b>Exceed</b>   | <b>No</b>                    | <b>No</b>                       | <b>No</b>   |

Source: BAAQMD, 2014 and LSA Associates, Inc., 2014.

**(5) On-Site Sensitive Receptor Impacts.** Operation of the proposed project would impact on-site sensitive receptors (hospital patients) through the use of standby generator testing, operation of boilers, delivery trucks, ambulance trips and helicopter emissions. The on-site sensitive receptor analysis evaluated the impacts of the operation of the project to hospital patients.



**Phase 1 Impacts.** The results of the health risk analysis indicate that the project, under Phase 1 conditions, including testing of standby generators, operation of boilers, ambulance trips, helicopter trips and delivery trucks are shown in **Table IV.E-17**. Results indicate that risk levels for maximally exposed on-site hospital patients receptors would be 0.10 in one million and would be 0.26 for playground users, which is well below the threshold of 100 in one million for new receptors, and would therefore be less than significant. The maximum Chronic Inhalation Hazard Index would be 0.064 for playground users and 0.058 for maximally exposed on-site receptors, which are both below the threshold of 1.0. The Acute Inhalation Hazard Index would be 0.030 and 0.138 for playground users and the maximally exposed on-site individual, respectively. The results of the analysis also indicate that the maximum annual average PM<sub>2.5</sub> concentration for both maximally exposed on-site receptors and playground users would be 0.68 µg/m<sup>3</sup>, which is also below the City's significance threshold of 0.8 µg/m<sup>3</sup>. Therefore, operation of Phase 1 of the proposed project would not expose on-site sensitive receptors to substantial pollutant concentrations. As such on-site sensitive receptor impacts for Phase 1 would be less than significant.

**Table IV.E-17: On-Site Inhalation Health Risks Phase 1 Project Operations**

|                                    | Carcinogenic<br>Inhalation Health<br>Risk in One Million<br>with CRAF | Chronic Inhalation<br>Hazard Index | Acute Inhalation<br>Hazard Index | Annual PM <sub>2.5</sub><br>Concentration<br>(µg/m <sup>3</sup> ) |
|------------------------------------|---|------------------------------------|----------------------------------|---|
| Child Exposure On-Site Playground  | 0.26  | 0.064                              | 0.030                            | 0.68  |
| Maximum Exposed On-Site Individual | 0.10  | 0.058                              | 0.138                            | 0.68  |
| <b>Threshold</b>                   | <b>&gt;100.0<br/>in one million</b>                                   | <b>&gt;10.0</b>                    | <b>&gt;10.0</b>                  | <b>&gt;0.8</b>  |

CRAF = Cancer Risk Adjustment Factors

Source: LSA Associates, Inc., 2014.

**Phase 2 Impacts.** The project buildout (Phase 1 and Phase 2), including testing of standby generators, operation of boilers, ambulance trips, helicopter trips and delivery trucks on-site health risk analysis is shown in **Table IV.E-18**. Results indicate that risk levels for on-site hospital patients receptors would be 0.10 in one million and would be 0.39 in one million for playground users and 0.10 for the maximally exposed on-site individual, which are well below the threshold of 100 in one million for new receptors, and would therefore be less than significant. The maximum Chronic Inhalation Hazard Index would be 0.064 for on-site receptors and 0.058 for the maximally exposed on-site individual, which are below the threshold of 1.0. The Acute Inhalation Hazard Index would be 0.030 and 0.138 for playground and maximally exposed on-site individuals, respectively. The results of the analysis also indicate that the maximum annual average PM<sub>2.5</sub> concentration for playground and maximally exposed on-site individuals would be 0.68 µg/m<sup>3</sup>, which is also below the City's significance threshold of 0.8 µg/m<sup>3</sup>. Therefore, operation of the proposed project would not expose on-site sensitive receptors to substantial pollutant concentrations. As such, on-site sensitive receptor impacts for Phase 2 would be less than significant.

**Table IV.E-18: On-Site Inhalation Health Risks Buildout (Phase 1 and Phase 2) Project Operations**

|                                    | <b>Carcinogenic<br/>Inhalation Health<br/>Risk in One Million<br/>with CRAF</b> | <b>Chronic Inhalation<br/>Hazard Index</b> | <b>Acute Inhalation<br/>Hazard Index</b> | <b>Annual PM<sub>2.5</sub><br/>Concentration<br/>(µg/m<sup>3</sup>)</b> |
|------------------------------------|---|--|--|---|
| Child Exposure On-Site Playground  | 0.39  | 0.064                                      | 0.030                                    | 0.68  |
| Maximum Exposed On-Site Individual | 0.10  | 0.059                                      | 0.137                                    | 0.68  |
| <b>Threshold</b>                   | <b>&gt;100.0<br/>in one million</b>   | <b>&gt;10.0</b>                            | <b>&gt;10.0</b>                          | <b>&gt;0.8</b>  |

CRAF = Cancer Risk Adjustment Factors

Source: LSA Associates, Inc., 2014.

(6) **Odors.** During construction, the various diesel powered vehicles and equipment in use on-site would create localized odors. These odors would be temporary and are not likely to be noticeable for extended periods of time beyond the project site. The potential for diesel odor impacts is therefore considered less than significant. Odors from existing uses are not generally noticeable beyond the site boundary. A public records request to the BAAQMD revealed no odor complaints at the existing project site. The proposed uses that would be developed within the project site would be similar to existing operational uses, and are not expected to produce any offensive odors that would result in frequent odor complaints.

c. **Cumulative Air Quality Impacts.** According to the BAAQMD, regional air pollution is largely a cumulative impact. No single project is sufficient in size to independently create regional nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. Therefore, if the proposed project's daily average or annual emissions of construction- or operational-related criteria air pollutants exceed any applicable threshold established by the BAAQMD or the City of Oakland, the proposed project would result in a considerable contribution to a cumulatively significant impact.

As shown in **Table IV.E-9**, implementation of the project would not result in an exceedance of the operational thresholds for criteria pollutants, therefore, the project would not result in a considerable contribution to a cumulatively significant criteria air pollutant impact. Additionally, as shown in **Table IV.E-12**, the project would also not exceed the City's cumulative threshold for toxic air contaminants during the construction period. **Table IV.E-14** and **Table IV.E-16** indicate the operation of the project would also not contribute to a significant cumulative impact. Therefore, implementation of the CHRCO Campus Master Plan project would not result in a significant cumulative air quality impact.

## F. GREENHOUSE GAS EMISSIONS

Increasing public awareness and general scientific consensus that global climate change is occurring have placed a new focus on CEQA as a potential means to address a project's greenhouse gas (GHG) emissions. This section begins by providing general background information on climate change and meteorology. It then provides data on the existing global climate change setting, discusses the regulatory framework for global climate change, and evaluates potential GHG emissions associated with the proposed project. Modeled project emissions are estimated based on the land use associated with the proposed project, project trip generation, energy use, and other variables. The section then evaluates whether the project could cause a cumulatively considerable contribution to climate change using methods and assumptions outlined in the Bay Area Air Quality Management District (BAAQMD) *CEQA Air Quality Guidelines*.<sup>1</sup>

### 1. Global Climate Change Setting

The following discussion provides an overview of global climate change, its causes, its potential effects, emission sources, and inventories.

**a. Global Climate Change Background.** A description of global climate change and its sources is provided below.

**(1) Global Climate Change.** Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. Global surface temperatures have risen by  $0.74^{\circ}\text{C} \pm 0.18^{\circ}\text{C}$  ( $1.1^{\circ}\text{F} \pm 0.4^{\circ}\text{F}$ ) between 1906 and 2005. The rate of warming over the last 50 years of this period is almost double that over the last 100 years.<sup>2</sup> The prevailing scientific opinion on climate change is that most of the warming observed over the last 50 years is attributable to human activities. The increased amounts of carbon dioxide and other GHGs are the primary causes of the human-induced component of warming. GHGs are released by the burning of fossil fuels, land clearing, agriculture, and other activities, and lead to an increase in the greenhouse effect.<sup>3</sup>

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are:

- Carbon dioxide ( $\text{CO}_2$ )
- Methane ( $\text{CH}_4$ )
- Nitrous oxide ( $\text{N}_2\text{O}$ )
- Hydrofluorocarbons (HFCs)

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<sup>1</sup> Bay Area Air Quality Management District, 2012. *CEQA Air Quality Guidelines*. May.

<sup>2</sup> Intergovernmental Panel on Climate Change, 2007. *Climate Change 2007: The Physical Science Basis*. Contribution of Working Group I to the Fourth Assessment Report of the IPCC.

<sup>3</sup> The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse lets heat from sunlight in and reduces the heat escaping, greenhouse gases like carbon dioxide, methane, and nitrous oxide in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe. Thus, although an excess of GHG results in global warming, the naturally occurring greenhouse effect is necessary to keep our planet at a comfortable temperature.

- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF<sub>6</sub>)

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include naturally-occurring gases such as CO<sub>2</sub>, methane, and N<sub>2</sub>O, some gases, like HFCs, PFCs, and SF<sub>6</sub> are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere (“atmospheric lifetime”). The GWP of each gas is measured relative to CO<sub>2</sub>, the most abundant GHG; the definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO<sub>2</sub> over a specified time period. GHG emissions are typically measured in terms of pounds or tons of “CO<sub>2</sub> equivalents” (CO<sub>2</sub>e). **Table IV.F-1** shows the GWPs for each type of GHG. For example, SF<sub>6</sub> is 22,800 times more potent at contributing to global warming than CO<sub>2</sub>. The following discussion summarizes the characteristics of the six GHGs.

**Table IV.F-1: Global Warming Potential of Greenhouse Gases**

| Gas   | Atmospheric Lifetime<br>(Years) | Global Warming Potential<br>(100-Year Time Horizon) |
|---|---------------------------------|---|
| Carbon Dioxide  | 50-200                          | 1   |
| Methane   | 12                              | 25  |
| Nitrous Oxide   | 114                             | 298   |
| HFC-23  | 270                             | 14,800  |
| HFC-134a  | 14                              | 1,430   |
| HFC-152a  | 1.4                             | 124   |
| PFC: Tetrafluoromethane (CF <sub>4</sub> )              | 50,000                          | 7,390   |
| PFC: Hexafluoromethane (C <sub>2</sub> F <sub>6</sub> ) | 10,000                          | 12,200  |
| Sulfur Hexafluoride (SF <sub>6</sub> )                  | 3,200                           | 22,800  |

Source: IPCC, 2007. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC.*

**Carbon Dioxide.** In the atmosphere, carbon generally exists in its oxidized form, as CO<sub>2</sub>. Natural sources of CO<sub>2</sub> include the respiration (breathing) of humans, animals and plants, volcanic outgassing, decomposition of organic matter, and evaporation from the oceans. Human-caused sources of CO<sub>2</sub> include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. Natural sources release approximately 150 billion tons of CO<sub>2</sub> each year, far outweighing the 7 billion tons of man-made emissions of CO<sub>2</sub> each year. Natural removal processes,

such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input of man-made CO<sub>2</sub> and consequently the gas is building up in the atmosphere.

**Methane.** CH<sub>4</sub> is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Decomposition occurring in landfills accounts for the majority of human-generated CH<sub>4</sub> emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation, manure management, and rice cultivation are also significant sources of CH<sub>4</sub> in California. CH<sub>4</sub> accounted for approximately 6 percent of gross climate change emissions (CO<sub>2</sub>e) in California in 2002.

Total annual emissions of CH<sub>4</sub> are approximately 500 million tons, with manmade emissions accounting for the majority. As with CO<sub>2</sub>, the major removal process of atmospheric CH<sub>4</sub> – a chemical breakdown in the atmosphere – cannot keep pace with source emissions, and CH<sub>4</sub> concentrations in the atmosphere are increasing.

**Nitrous Oxide.** N<sub>2</sub>O is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. N<sub>2</sub>O is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit N<sub>2</sub>O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N<sub>2</sub>O emissions in California. N<sub>2</sub>O emissions accounted for nearly 7 percent of man-made GHG emissions (CO<sub>2</sub>e) in California in 2002.

**Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride.** HFCs are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol.<sup>4</sup> PFCs and SF<sub>6</sub> are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry leads to greater use of PFCs. HFCs, PFCs, and SF<sub>6</sub> accounted for about 3.5 percent of man-made GHG emissions (CO<sub>2</sub>e) in California in 2002.

**(2) Impacts of Climate Change.** The potential impacts of global climate change are described in the following section.

**Temperature Increase.** State-of-the art climate models indicate that temperatures in California may be expected to rise 3°F to 10.5°F by the end of the century.<sup>5</sup> Because GHGs persist for a long time in the atmosphere, accumulate over time, and are generally well-mixed, their impact on the atmosphere cannot be tied to a specific point of emission.

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from:

<sup>4</sup> The Montreal Protocol is an international treaty that became effective on January 1, 1989, and was intended to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion.

<sup>5</sup> California Climate Change Center, 2006. *Our Changing Climate. Assessing the Risks to California*. July.

- Natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;
- Natural processes within the climate system (e.g., changes in ocean circulation and reduction in sunlight from the addition of GHGs and other gases to the atmosphere from volcanic eruptions); and
- Human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., from deforestation, reforestation, urbanization, and desertification).

The primary effect of global climate change has been a rise in the average global temperature. The impact of human activities on global climate change is readily apparent in the observational record. For example, surface temperature data show that 11 of the 12 years from 1995 to 2006 rank among the 12 warmest since 1850, the beginning of the instrumental record for global surface temperature.<sup>6</sup> Climate change modeling shows that further warming could occur, which would induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of California could include, but are not limited to:

- The loss of sea ice and mountain snow pack, resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures;
- Rise in the global average sea level primarily due to thermal expansion and melting of glaciers and ice caps in the Greenland and Antarctic ice sheets;
- Changes in weather that include widespread changes in precipitation, ocean salinity, and wind patterns, and more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and tropical cyclones;
- Decline of the Sierra snowpack, which accounts for a significant amount of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years;
- Increase in the number of days conducive to ozone formation by 25 to 85 percent (depending on the future temperature scenario) in high-ozone areas of Los Angeles and the San Joaquin Valley by the end of the 21<sup>st</sup> century; and
- High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level.

**Precipitation and Water Supply.** Global average precipitation is expected to increase overall during the 21<sup>st</sup> century as the result of climate change, but will vary in different parts of the world. However, global climate models are generally not well suited for predicting regional changes in precipitation because of the scale of regionally important factors, such as the proximity of mountain ranges that affect precipitation.<sup>7</sup>

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<sup>6</sup> California, State of, 2009. California Energy Commission's Public Interest Energy Research Program. *The Future is Now: An Update on Climate Change Science, Impacts, and Response Options for California*. September.

<sup>7</sup> Intergovernmental Panel on Climate Change, 2007, op. cit.

Most of California's precipitation falls in the northern part of the State during the winter. A vast network of man-made reservoirs and aqueducts capture and transport water throughout the State from northern California rivers, as the greatest demand for water comes from users in the southern part of the State during the spring and summer.<sup>8</sup> The current distribution system relies on Sierra Nevada mountain snowpack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snowpack, increasing the risk of summer water shortages. If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent over the next 100 years.

The extent to which various meteorological conditions will affect groundwater supply is unknown. Warmer temperatures could increase the period when water is on the ground by reducing soil freeze. However, warmer temperatures could also lead to higher evaporation or shorter rainfall seasons, shortening the recharge season. Warmer winters could increase the amount of runoff available for groundwater recharge. However, the additional runoff would occur at a time when some basins, particularly in Northern California, are being recharged at their maximum capacity.

Where precipitation is projected to increase in California, the increases are focused in Northern California. However, various California climate models provide mixed results regarding changes in total annual precipitation in the State through the end of this century; therefore, no conclusion on an increase or decrease can be made. Considerable uncertainties about the precise effects of climate change on California hydrology and water resources will remain until there is more precise and consistent information about how precipitation patterns, timing, and intensity will change.<sup>9</sup>

As discussed in Section IV.K., Utilities, the East Bay Municipal Utility District (EBMUD) is the water district that serves the City of Oakland and many other East Bay cities. EBMUD accounted for water demands associated with the project within the 2010 Urban Water Management Plan (UWMP) and has verified through a Water Supply Assessment that adequate supplies are available to serve the project. The UWMP includes an analysis of past, present, existing, pending, and reasonably foreseeable future development projects based on the Association of Bay Area Government's (ABAG's) Projections 2009. Based on the ABAG Projections, the UWMP acknowledges that Oakland is continuing to see revitalization throughout the City and additional redevelopment is forecasted, with the City of Oakland accounting for the largest share of Alameda County's household growth. The UWMP assumes that over 100,000 persons will be added to Oakland between 2000 and 2035 and plans to supply water for such growth. The UWMP describes the potential effects of climate change on water supply, including the water supply that is most vulnerable. Additionally, EBMUD initiated planning for climate change into their Strategic Plan and issued its first Climate Change Monitoring and Response Plan in 2008. They also regularly participate in working groups on the issue in order to create tools to better adapt to changing supplies.

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<sup>8</sup> California Climate Change Center, 2006, op. cit.

<sup>9</sup> California, State of, 2006. Department of Water Resources, *Progress on Incorporating Climate Change into Management of California's Water Resources*. July.

**Sea Level Rise.** Rising sea level is one of the major areas of concern related to global climate change. Two of the primary causes for a sea level rise are the thermal expansion of ocean waters (water expanding as it heats up) and the addition of water to ocean basins by the melting of land-based ice. From 1961 to 2003, the global average sea level rose at an average rate of 0.07 inches per year, and at an accelerated average rate of about 0.12 inches per year during the last decade of this period (1993 to 2003).<sup>10</sup> Over the past 100 years, sea levels along California's coasts and estuaries have risen about 7 inches.<sup>11</sup>

Sea levels could rise an additional 55 inches by the end of the century as global climate change continues.<sup>12</sup> Although these projections are on a global scale, the rate of sea level rise along California's coast is relatively consistent with the worldwide average rate observed over the past century. Therefore, it is reasonable to assume that changes in worldwide sea level rise will also be experienced along California's coast.<sup>13</sup> Sea level rise of this magnitude would increasingly threaten California's coastal regions with more intense coastal storms, accelerated coastal erosion, threats to vital levees, and disruption of inland water systems, wetlands, and natural habitats. Residents may also be affected if wastewater treatment is compromised by inundation from rising sea levels, given that a number of treatment plants discharge to the Bay.

**Water Quality.** Water quality depends on a wide range of variables such as water temperature, flow, runoff rates and timing, waste discharge loads, and the ability of watersheds to assimilate wastes and pollutants. Climate change could alter water quality in a variety of ways, including through higher winter flows that reduce pollutant concentrations (through dilution) or increase erosion of land surfaces and stream channels, leading to higher sediment, chemical, and nutrient loads in rivers. Water temperature increases and decreased water flows can result in increasing concentrations of pollutants and salinity. Increases in water temperature alone can lead to adverse changes in water quality, even in the absence of changes in precipitation.

**Public Health.** Global climate change is also anticipated to result in more extreme heat events.<sup>14</sup> These extreme heat events increase the risk of death from dehydration, heart attack, stroke, and respiratory distress, especially with people who are ill, children, the elderly, and the poor, who may lack access to air conditioning and medical assistance. According to the California Climate Change Center, more research is needed to understand the effects of higher temperatures and how adapting to these temperatures can minimize health effects.<sup>15</sup>

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<sup>10</sup> California, State of, 2009. California Energy Commission's Public Interest Energy Research Program. *The Future is Now: An Update on Climate Change Science, Impacts, and Response Options for California*. September.

<sup>11</sup> Ibid.

<sup>12</sup> San Francisco Bay Conservation and Development Commission, 2013. San Francisco Bay Scenarios for Sea Level Rise Index Map. Website: [www.bcdc.ca.gov/planning/climate\\_change/index\\_map.shtml](http://www.bcdc.ca.gov/planning/climate_change/index_map.shtml).

<sup>13</sup> California, State of, 2006. Department of Water Resources. *Progress on Incorporating Climate Change into Management of California's Water Resources*. July.

<sup>14</sup> California Climate Change Center, 2006, op. cit.

<sup>15</sup> Ibid.



**(3) Emissions Inventories.** An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, United States, California, and local GHG emission inventories.

**Global Emissions.** Worldwide emissions of GHGs in 2004 were 27 billion metric tons of CO<sub>2</sub>e per year.<sup>16</sup> Global estimates are based on country inventories developed as part of programs of the United Nations Framework Convention on Climate Change (UNFCCC).

**U.S. Emissions.** In 2010, the United States emitted about 1,633.2 million metric tons (MMT) of CO<sub>2</sub>e, with each individual at home releasing approximately 4 metric tons per year. Of the four major sectors nationwide – residential, commercial, industrial and transportation – transportation accounts for the highest amount of GHG emissions (approximately 35 to 40 percent); these emissions are entirely generated from direct fossil fuel combustion. Between 1990 and 2009, total U.S. GHG emissions rose by 7.3 percent, but emissions decreased from 2008 to 2009 by 6.1 percent. This decrease was primarily due to: (1) a decrease in economic output resulting in a decrease in energy consumption across all sectors; and (2) a decrease in the carbon intensity of fuels used to generate electricity due to fuel switching as the price of coal increased, and the price of natural gas dropped sharply. Since 1990, U.S. emissions have increased at an average annual rate of 0.4 percent.<sup>17</sup>

**State of California Emissions.** According to the California Air Resources Board (ARB) emission inventory estimates, California's gross emissions of GHGs decreased 1.5 percent, from 463.6 MMT<sup>18</sup> of CO<sub>2</sub>e emissions in 2000 to 456.8 million in 2009, with a maximum of 488.8 million in 2007.<sup>19</sup> During the same period, California's population grew by 9.1 percent, from 33.9 to 37.2 million people and GHG emissions per person decreased from 13.7 to 12.4 metric tons of CO<sub>2</sub>e. The year 2009 saw a 5.8 percent decrease in Statewide GHG emissions, driven by a noticeable drop in on-road transportation, cement production, and electricity. The year 2009 also reflects the full effects of the economic recession and higher fuel prices. As the economy recovers, GHG emissions are likely to rise again without other mitigation actions.

California has the fourth lowest per-capita CO<sub>2</sub> emission rate from fossil fuel combustion in the country, due to the success of its energy efficiency and renewable energy programs and commitments that have lowered the State's GHG emissions rate of growth by more than half of what it would have been otherwise.<sup>20</sup>

<sup>16</sup> Combined total of Annex I and Non-Annex I Country CO<sub>2</sub>e emissions. United Nations Framework Convention on Climate Change, 2007. *GHG Inventory Data*. Websites: [unfccc.int/ghg\\_data/ghg\\_data\\_unfccc/time\\_series\\_annex\\_i/items/3814.php](http://unfccc.int/ghg_data/ghg_data_unfccc/time_series_annex_i/items/3814.php) and [maindb.unfccc.int/library/view\\_pdf.pl?url=http://unfccc.int/resource/docs/2005/sbi/eng/18a02.pdf](http://maindb.unfccc.int/library/view_pdf.pl?url=http://unfccc.int/resource/docs/2005/sbi/eng/18a02.pdf).

<sup>17</sup> U.S. Environmental Protection Agency, 2012. *The U.S. GHG Emissions and Sinks: Fast Facts*. Website: [www.epa.gov/climatechange/emissions/usinventoryreport.html](http://www.epa.gov/climatechange/emissions/usinventoryreport.html).

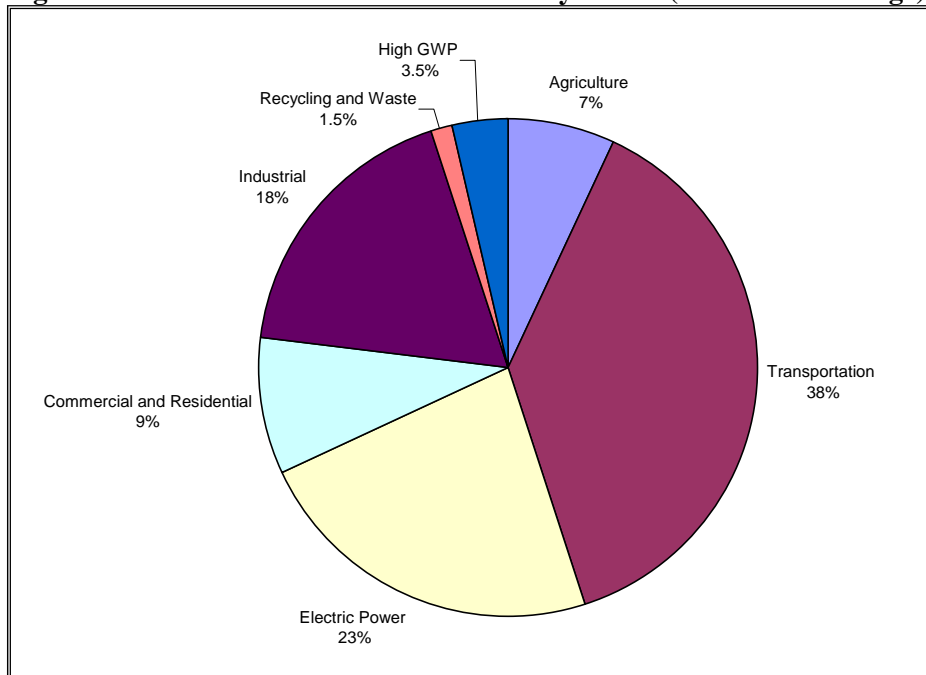
<sup>18</sup> A metric ton is equivalent to approximately 1.1 tons.

<sup>19</sup> California Air Resources Board, 2011. *Trends in California GHG Emissions for 2000 to 2009 by Category as Defined in the Scoping Plan*. December. Websites: [www.arb.ca.gov/cc/inventory/pubs/reports/ghg\\_inventory\\_00-09\\_trends.pdf](http://www.arb.ca.gov/cc/inventory/pubs/reports/ghg_inventory_00-09_trends.pdf) and [www.arb.ca.gov/cc/inventory/data/tables/ghg\\_inventory\\_trends\\_00-08\\_2010-05-12.pdf](http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_trends_00-08_2010-05-12.pdf) (accessed November 2011).

<sup>20</sup> California Energy Commission, 2007. *Inventory of California GHG Emissions and Sinks: 1990 to 2004 - Final Staff Report, publication # CEC-600-2006-013-SF*, Sacramento, CA. December 22, 2006; and January 23, 2007 update to that report.

ARB is responsible for developing the California GHG Emission Inventory. This inventory estimates the amount of GHGs emitted to and removed from the atmosphere by human activities within the State and supports the Assembly Bill (AB) 32 Climate Change Program, discussed below. ARB's current GHG emission inventory for the years 2000 to 2009 (using categories established by ARB) is shown in **Figure IV.F-1**. The emission inventory estimates are based on the actual amount of all fuels combusted in the State, which accounts for over 85 percent of the GHG emissions within California.

**Figure IV.F-1: California GHG Emissions by Sector (2000-2009 Average)**

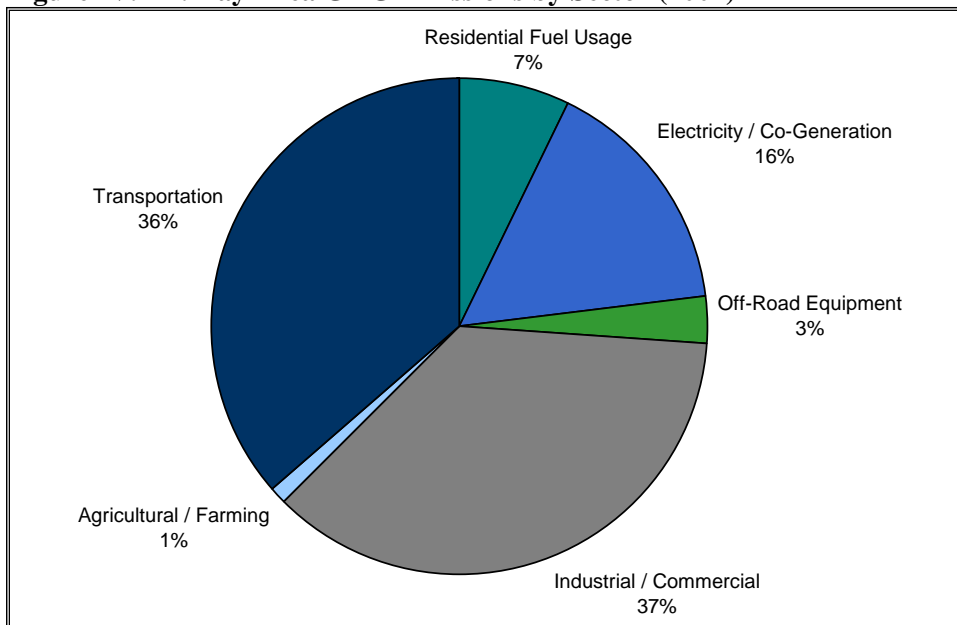


Note: The High GWP sector encompasses miscellaneous sources.

Source: ARB, 2011. *Trends in California GHG Emissions for 2000 to 2009 – by Category as Defined in the Scoping Plan*. December. Website: [www.arb.ca.gov/cc/inventory/data/tables/ghg\\_inventory\\_scopingplan\\_00-08\\_2010-05-12.pdf](http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-08_2010-05-12.pdf).

**Bay Area Emissions Inventory.** The BAAQMD has also prepared an inventory of GHG emissions for the Bay Area. The latest version of the inventory, updated in 2010, provides information on 2007 emissions.<sup>21</sup> Transportation and industrial/commercial uses are the largest sources of GHG emissions, each contributing 36.4 percent of the region's total CO<sub>2</sub>e emissions in the year 2007. The estimated GHG emissions for the year 2007 for the nine Bay Area counties totaled 95.8 MMT of CO<sub>2</sub>e. The Bay Area GHG emissions by sector for the year 2007 are shown in **Figure IV.F-2**.

<sup>21</sup> Bay Area Air Quality Management District, 2010. *Source Inventory of Bay Area GHG Emissions*. Website: [www.baaqmd.gov/~media/Files/Planning%20and%20Research/Emission%20Inventory/regionalinventory2007\\_2\\_10.ashx](http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Emission%20Inventory/regionalinventory2007_2_10.ashx). February.

**Figure IV.F-2: Bay Area GHG Emissions by Sector (2007)**

Source: BAAQMD, 2010. *Inventory of Bay Area GHG Emissions*. February.

**City of Oakland Emissions Inventory.** The City of Oakland, in partnership with the International Council for Local Environmental Initiatives (ICLEI), an international association of local, regional, and national governments and government organizations that have made a commitment to sustainable development, has prepared the Baseline Greenhouse Gas Emissions Inventory Report to determine the community-wide levels of GHG emissions that the City of Oakland emitted in its base year, 2005.<sup>22</sup> The community-wide levels reflect all the energy used and waste produced within the Oakland city limits. As shown in **Table IV.F-2**, Oakland emitted approximately 2.4 million tons of CO<sub>2</sub>e in 2005 from all major sources, nearly half of which were from transportation. The report shows that the City's emissions have increased by approximately 5 percent to 6 percent in each year since 2003.

The inventory report also estimated emissions from municipal government activities, which constitute approximately 1.5 percent of total community-wide emissions. The report also forecasts future community-wide emissions for 2020. From year 2005, emissions are forecasted to increase by 19.5 percent (to 2.9 million tons CO<sub>2</sub>e) by 2020, assuming continued GHG emissions at or above current rates into the future.

**Table IV.F-2: Oakland Community-wide GHG Emissions Summary – 2005 (tons/year)**

| Potential Source      | Tons of Carbon Dioxide Equivalent (CO <sub>2</sub> e) | Percent of Total |
|-----------------------|---|------------------|
| Transportation        | 1,138,767   | 47               |
| Commercial/Industrial | 709,199   | 29               |
| Residential           | 580,710   | 24               |
| <b>Total</b>          | <b>2,428,676</b>                                      | <b>100</b>       |

Source: ICLEI Oakland Baseline Greenhouse Gas Emissions Inventory, 2006.

<sup>22</sup> International Council for Local Environmental Initiatives, 2006. *City of Oakland Baseline Greenhouse Gas Emissions Inventory Report*, December.

**a. Regulatory Framework.** The regulatory framework and governmental activities addressing GHG emissions and global climate change are discussed in this section. Although GHG emissions are being addressed on an international level, federal, State, regional, and local activities are most applicable to the proposed project and are discussed below.

**(1) Federal Regulations.** The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the United States Supreme Court ruled [549 U.S. 497 (2007)] that the U.S. Environmental Protection Agency (EPA) has the authority to regulate CO<sub>2</sub> emissions under the Federal Clean Air Act (FCAA). While there currently are no adopted federal regulations for the control or reduction of GHG emissions, the EPA commenced several actions in 2009 to implement a regulatory approach to global climate change, including the ones described below.

On September 22, 2009, the EPA issued a final rule for mandatory reporting of GHGs from large GHG emission sources in the United States. In general, this national reporting requirement will provide the EPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of CO<sub>2</sub> per year. This publicly-available data will allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost-effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial GHGs, along with vehicle and engine manufacturers, will report at the corporate level. An estimated 85 percent of the total U.S. GHG emissions, from approximately 10,000 facilities, are covered by this rule.

On December 7, 2009, the EPA Administrator signed a final action under the CAA, finding that six GHGs (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, SF<sub>6</sub>) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles contribute to global climate change. This EPA action does not impose any requirements on industry or other entities. However, the findings are a prerequisite to finalizing the GHG emission standards for light-duty vehicles mentioned below. The EPA received ten petitions challenging this determination. On July 29, 2010, the EPA denied these petitions.

On April 1, 2010, the EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced a final joint rule to establish a national program consisting of new standards for model year 2012 through 2016 light-duty vehicles that will reduce GHG emissions and improve fuel economy. The EPA is finalizing the first-ever national GHG emissions standards under the CAA, and NHTSA is finalizing Corporate Average Fuel Economy standards under the Energy Policy and Conservation Act. The EPA GHG standards require light-duty vehicles to meet an estimated combined average emissions level of 250 grams of CO<sub>2</sub> per mile in model year 2016, equivalent to 35.5 miles per gallon.

In December 2010, the EPA issued its plan for establishing GHG pollution standards under the CAA in 2011. The agency looked at a number of sectors and is moving forward on GHG standards for fossil fuel power plants and petroleum refineries – two of the largest industrial sources, representing nearly 40 percent of the GHG pollution in the United States.<sup>23</sup>

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<sup>23</sup> U.S. Environmental Protection Agency, 2010. Press Release. December 23.

On August 9, 2011, the EPA and the NHTSA announced the first-ever standards to reduce GHG emissions and improve the fuel efficiency of heavy-duty trucks and buses. The final combined standards of the Heavy-Duty National Program will reduce CO<sub>2</sub> emissions by about 270 MMT and save about 530 million barrels of oil over the life of vehicles built for the 2014 to 2018 model years. The heavy duty sector addressed in the EPA and NHTSA rules (including the largest pickup trucks and vans, semi-trucks, and all types and sizes of work trucks and buses in between) accounts for nearly 6 percent of all U.S. GHG emissions and 20 percent of transportation emissions. In addition, air quality will continue to improve as less fuel use leads to reduced ozone and particulate matter.

**(2) State Regulations.** The ARB is typically the lead agency for implementing climate change regulations in the State. There are many regulations and statutes in California that address, both directly and indirectly, greenhouse gas emissions, such as renewable portfolio standards (SB 1078, SB 107, SB 2(1X)) and energy efficiency standards (Title 24, Cal. Code Regs.). Key State regulatory activities specifically addressing climate change and greenhouse gas emissions are discussed below.

**Assembly Bill 1493 (2002).** In a response to the transportation sector's significant contribution to California's CO<sub>2</sub> emissions, AB 1493 (Pavley) was enacted on July 22, 2002. AB 1493 requires the ARB to set GHG emission standards for passenger vehicles and light duty trucks (and other vehicles whose primary use is noncommercial personal transportation in the State) manufactured in 2009 and all subsequent model years. These standards (starting in model years 2009 to 2016) were approved by the ARB in 2004, but the needed waiver of Clean Air Act Preemption was not granted by the EPA until June 30, 2009. The ARB responded by amending its original regulation, now referred to as Low Emission Vehicle III GHG, to take effect for model years starting in 2017 to 2025.<sup>24</sup>

**Executive Order S-3-05 (2005).** Governor Arnold Schwarzenegger signed Executive Order S-3-05 on June 1, 2005, which proclaimed that California is vulnerable to the impacts of climate change. To combat those concerns, the executive order established California's GHG emissions reduction targets, which established the following goals:

- GHG emissions should be reduced to 2000 levels by 2010;
- GHG emissions should be reduced to 1990 levels by 2020; and
- GHG emissions should be reduced to 80 percent below 1990 levels by 2050.

The Secretary of the California Environmental Protection Agency (Cal/EPA) is required to coordinate efforts of various State agencies in order to collectively and efficiently reduce GHGs. A biannual progress report must be submitted to the Governor and State Legislature disclosing the progress made toward GHG emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, the coastline, and forestry, and report possible mitigation and adaptation plans to address these impacts.

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<sup>24</sup> California Air Resources Board, 2010. California Clean Car Standards – Pavley, Assembly Bill 1493. Website: [arb.ca.gov/cc/ccms/ccms.htm](http://arb.ca.gov/cc/ccms/ccms.htm) (accessed November 2011).

**Assembly Bill 32 (2006), California Global Warming Solutions Act.** California's major initiative for reducing GHG emissions is AB 32, passed by the State legislature on August 31, 2006. This effort aims at reducing GHG emissions to 1990 levels by 2020. The ARB has established the level of GHG emissions in 1990 at 427 MMT CO<sub>2</sub>e. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected business-as-usual 2020 emissions of 596 MMT. AB 32 requires the ARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The Scoping Plan was approved by the ARB on December 11, 2008, and contains the main strategies California will implement to achieve the reduction of approximately 169 MMT of CO<sub>2</sub>e, or approximately 30 percent, from the State's projected 2020 emission level of 596 MMT of CO<sub>2</sub>e under a business-as-usual scenario (this is a reduction of 42 MMT CO<sub>2</sub>e, or almost 10 percent from 2002-2004 average emissions). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the State's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO<sub>2</sub>e);
- The Low-Carbon Fuel Standard (15.0 MMT CO<sub>2</sub>e);
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO<sub>2</sub>e); and
- A renewable portfolio standard for electricity production (21.3 MMT CO<sub>2</sub>e).

The Scoping Plan identifies 18 emission reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related GHG targets, vehicle efficiency measures, goods movement, solar roof programs, industrial emissions, high speed rail, green building strategies, recycling, sustainable forests, water, and air. The measures would result in a total reduction of 174 MMT CO<sub>2</sub>e by 2020.

On August 24, 2011, the ARB unanimously approved both ARB's new supplemental assessment and re-approved its Scoping Plan, which provides the overall roadmap and rule measures to carry out AB 32. The ARB also approved a more robust CEQA equivalent document supporting the supplemental analysis of the cap-and-trade program, which went into effect in 2013.

ARB has not yet determined what amount of GHG reductions it recommends from local government operations and local land use decisions; however, the Scoping Plan states that land use planning and urban growth decisions will play an important role in the State's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions (meanwhile, ARB is also developing an additional protocol for community emissions). ARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The Scoping Plan states that the ultimate GHG reduction assignment to local government operations is to be determined. With regard to land use planning, the Scoping Plan expects an approximately 5.0 MMT CO<sub>2</sub>e reduction due to implementation of SB 375.

In addition to reducing GHG emissions to 1990 levels by 2020, AB 32 directed the ARB and the newly created Climate Action Team (CAT) to identify a list of "discrete early action GHG reduction

measures” that could be adopted and made enforceable by January 1, 2010. On January 18, 2007, Governor Schwarzenegger signed Executive Order S-1-07, further solidifying California’s dedication to reducing GHGs by setting a new Low Carbon Fuel Standard. The Executive Order sets a target to reduce the carbon intensity of California transportation fuels by at least 10 percent by 2020 and directs the ARB to consider the Low Carbon Fuel Standard as a discrete early action measure. In 2011, U.S. District Court Judge Lawrence O’Neil issued an injunction preventing implementation of the Low Carbon Fuel Standard, ruling that it is unconstitutional. In September 2013, the Ninth Circuit of Appeal upheld the Low Carbon Fuel Standard.

In June 2007, the ARB approved a list of 37 early action measures, including three discrete early action measures (Low Carbon Fuel Standard, Restrictions on GWP Refrigerants, and Landfill CH<sub>4</sub> Capture).<sup>25</sup> Discrete early action measures are measures that were required to be adopted as regulations and made effective no later than January 1, 2010, the date established by Health and Safety Code Section 38560.5. The ARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures. These measures relate to truck efficiency, port electrification, reduction of PFCs from the semiconductor industry, reduction of propellants in consumer products, proper tire inflation, and SF<sub>6</sub> reductions from the non-electricity sector. The combination of early action measures is estimated to reduce State-wide GHG emissions by nearly 16 MMT.<sup>26</sup>

**Senate Bill 97 (2007).** SB 97, signed by the Governor in August 2007 (Chapter 185, Statutes of 2007; Public Resources Code, Sections 21083.05 and 21097), acknowledges climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the OPR to prepare, develop, and transmit to the California Resources Agency guidelines for mitigating GHG emissions or the effects of GHG emissions, as required by CEQA.

The California Natural Resources Agency adopted the amendments to the *CEQA Guidelines* in January 2010, which went into effect in March 2010. The amendments do not identify a threshold of significance for GHG emissions, nor do they prescribe assessment methodologies or specific mitigation measures. The amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The amendments also encourage public agencies to make use of programmatic mitigation plans and programs when they perform individual project analyses.

**Senate Bill 375 (2008).** Signed into law on October 1, 2008, SB 375 supplements GHG reductions from new vehicle technology and fuel standards with reductions from more efficient land use patterns and improved transportation. Under the law, the ARB approved GHG reduction targets in February 2011 for California’s 18 federally designated regional planning bodies, known as Metropolitan Planning Organizations (MPOs). The ARB may update the targets every 4 years and must update them every 8 years. MPOs in turn must demonstrate how their plans, policies and transportation investments meet the targets set by the ARB through Sustainable Community

<sup>25</sup> California Air Resources Board, 2007. *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*. October.

<sup>26</sup> California Air Resources Board, 2007. “ARB approves tripling of early action measures required under AB 32” News Release 07-46. Website: [www.arb.ca.gov/newsrel/nr102507.htm](http://www.arb.ca.gov/newsrel/nr102507.htm). October 25.

Strategies (SCS). The SCS are included with the Regional Transportation Plan (RTP), a report required by State law. However, if an MPO finds that their SCS will not meet the GHG reduction target, they may prepare an Alternative Planning Strategy (APS). The APS identifies the impediments to achieving the targets.

**(3) Bay Area Air Quality Management District.** BAAQMD is the regional government agency that regulates sources of air pollution within the nine San Francisco Bay Area counties. The BAAQMD regulates GHG emissions through the following plans, programs, and guidelines.

**Clean Air Plans.** BAAQMD and other air districts prepare clean air plans in accordance with the State and federal Clean Air Acts. The Bay Area 2010 Clean Air Plan (CAP) is a comprehensive plan to improve Bay Area air quality and protect public health through implementation of a control strategy designed to reduce emissions and ambient concentrations of harmful pollutants. The most recent CAP also includes measures designed to reduce GHG emissions.

**BAAQMD Climate Protection Program.** The BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the San Francisco Bay Area Air Basin. The climate protection program includes measures that promote energy efficiency, reduce vehicle miles traveled, and develop alternative sources of energy, all of which assist in reducing emissions of GHG and in reducing air pollutants that affect the health of residents. BAAQMD also seeks to support current climate protection programs in the region and to stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders.

**BAAQMD CEQA Air Quality Guidelines.** The BAAQMD *CEQA Air Quality Guidelines* were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. The guidelines also include recommended assessment methodologies for air toxics, odors, and greenhouse gas emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Guidelines. In May 2011, the updated BAAQMD *CEQA Air Quality Guidelines* were amended to include a risk and hazards threshold for new receptors and modified procedures for assessing impacts related to risk and hazard impacts.

On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance in the BAAQMD *CEQA Air Quality Guidelines*. The Court of Appeal's decision is currently pending before the California Supreme Court, although the specific issue taken up by the court for review is whether CEQA requires an analysis of how existing environmental conditions will impact future residents or users of a proposed project. Following the court order, the BAAQMD released revised *CEQA Air Quality Guidelines* in May of 2012 that include guidance on calculating air pollution emissions, obtaining information regarding the health impacts of air pollutants, and identifying potential mitigation measures, and which set aside the significance thresholds.

Under the 2011 *CEQA Air Quality Guidelines*, a local government may prepare a qualified GHG Reduction Strategy that is consistent with AB 32 goals. If a project is consistent with an adopted qualified GHG Reduction Strategy and General Plan that addresses the project's GHG emissions, it



can be presumed that the project will not have significant GHG emissions under CEQA.<sup>27</sup> The 2011 Guidelines also included a quantitative threshold for project level analyses based on estimated GHG emissions as well as per capita metrics.

**(4) Metropolitan Transportation Commission/Association of Bay Area Governments Sustainable Communities Strategy.** The Metropolitan Transportation Commission (MTC) is the federally recognized MPO for the nine county Bay Area, which includes Alameda County and the City of Oakland. On July 18, 2013, the Plan Bay Area was jointly approved by the Association of Bay Area Governments (ABAG) Executive Board and by the Metropolitan Transportation Commission (MTC). The Plan includes the region's Sustainable Communities Strategy and the 2040 Regional Transportation Plan. Also on July 18, 2013, the two agencies adopted the final Environmental Impact Report on Plan Bay Area, and the ABAG Executive Board separately approved a state-mandated Regional Housing Needs Allocation for 2014 through 2022. MTC separately approved the 2013 Transportation Improvement Program (TIP), which updates the list of Bay Area projects that receive federal funds, are subject to federal action, or are considered regionally significant; as well as a final Air Quality Conformity Analysis that establishes both the TIP and Plan Bay Area comply with federal air pollution standards. A number of lawsuits were filed challenging the One Plan Bay Area adoption.

**(5) City of Oakland.** The City of Oakland addresses climate change by way of its General Plan as well as a large number of other programs and policy initiatives.

**City of Oakland General Plan.** Five elements of the City's General Plan address climate change.

*Land Use and Transportation Element (LUTE).* The LUTE (which includes the Pedestrian Master Plan and Bicycle Master Plan) of the Oakland General Plan contains the following policies that address issues related to GHG Emissions and Climate Change:

- Policy T.2.1: Transit-oriented development should be encouraged at existing or proposed transit nodes, defined by the convergence of two or more modes of public transit such as BART, bus, shuttle service, light rail or electric trolley, ferry, and inter-city or commuter rail.
- Policy T.2.2: Transit-oriented developments should be pedestrian-oriented, encourage night and day time use, provide the neighborhood with needed goods and services, contain a mix of land uses, and be designed to be compatible with the character of surrounding neighborhoods.
- Policy T3.5: The City should include bikeways and pedestrian ways in the planning of new, reconstructed, or realigned streets, wherever possible.
- Policy T3.6: The City should encourage and promote use of public transit in Oakland by expediting the movement of and access to transit vehicles on designated "transit streets" as shown on the Transportation Plan.
- Policy T4.2: Through cooperation with other agencies, the City should create incentives to encourage travelers to use alternative transportation options.
- Policy N3.2: In order to facilitate the construction of needed housing units, infill development that is consistent with the General Plan should take place throughout the City of Oakland.

<sup>27</sup> Bay Area Air Quality Management District, 2011. *CEQA Air Quality Guidelines*. May.

- Policy T4.5: The City should prepare, adopt, and implement a Bicycle and Pedestrian Master Plan as a part of the Transportation Element of [the] General Plan.

*Open Space, Conservation and Recreation Element (OSCAR).* The OSCAR Element includes policies that address GHG reduction and global climate change. Listed below are OSCAR policies that encourage the provision of open space, which increases vegetation area (trees, grass, landscaping, etc.) to effect cooler climate, reduce excessive solar gain, and absorb CO<sub>2</sub>; OSCAR policies that encourage stormwater management, which relates to the maintenance of floodplains and infrastructure to accommodate potential increased storms and flooding; and OSCAR policies that encourage energy efficiency and use of alternative energy sources, which directly address reducing GHG emissions.

- Policy OS-1.1: Conserve existing City and Regional Parks characterized by steep slopes, large groundwater recharge areas, native plant and animal communities, extreme fire hazards, or similar conditions.
- Policy OS.2.1: Manage Oakland's urban parks to protect and enhance their open space character while accommodating a wide range of outdoor recreational activities.
- Policy CO-5.3: Employ a broad range of strategies, compatible with the Alameda Countywide Clean Water Program.
- Policy CO-12.3: Expand existing transportation systems management and transportation demand management strategies which reduce congestion, vehicle idling, and travel in single passenger autos.
- Policy CO-12.5: Require new industry to use best available control technology to remove pollutants, including filtering, washing, or electrostatic treatment of emissions.
- Policy CO-13.2: Support public information campaigns, energy audits, the use of energy-saving appliances and vehicles, and other efforts which help Oakland residents, businesses, and City operations become more energy efficient.
- Policy CO-13.3: Encourage the use of energy-efficient construction and building materials. Encourage site plans for new development which maximize energy efficiency.
- Policy CO-13.4: Accommodate the development and use of alternative energy resources, including solar energy and technologies which convert waste or industrial byproducts to energy, provided that such activities are compatible with surrounding land uses and regional air and water quality requirements.

*Historic Preservation Element (HPE).* A key HPE policy relevant to climate change encourages the reuse of existing building (and building materials) resources, which could reduce landfill material (a source of methane, a GHG), avoid the incineration of materials (which produces CO<sub>2</sub> as a by-product), avoid the need to transport materials to disposal sites (which produces GHG emissions), and eliminate the need for materials to be replaced by new product (which often requires the use of fossil fuels to obtain raw and manufacture new material).<sup>28</sup>

*Safety Element.* Safety Element policies that address wildfire hazards relate to climate change in that increased temperatures could increase fire risk in areas that become drier due to climate

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<sup>28</sup> U.S. Environmental Protection Agency, 2006a. General Information on the Link Between Solid Waste and Greenhouse Gas Emissions, October. Website: [www.epa.gov/climatechange/wycd/waste/generalinfo.html](http://www.epa.gov/climatechange/wycd/waste/generalinfo.html) (accessed August 10, 2007).

change.<sup>29</sup> Also, wildfire results in the loss of vegetation; carbon is stored in vegetation, and when the vegetation burns, the carbon returns to the atmosphere.<sup>30</sup> The occurrence of wildfire also emits particulate matters into the atmosphere. Safety Element policies regarding storm-induced flooding hazards related to the potential to accommodate potential increase in storms and flooding as a result of climate change.

- Policy FI-3: Prioritize the reduction of the wildfire hazard, with an emphasis on prevention.
- Policy FL-1: Enforce and update local ordinances and comply with regional orders that would reduce the risk of storm-induced flooding.
- Policy FL-2: Continue or strengthen city programs that seek to minimize the storm-induced flooding hazard.

*Housing Element.* The Housing Element contains the following policies that address issues related to GHG emissions and climate change:

- Policy 7.1: Develop and promote programs to foster the incorporation of sustainable design principles, energy efficiency and smart growth principles into residential developments. Offer education and technical assistance regarding sustainable development to project applicants.
- Policy 7.2: Encourage the incorporation of energy conservation design features in existing and future residential development beyond minimum standards required by State building code.
- Policy 7.3: Continue to direct development toward existing communities and encourage infill development at densities that are higher than – but compatible with – the surrounding communities. Encourage development in close proximity to transit, and with a mix of land uses in the same zoning district, or on the same site, so as to reduce the number and frequency of trips made by automobile.
- Policy 7.4: Work with developers to encourage construction of new housing that, where feasible, reduces the footprint of the building and landscaping, preserves green spaces, and supports ecological systems.

**City of Oakland Sustainability Programs.** Oakland's sustainability efforts are managed by the Oakland Sustainability Community Development Initiative (SDI), created in 1998 (Ordinance 74678 C.M.S.). Efforts are organized into the following six major categories: Energy; Urban Design; Transportation; Waste Reduction; Water; and Environmental Health. Initiatives relevant to climate change and global warming are summarized below:<sup>31</sup>

*Energy Efficiency Participation.* The City of Oakland has promoted energy efficiency with the following programs: Community Youth Energy Services (CYES), which hires and trains local youth to provide free in-home energy audits, education, and hardware installation to low income residents; CA-Leadership in Energy Efficiency Program (CA-LEEP), a CPUC-funded program which will help Oakland develop the energy efficiency component of the City's overall Sustainability Plan, position-

<sup>29</sup> U.S. Environmental Protection Agency, 2006b. *Climate Change – Health and Environmental Effects: Health*. Website: [www.epa.gov/climatechange/effects/health.html](http://www.epa.gov/climatechange/effects/health.html) (accessed July 24, 2007).

<sup>30</sup> National Aeronautics and Space Administration, 2005. *El Nino-Related Fires Increase Greenhouse Gas Emissions, January 5*. Website: [www.nasa.gov/centers/goddard/news/topstory/2004/0102firenino.html](http://www.nasa.gov/centers/goddard/news/topstory/2004/0102firenino.html) (accessed August 10, 2007).

<sup>31</sup> Oakland, City of, 2007. *Oakland Sustainable Community Development Initiative*. Website: [www.sustainableoakland.com/Page774.aspx](http://www.sustainableoakland.com/Page774.aspx) (accessed June 25, 2007). Updated March.

ing the City for funding from state and federal sources; the LED Christmas Light Project, a PG&E co-sponsored holiday light exchange, promoting energy efficiency and public outreach; and Savings by Design Lead Incentive Pilot, in which PG&E and the City collaborate to foster energy efficient building designs in new commercial and mixed-use construction and major renovation projects.

*Renewable Energy.* The City's Sustainability Program has set a priority of promoting renewable energy with a particular emphasis on solar. Aggressive renewable energy goals have been established, including: 50 percent of the city's entire electricity use from renewable sources by 2017; and 100 percent of the city's entire electricity use from renewable sources by 2030.

*Green Building.* The City of Oakland has implemented Green Building principles in City buildings through the following programs: Civic Green Building Ordinance (Ordinance No. 12658 C.M.S., 2005), requiring, for certain large civic projects, techniques that minimize the environmental and health impacts of the built environment through energy, water and material efficiencies and improved indoor air quality, while also reducing the waste associated with construction, maintenance and remodeling over the life of the building; Green Building Guidelines (Resolution No. 79871, 2006) which provides guidelines to Alameda County residents and developers regarding construction and remodeling; and Green Building Education Incentives for private developers. The City adopted a Green Building ordinance for private development projects in October of 2010.

*Green Economy, Business and Jobs/Green Business.* The Alameda County Green Business Program offers technical assistance and incentives to businesses and agencies wishing to go beyond basic regulatory requirements. Additionally, the City implemented a Socially Responsible Business Task Force, which created a checklist designed to measure the relative level of social and environmental responsibility of firms nominated to receive major financial assistance from the City.

*Waste Reduction and Recycling.* The City of Oakland has implemented a residential recycling program increasing collection of yard trimmings and food waste. This program has increased total yard trimming collections by 46 percent compared to 2004, and recycling tonnage by 37 percent. The City also adopted Construction and Demolition Recycling, for which the City passed a resolution in July 2000 (Ordinance 12253. OMC Chapter 15.34), requiring certain nonresidential or apartment house projects to recycle 100 percent of all Asphalt & Concrete (A/C) materials and 65 percent of all other materials.

*Polystyrene Foam Ban Ordinance.* In June 2006 the Oakland City Council passed the Green Food Service Ware Ordinance (Ordinance 14727, effective as of January 1, 2007), which prohibits the use of polystyrene foam disposable food service ware and requires, when cost neutral, the use of biodegradable or compostable disposable food service ware by food vendors and City facilities.

*Zero Waste Resolution.* In March 2006 the Oakland City Council adopted a Zero Waste Goal by 2020 Resolution (Resolution 79774 C.M.S.), and commissioned the creation of a Zero Waste Strategic Plan to achieve the goal.

*Stormwater Management.* On February 19, 2003, the Regional Water Quality Control Board, San Francisco Bay Region, issued a municipal stormwater permit under the National Pollutant Discharge Elimination System (NPDES) permit program to the Alameda Countywide Clean Water Program (ACCWP). The purpose of the permit is to reduce the discharge of pollutants in stormwater to the maximum extent practicable and to effectively prohibit non-stormwater discharges into

municipal storm drain systems and watercourses. The City of Oakland, as a member of the ACCWP, is a co-permittee under the ACCWP's permit and is, therefore, subject to the permit requirements.

*Provision C.3 of the NPDES Permit.* Provision C.3 of the NPDES permit is the section of the permit containing stormwater pollution management requirements for new development and redevelopment projects. Among other things, Provision C.3 requires that certain new development and redevelopment projects incorporate post-construction stormwater pollution management measures, including stormwater treatment measures, stormwater site design measures, and source control measures, to reduce stormwater pollution after the construction of the project. These requirements are in addition to standard stormwater-related best management practices (BMPs) required during construction.

*Community Gardens and Farmer's Markets.* Community Gardening locations include Arroyo Viejo, Bella Vista, Bushrod, Golden Gate, Lakeside Horticultural Center, Marston Campbell, Temescal, and Verdesse Carter. Weekly Farmer's Markets locations include the Jack London Square, Old Oakland, Grand Lake, Mandela, and Temescal districts. Both efforts promote and facilitate the principal of growing and purchasing locally, which effects reductions in truck and vehicle use and GHG emissions.

**City of Oakland Energy and Climate Action Plan.** The Oakland City Council adopted the Oakland Energy and Climate Action Plan (ECAP) on December 4, 2012. The purpose of the ECAP is to identify and prioritize actions the City can take to reduce energy consumption and GHG emissions associated with Oakland. The plan establishes GHG reduction actions, as well as frameworks for coordinating implementation and monitoring and reporting on progress. The ECAP outlines a ten year plan including more than 150 actions that will enable Oakland to achieve a 36 percent reduction in GHG emission from transportation, building energy use, and material consumption and waste. Priority Actions related to non-residential development in the plan include the following:

- PA 7. Adopt a Green Building Ordinance
- PA 8. Offer Property-Based Energy Financing
- PA 15. Create an Oakland-Specific Water-Efficient Landscaping Ordinance

**b. City of Oakland's Standard Conditions of Approval.** The City's Standard Conditions of Approval relevant to GHG emissions are listed below. The Conditions of Approval will be adopted as requirements of the proposed project if the project is approved by the City. In addition, SCA HYD-5 address storm drainage and sewer requirements and SCA UTL-1 addresses construction waste and recycling.

**For OPC2, Clinical Support Building and Family Residence Building:  
SCA GHG-1a: Compliance with the Green Building Ordinance, OMC Chapter 18.02.**

*Prior to issuance of a demolition, grading, or building permit*

The applicant shall comply with the requirements of the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the Green Building Ordinance, OMC Chapter 18.02.

- a) The following information shall be submitted to the Building Services Division for review and approval with the application for a building permit:

- i. Documentation showing compliance with Title 24 of the 2008 California Building Energy Efficiency Standards.
  - ii. Completed copy of the final green building checklist approved during the review of the Planning and Zoning permit.
  - iii. Permit plans that show, in general notes, detailed design drawings, and specifications as necessary, compliance with the items listed in subsection (b) below.
  - iv. Copy of the signed statement by the Green Building Certifier approved during the review of the Planning and Zoning permit that the project complied with the requirements of the Green Building Ordinance.
  - v. Signed statement by the Green Building Certifier that the project still complies with the requirements of the Green Building Ordinance, unless an Unreasonable Hardship Exemption was granted during the review of the Planning and Zoning permit.
  - vi. Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.
- b) The set of plans in subsection (a) shall demonstrate compliance with the following:
- i. CALGreen mandatory measures.
  - ii. All pre-requisites per LEED for the OPC2 and the Clinical Support Building and GreenPoint Rated checklist for the Family Residence Building approved during the review of the Planning and Zoning permit, or if applicable.
  - iii. LEED Silver for the OPC2 and the Clinical Support Building and 25 GreenPoint Rated points per the appropriate checklist approved during the Planning entitlement process.
  - iv. All green building points identified on the checklist approved during review of the Planning and Zoning permit, unless a Request for Revision Plan-check application is submitted and approved by the Planning and Zoning Division that shows the previously approved points that will be eliminated or substituted.
  - v. The required green building point minimums in the appropriate credit categories.

*During construction*

The applicant shall comply with the applicable requirements CALGreen and the Green Building Ordinance, Chapter 18.02.

- a) The following information shall be submitted to the Building Inspections Division of the Building Services Division for review and approval:
- i. Completed copies of the green building checklists approved during the review of the Planning and Zoning permit and during the review of the building permit.
  - ii. Signed statement(s) by the Green Building Certifier during all relevant phases of construction that the project complies with the requirements of the Green Building Ordinance.
  - iii. Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.

*After construction, as specified below*

Within sixty (60) days of the final inspection of the building permit for the project, the Green Building Certifier shall submit the appropriate documentation to Build It Green for the Family Residence Building and GBCI for the OPC2 and the Clinical Support Building and attain the minimum certification/point level identified in subsection (a) above. Within one year of the final inspection of the building permit for the project, the applicant

shall submit to the Planning and Zoning Division the Certificate from the organization listed above demonstrating certification and compliance with the minimum point/certification level noted above.

**For OPC1 renovations and Landscaping:**

**SCA GHG-1b: Compliance with the Green Building Ordinance, OMC Chapter 18.02, for Building and Landscape Projects Using the StopWaste.Org Small Commercial or Bay Friendly Basic Landscape Checklist.**

*Prior to issuance of a building permit*

The applicant shall comply with the requirements of the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the Green Building Ordinance, (OMC Chapter 18.02.) for projects using the StopWaste.Org Small Commercial and the Bay Friendly Basic Landscape Checklist.

*Prior to issuance of a demolition, grading, or building permit*

The applicant shall comply with the requirements of the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the Green Building Ordinance, OMC Chapter 18.02.

- a) The following information shall be submitted to the Building Services Division for review and approval with the application for a Building permit:
  - i. Documentation showing compliance with the most recent Title 24 California Building Energy Efficiency Standards.
  - ii. Completed copy of the final green building checklist approved during the review of the Planning and Zoning permit.
  - iii. Permit plans that show in general notes, detailed design drawings, and specifications as necessary, compliance with the items listed in subsection (b) below.
  - iv. Other documentation to prove compliance.
- b) The set of plans in subsection (a) shall demonstrate compliance with the following:
  - i. CALGreen mandatory measures.
  - ii. All applicable green building measures identified on the StopWaste.Org checklist and Bay Friendly Basic Landscape Checklist approved during the review of a Planning and Zoning permit, or submittal of a Request for Revision Plan-check application that shows the previously approved points that will be eliminated or substituted.

*During construction*

The applicant shall comply with the applicable requirements of CALGreen and Green Building Ordinance, Chapter 18.02 for projects using the StopWaste.Org Small Commercial and Bay Friendly Basic Landscape Checklist.

- a) The following information shall be submitted to the Building Inspections Division for review and approval:
  - i. Completed copy of the green building checklists approved during review of the Planning and Zoning permit and during the review of the Building permit.
  - ii. Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.

**SCA GHG-2: Waste Reduction and Recycling.** The project applicant will submit a Construction & Demolition Waste Reduction and Recycling Plan (WRRP) and an Operational Diversion Plan (ODP) for review and approval by the Public Works Agency.

*Prior to issuance of demolition, grading, or building permit*

Chapter 15.34 of the Oakland Municipal Code outlines requirements for reducing waste and optimizing construction and demolition (C&D) recycling. Affected projects include all new construction, renovations/alterations/modifications with construction values of \$50,000 or more (except R-3), and all demolition (including soft demo). The WRRP must specify the methods by which the development will divert C&D debris waste gener-

ated by the proposed project from landfill disposal in accordance with current City requirements. Current standards, FAQs, and forms are available at [www.oaklandpw.com/Page39.aspx](http://www.oaklandpw.com/Page39.aspx) or in the Green Building Resource Center. After approval of the plan, the project applicant shall implement the plan.

#### *Ongoing*

The ODP will identify how the project complies with the Recycling Space Allocation Ordinance, (Chapter 17.118 of the Oakland Municipal Code), including capacity calculations, and specify the methods by which the development will meet the current diversion of solid waste generated by operation of the proposed project from landfill disposal in accordance with current City requirements. The proposed program shall be implemented and maintained for the duration of the proposed activity or facility. Changes to the plan may be re-submitted to the Environmental Services Division of the Public Works Agency for review and approval. Any incentive programs shall remain fully operational as long as residents and businesses exist at the project site.

#### **SCA GHG-3: Greenhouse Gas (GHG) Reduction Plan.**

##### *Prior to issuance of a construction-related permit and ongoing as specified*

The project applicant shall retain a qualified air quality consultant to develop a Greenhouse Gas (GHG) Reduction Plan for City review and approval. The applicant shall implement the approved GHG Reduction Plan.

The goal of the GHG Reduction Plan shall be to increase energy efficiency and reduce GHG emissions to below at least one of the Bay Area Quality Management District's (BAAQMD's) CEQA Thresholds of Significance (1,100 metric tons of CO<sub>2</sub>e per year or 4.6 metric tons of CO<sub>2</sub>e per year per service population) to help achieve the City's goal of reducing GHG emissions. The GHG Reduction Plan shall include, at a minimum, (a) a detailed GHG emissions inventory for the project under a "business-as-usual" scenario with no consideration of project design features, or other energy efficiencies, (b) an "adjusted" baseline GHG emissions inventory for the project, taking into consideration energy efficiencies included as part of the project (including the City's Standard Conditions of Approval, proposed mitigation measures, project design features, and other City requirements), (c) a comprehensive set of quantified additional GHG reduction measures available to further reduce GHG emissions beyond the adjusted GHG emissions, and (d) requirements for ongoing monitoring and reporting to demonstrate that the additional GHG reduction measures are being implemented. If the project is to be constructed in phases, the GHG Reduction Plan shall provide GHG emission scenarios by phase.

Specifically, the applicant/sponsor shall adhere to the following:

- a) **GHG Reduction Measures Program.** Prepare and submit to the City Planning Director or his/her designee for review and approval a GHG Reduction Plan that specifies and quantifies GHG reduction measures that the project will implement by phase.

Potential GHG reduction measures to be considered include, but are not be limited to, measures recommended in BAAQMD's latest CEQA Air Quality Guidelines, the California Air Resources Board Scoping Plan (December 2008, as may be revised), the California Air Pollution Control Officers Association (CAPCOA) Quantifying Greenhouse Gas Mitigation Measures Document (August 2010, as may be revised), the California Attorney General's website, and Reference Guides on Leadership in Energy and Environmental Design (LEED) published by the U.S. Green Building Council.

The proposed GHG reduction measures must be reviewed and approved by the City Planning Director or his/her designee. The types of allowable GHG reduction measures include the following (listed in order of City preference): (1) physical design features; (2) operational features; and (3) the payment of fees to fund GHG-reducing programs (i.e., the purchase of "offset carbon credits," pursuant to item "b" below).

The allowable locations of the GHG reduction measures include the following (listed in order of City preference): (1) the project site; (2) off-site within the City of Oakland; (3) off-site within the



San Francisco Bay Area Air Basin; (4) off-site within the State of California; then (5) elsewhere in the United States.

- b) **Offset Carbon Credits Guidelines.** For GHG reduction measures involving the purchase of offset carbon credits, evidence of the payment/purchase shall be submitted to the City Planning Director or his/her designee for review and approval prior to completion of the project (or prior to completion of the project phase, if the project includes more one phase).

As with preferred locations for the implementation of all GHG reductions measures, the preference for offset carbon credit purchases include those that can be achieved as follows (listed in order of City preference): (1) within the City of Oakland; (2) within the San Francisco Bay Area Air Basin; (3) within the State of California; then (4) elsewhere in the United States. The cost of offset carbon credit purchases shall be based on current market value at the time purchased and shall be based on the Project's operational emissions estimated in the GHG Reduction Plan or subsequent approved emissions inventory, which may result in emissions that are higher or lower than those estimated in the GHG Reduction Plan.

- c) **Plan Implementation and Documentation.** For physical GHG reduction measures to be incorporated into the design of the project, the measures shall be included on the drawings submitted for construction-related permits. For operational GHG reduction measures to be incorporated into the project, the measures shall be implemented on an indefinite and ongoing basis beginning at the time of project completion (or at the completion of the project phase for phased projects).

For physical GHG reduction measures to be incorporated into off-site projects, the measures shall be included on drawings and submitted to the City Planning Director or his/her designee for review and approval and then installed prior to completion of the subject project (or prior to completion of the project phase for phased projects). For operational GHG reduction measures to be incorporated into off-site projects, the measures shall be implemented on an indefinite and ongoing basis beginning at the time of completion of the subject project (or at the completion of the project phase for phased projects).

- d) **Compliance, Monitoring and Reporting.** Upon City review and approval of the GHG Reduction Plan program by phase, the applicant/sponsor shall satisfy the following requirements for ongoing monitoring and reporting to demonstrate that the additional GHG reduction measures are being implemented. The GHG Reduction Plan requires regular periodic evaluation over the life of the Project (generally estimated to be at least 40 years) to determine how the Plan is achieving required GHG emissions reductions over time, as well as the efficacy of the specific additional GHG reduction measures identified in the Plan.

Implementation of the GHG reduction measures and related requirements shall be ensured through the project applicant/sponsor's compliance with Conditions of Approval adopted for the project. Generally, starting two years after the City issues the first Certificate of Occupancy for the project, the project applicant/sponsor shall prepare each year of the useful life of the project an Annual GHG Emissions Reduction Report (Annual Report), subject to the City Planning Director or his/her designee for review and approval. The Annual Report shall be submitted to an independent reviewer of the City Planning Director's or his/her designee's choosing, to be paid for by the project applicant/sponsor (see Funding, below), within two months of the anniversary of the Certificate of Occupancy.

The Annual Report shall summarize the project's implementation of GHG reduction measures over the preceding year, intended upcoming changes, compliance with the conditions of the Plan, and include a brief summary of the previous year's Annual Report results (starting the second year). The Annual Report shall include a comparison of annual project emissions to the baseline emissions reported in the GHG Plan.

The GHG Reduction Plan shall be considered fully attained when project emissions are less than either applicable numeric BAAQMD CEQA Thresholds, as confirmed by the City Planning Director

or his/her designee through an established monitoring program. Monitoring and reporting activities will continue at the City's discretion, as discussed below.

- e) **Funding.** Within two months after the Certificate of Occupancy, the project applicant/sponsor shall fund an escrow-type account or endowment fund to be used exclusively for preparation of Annual Reports and review and evaluation by the City Planning Director or his/her designee, or its selected peer reviewers. The escrow-type account shall be initially funded by the project applicant/sponsor in an amount determined by the City Planning Director or his/her designee and shall be replenished by the project applicant/sponsor so that the amount does not fall below an amount determined by the City Planning Director or his/her designee. The mechanism of this account shall be mutually agreed upon by the project applicant/sponsor and the City Planning Director or his/her designee, including the ability of the City to access the funds if the project applicant/sponsor is not complying with the GHG Reduction Plan requirements, and/or to reimburse the City for its monitoring and enforcement costs.
- f) **Corrective Procedure.** If the third Annual Report, or any report thereafter, indicates that, in spite of the implementation of the GHG Reduction Plan, the project is not achieving the GHG reduction goal, the project applicant/sponsor shall prepare a report for City review and approval, which proposes additional or revised GHG measures to better achieve the GHG emissions reduction goals, including without limitation, a discussion on the feasibility and effectiveness of the menu of other additional measures (Corrective GHG Action Plan). The project applicant/sponsor shall then implement the approved Corrective GHG Action Plan.

If, one year after the Corrective GHG Action Plan is implemented, the required GHG emissions reduction target is still not being achieved, or if the project applicant/owner fails to submit a report at the times described above, or if the reports do not meet City requirements outlined above, the City Planning Director or his/her designee may, in addition to its other remedies, (a) assess the project applicant/sponsor a financial penalty based upon actual percentage reduction in GHG emissions as compared to the percent reduction in GHG emissions established in the GHG Reduction Plan; or (b) refer the matter to the City Planning Commission for scheduling of a compliance hearing to determine whether the project's approvals should be revoked, altered or additional conditions of approval imposed.

The penalty as described in (a) above shall be determined by the City Planning Director or his/her designee and be commensurate with the percentage GHG emissions reduction not achieved (compared to the applicable numeric significance thresholds) or required percentage reduction from the "adjusted" baseline.

In determining whether a financial penalty or other remedy is appropriate, the City shall not impose a penalty if the project applicant/sponsor has made a good faith effort to comply with the GHG Reduction Plan.

The City would only have the ability to impose a monetary penalty after a reasonable cure period and in accordance with the enforcement process outlined in Planning Code Chapter 17.152. If a financial penalty is imposed, such penalty sums shall be used by the City solely toward the implementation of the GHG Reduction Plan.

- g) **Timeline Discretion and Summary.** The City Planning Director or his/her designee shall have the discretion to reasonably modify the timing of reporting, with reasonable notice and opportunity to comment by the applicant, to coincide with other related monitoring and reporting required for the project.
  - *Fund Escrow-type Account for City Review:* Certificate of Occupancy plus 2 months.
  - *Submit Baseline Inventory of "Actual Adjusted Emissions":* Certificate of Occupancy plus 1 year.
  - *Submit Annual Report #1:* Certificate of Occupancy plus 2 years.

- *Submit Corrective GHG Action Plan* (if needed): Certificate of Occupancy plus 4 years (based on findings of Annual Report #3).
- *Post Attainment Annual Reports*: Minimum every 3 years and at the City Planning Director's or his/her designee's reasonable discretion.

## 2. Impacts and Mitigation Measures

This section evaluates significant impacts and appropriate mitigation measures related to GHG emissions that could result from implementation of the proposed project.

**a. Thresholds of Significance.** The project would have a significant impact on the environment if it would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, for project-level analysis specifically:

- (1) For a project involving a land use development, produce total emissions of more than 1,100 metric tons of CO<sub>2</sub>e annually AND more than 4.6 metric tons of CO<sub>2</sub>e per service population annually.<sup>32</sup>
- (2) For a project involving a stationary source, produce total emissions of more than 10,000 metric tons of CO<sub>2</sub>e annually.<sup>33</sup>
- (3) Conflict with an applicable plan, policy or regulation adopted for the purposes of reducing greenhouse gas emissions.

**b. Project Impacts.** Implementation of the proposed project would result in the impacts as identified below.

**(1) Project Greenhouse Gas Emissions.** Development of the project would generate GHG emissions through construction and operational activities.

**Construction Greenhouse Gas Emissions.** Construction activities, such as building demolition, site preparation, site- grading, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, and motor vehicles transporting the construction crew would produce combustion emissions from various sources. During construction of the project, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O. Furthermore, CH<sub>4</sub> is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

Construction emissions were estimated for demolition and construction using the California Emissions Estimator Model (CalEEMod v.2013.2.2 for project construction equipment types and duration of use. Emission factors by equipment type were estimated using ARB's EMFAC 2011

<sup>32</sup> Land use developments are projects that do not require a BAAQMD permit to operate. The service population includes both the residents and the employees of the project. The project's impact would be considered significant if the emissions exceed BOTH the 1,100 metric tons threshold and the 4.6 metric tons threshold. Accordingly, the impact would be considered less than significant if the project's emissions are below EITHER of these thresholds.

<sup>33</sup> Stationary sources are projects that require a BAAQMD permit to operate.

model and the EPA's off-road engine Tier Standards (Code of Federal Regulations Title 40 Part 1039.102), in conjunction with the brake horse powers by equipment type identified in CalEEMod. Renovation emissions were estimated by first estimating the total amount of debris that would be generated by the project, then by using CalEEMod to generate the estimated number of truck trips based on the debris estimates. Emissions were then calculated using EMFAC2011 to determine total emissions associated with renovation activities. Construction emission calculation details are provided in Appendix E.

The City of Oakland does not have a threshold of significance specifically for project construction emissions. However, the City recommends that project construction GHG emissions be annualized over a period of 40 years and added to the expected emissions during operation of a project for comparison to the threshold. A 40-year period is used because 40 years is considered the average life expectancy of a building before it is remodeled with considerations for increased energy efficiency. The City's operational GHG emission thresholds are based on the BAAQMD thresholds. The BAAQMD thresholds were originally developed for project operation impacts only. Therefore, combining both the construction emissions and operation emissions for comparison to the threshold represents a conservative analysis of potential GHG impacts.

*Phase 1 Impacts.* Phase 1 would include the demolition of approximately 1,541 square feet of use, construction of the Outpatient Center Building (OPC2), a new entrance to the parking garage and a central utility plant. Phase 1 would also include interior hospital renovations. Total construction of Phase 1 is anticipated to take 58 months. Total construction GHG emissions for Phase 1 of the project are estimated to be 471 metric tons CO<sub>2</sub>e or 12 metric tons CO<sub>2</sub>e per year when annualized over a 40-year period. Construction-related emissions calculations are presented in Appendix E. Annualized construction emissions were added to operational emissions as shown in **Table IV.F-3: GHG Emissions in Metric Tons Per Year**. As shown in **Table IV.F-3**, GHG construction emissions associated with Phase 1 of the proposed project, combined with GHG operation emissions, would be less than significant.

**Table IV.F-3: GHG Emissions in Metric Tons per Year**

| Scenario   | CO <sub>2</sub> e<br>(Metric Tons per year) |
|--|---|
| <b>Existing</b>                                      |   |
| Hospital Operations                                  | 17,719                                      |
| Helicopter Emissions                                 | 75  |
| <b>Total Existing Emissions</b>                      | <b>17,794</b>                               |
| <b>Phase 1 Project</b>                               |   |
| Retained Hospital Operations <sup>b</sup>            | 14,745                                      |
| Phase 1 Project                                      | 766   |
| Annualized Construction                              | 12  |
| <b>Total Phase 1 Emissions</b>                       | <b>15,523</b>                               |
| <b>Net New Phase 1 Emissions</b>                     | <b>-2,271</b>                               |
| <b>Project Buildout</b>                              |   |
| Retained Hospital Operations <sup>b</sup>            | 13,616                                      |
| Phase 1 and Phase 2 Project                          | 3,692                                       |
| Total Annualized Construction Emissions <sup>a</sup> | 99  |
| <b>Total Project Buildout Emissions</b>              | <b>17,407</b>                               |
| <b>Net New Project Emissions</b>                     | <b>-387</b>                                 |
| Threshold  | 1,100                                       |
| Exceed?  | No  |

<sup>a</sup> Annualized construction emissions are total project construction emissions divided by 40 years.

<sup>b</sup> This includes helicopter emissions. It is estimated by CHRCO that helicopter flights would increase at the rate of approximately 1 percent per year through implementation of the Master Plan, with or without the elements proposed in Phase 1 or Phase 2 of the Master Plan.

Source: LSA Associates, Inc., 2014.

*Phase 2 Impacts.* Phase 2 of the project would include demolition of approximately 65,041 square feet of building space. Construction during Phase 2 would include construction of the Family Residence Building, the Clinical Support Building, the Link Building, the Helistop, the Acute Care Patient Pavilion, the Central Utility Plant and the new Parking Structure. Interior hospital renovations would also continue during Phase 2 of the project. Phase 2 would begin in 2020 and would take approximately 60 months. Using the same analysis methodology for Phase 2, total construction

emissions were estimated to be 3,490 metric tons CO<sub>2</sub>e for all Phase 2 construction activities or 87 tons per year when annualized over a 40-year period. Total annualized construction emissions are 99 metric tons per year CO<sub>2</sub>e. As shown in **Table IV.F-3**, project buildout construction emissions, combined with GHG operation emissions, would be less than significant.

**Operational Greenhouse Gas Emissions Analysis Methodology.** Long-term operation of the proposed project would generate GHG emissions from area and mobile sources, and indirect emissions from sources associated with energy consumption. Mobile-source emitters of GHGs would include project-generated vehicle trips associated with employee and visitor trips to the project site. Area-source emissions would be associated with activities such as landscaping and maintenance and use of consumer products. The methodology and qualitative description of the sources of GHG emissions related to transportation, electricity, water use, and solid waste disposal are described below. Helicopter use of the proposed helistop would also be a source of GHG emissions. The methodology used in evaluating the project's GHG emissions is discussed below.

*Area Sources.* Area sources of GHG emissions represent most direct sources of emissions located at the project site. This includes emissions from consumer products (like cleaners) and landscaping equipment. Area sources constitute a small, but not negligible portion of a project's overall emissions. Area source emissions for the project were calculated using default emission rates for the project land uses using CalEEMod.

*Transportation.* Transportation associated with the project would result in GHG emissions from the combustion of fossil fuels in daily automobile, delivery truck trips and ambulance trips. Transportation is the largest source of GHG emissions in California and represents approximately 38 percent of annual CO<sub>2</sub> emissions generated in the State. For land use development projects, vehicle miles traveled (VMT) and vehicle trips are the most direct indicators of GHG emissions associated with the project. Please refer to Section IV.D, Transportation and Circulation, for a discussion of the project's effects on the transportation system. The existing site generates 5,690 trips per day. Under Phase 1, the project would generate 5,930 trips for a net increase of 240 trips per day. Phase 2 would generate 6,920 trips, for a total net new trip generation of 1,230 daily trips. Trip rates were entered in CalEEMod to determine project related transportation emissions. Helicopter emissions, which are included as retained hospital emissions, were calculated using the Federal Aviation Administration's (FAA) Emissions and Dispersion Modeling System (EDMS) assuming 559 arrivals/departures per year for existing operations, 600 arrivals/departures for Phase 1 of the project and, 630 arrivals/departures for Phase 2 of the project.

*Electricity and Natural Gas.* Buildings represent 39 percent of primary energy use and 70 percent of electricity consumption in the U.S.<sup>34</sup> GHGs are released as a result of activities in buildings for which electricity and natural gas is used as energy sources. The primary source for GHG emissions from electricity is the indirect GHG emissions involved in supply power to the project site. The California Renewable Portfolio Standards, mandated by AB 32 would reduce PG&E's CO<sub>2</sub> intensity factor from 431 pounds CO<sub>2</sub> per MWh to 290 pounds CO<sub>2</sub> per MWh in the year 2020.<sup>35</sup> Natural gas usage covers space heating, water heating, and stoves. Additionally, energy efficiency influences

<sup>34</sup> U.S. Department of Energy, 2003. *Buildings Energy Data Book*.

<sup>35</sup> PG&E, 2013. *Greenhouse Gas Emission Factors: Guidance for PG&E Customers*. April. Website: [www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge\\_ghg\\_emission\\_factor\\_info\\_sheet.pdf](http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf) (accessed March 17, 2014).

overall power demand and therefore a project's electricity and natural gas related emissions. Following the City's significance thresholds, which states that stationary source equipment, including standby generators and boilers should be calculated separately from land use impacts, impacts from the project's generators and boilers are evaluated in Section 2, Stationary Source Greenhouse Gas Emissions below.

*Water Use.* Water- and wastewater-related GHG emissions are based on water supply and conveyance, water treatment, water distribution, and wastewater treatment. Each element of the water use cycle has unique energy intensities (in units of kWh/million gallons). Recognizing that the actual energy intensity in each component of the water use cycle will vary by utility, the California Energy Commission (CEC) assumes that approximately 3,950 kWh per million gallons are consumed for water that is supplied, treated, consumed, treated again, and disposed of in northern California. Water use estimates were calculated using default assumptions from CalEEMod. The project would increase water demand by approximately 28,186 gallons per day during Phase 1 and approximately 129,572 gallons per day under Phase 2 of the project.

*Solid Waste Disposal.* Solid waste generated by the project could contribute to GHG emissions in a variety of ways. Average waste generation rates from a variety of sources are available from the California Integrated Waste Management Board (CIWMB).<sup>36</sup> Land filling and other methods of disposal use energy as part of transporting and managing waste, and these activities produce additional GHGs to varying degrees. Land filling, the most common waste management practice, results in the release of CH<sub>4</sub> from the anaerobic decomposition of organic materials. CH<sub>4</sub> is 25 times more potent a GHG than CO<sub>2</sub>. However, landfill CH<sub>4</sub> can also be a source of energy. In addition, many materials in landfills do not decompose fully, and the carbon that remains is sequestered in the landfill and not released into the atmosphere. SCA UTL-2 would require the project to prepare an Operational Diversion Program that will identify how the project complies with the Recycling Space Allocation Ordinance, (Chapter 17.118 of the Oakland Municipal Code). Solid waste disposal emissions were calculated using default CalEEMod rates. CHRCO currently has a recycling program that diverts approximately 2 percent of their solid waste from landfills.

**Existing Site Emissions.** If a proposed project involves the removal of an existing GHG emission source, the BAAQMD recommends subtracting the existing emissions levels from the new development. CalEEMod, which has been approved for use by the BAAQMD, was used to calculate the long-term GHG emissions for the existing hospital buildings (692,416 gross square feet) that comprise the existing CHRCO campus, in addition to the existing emissions generated by boilers, generators and helicopters. As shown in **Table IV.F-3**, the existing uses generate approximately 17,794 metric tons per year CO<sub>2</sub>e. Additional calculation details are provided in Appendix E.

*Phase 1 Impacts.* The CalEEMod analysis for Phase 1 of the project included an evaluation of 82,100 square feet of medical office space, a 1,100 square foot central utility plant and a 7,000-square-foot parking garage. The Phase 1 analysis also includes the remaining 690,875 square feet of

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<sup>36</sup> California Department of Resources Recycling and Recovery, 2010. Estimated Solid Waste Generation Rates for Commercial Establishments. Website: [www.calrecycle.ca.gov/WasteChar/WasteGenRates/Commercial.htm](http://www.calrecycle.ca.gov/WasteChar/WasteGenRates/Commercial.htm) (accessed July 7, 2012).

existing hospital space<sup>37</sup> with a trip generation rate of 5,690 daily trips (or 240 net trips, taking into account existing uses on the site). Energy efficiency associated with the OPC2's LEED (Leadership in Energy and Environmental Design) Silver certification level for LEED Healthcare was also accounted for in the analysis. Green features of the project site would include, but are not limited to: efficient electrical systems, low-flow water systems, native landscaping, cool roofs, sustainable material usage, access to public transportation and secured bicycle parking and access. Emission results are shown in **Table IV.F-3** and indicate that emissions in 2020 under opening year of Phase 1 of the project would be lower than the emissions from current operations. This is primarily due to reduced vehicle emissions due to more stringent tailpipe emission standards. Additionally, emissions from electricity generation and the project's energy usage would be greatly reduced in 2020 due to Renewable Portfolio regulations required under AB 32. Therefore, as shown in **Table IV.F-3**, GHG impacts associated with Phase 1 of the project would be less than significant.

*Phase 2 Impacts.* Phase 2 of the project would include the demolition of 65,041 square feet of building area and construction of approximately 309,000 square feet of new building space for a net increase of 243,959 square feet. When combined with the new building area constructed during Phase 1, the project would add a net new total of 332,618 square feet of building area. Phase 2 of the project would generate an additional 990 vehicle trips per day for a total project trip generation of 1,230 net new trips. An emissions analysis using CalEEMod was performed to evaluate the following land uses:

- 82,100-square-foot medical office (240 net new trips) (Phase 1);
- 7,000-square-foot parking garage (Phase 1);
- 14,500-square-foot residential (Phase 2);
- 31,300-square-foot office (310 net new trips) (Phase 2);
- 144,500-square-foot hospital (680 net new trips) (Phase 2);
- 114,900-square-foot parking garage (Phase 2); and
- 625,834-square-foot hospital (retained hospital operations, 5,690 trips).

Consistent with the recommendation of the City of Oakland, total construction emissions have been annualized over a 40-year period and added to the annual results. Results of the analysis are shown in **Table IV.F-3** and indicate net new emissions associated with the project would also be less than under current conditions by 387 metric tons per year CO<sub>2</sub>e. Additional calculation details are provided in Appendix E. Therefore, as shown in **Table IV.F-3**, GHG impacts associated with Phase 2 of the project would be less than significant.

**Comparison to 1,100 Metric Tons Criterion.** Using the calculation methodology and model inputs described above, model results as shown in **Table IV.F-3** indicate the project would generate approximately 17,407 metric tons of CO<sub>2</sub>e per year including annualized project construction emissions. The existing uses on the project site currently generate 17,794 metric tons of CO<sub>2</sub>e per year as shown in **Table IV.F-3**. Therefore, the net decrease in CO<sub>2</sub>e would be approximately 387

<sup>37</sup> Retained hospital emission results differ from those estimated for Existing Hospital Operations for 2013 due to the reduced square footage of the remaining hospital and increased vehicle efficiency for retained hospital vehicle trips in the operation year of 2020 for Phase 1 and 2024 for Phase 2.

metric tons per year. Therefore, the project would not exceed the City of Oakland's significance criterion of 1,100 metric tons of CO<sub>2</sub>e per year.

**Comparison to 4.6 Metric Tons per Capita Criterion.** Based on the City's significance thresholds, a project would have a less-than-significant impact related to GHG emissions if it would generate less than 1,100 metric tons per year CO<sub>2</sub>e or would result in emissions per employee of less than 4.6 metric tons per year CO<sub>2</sub>e. Currently, there are approximately 2,166 employees at the project site (and the facilities do not provide for residential uses). The number of employees is expected to increase by approximately 205 at project buildout, resulting in approximately 2,371 total employees. Therefore, project CO<sub>2</sub>e emissions per service population would be 7.3 metric tons, which is above the threshold of 4.6 metric tons per service population per year.

According to the City's significance thresholds, a project would have a significant impact on the environment if it would exceed both criteria for GHG emissions (i.e., produce total emissions of more than 1,100 metric tons of CO<sub>2</sub>e annually and more than 4.6 metric tons of CO<sub>2</sub>e per service population annually). The project would not exceed the 1,100 metric tons of CO<sub>2</sub>e annually threshold, as the project would result in lower emissions in the year 2024 under project buildout than under existing conditions. Therefore, the proposed project would have a less-than-significant impact related to GHG emissions.

**(2) Stationary Source Greenhouse Gas Emissions.** According to the City of Oakland, projects that involve both a stationary source and a land use development should calculate each component separately and compare to the applicable threshold. The proposed project would generate GHG emissions from stationary sources including boilers and standby generators. The CHRCO campus currently uses seven natural gas boilers. The proposed project would add five new boilers and remove two for a net of 10 boilers on the project site. The project also uses four emergency standby generators; one generator will be added during Phase 1 and one will be removed under Phase 2 for a total net of four generators.

Project stationary source emissions are shown in **Table IV.F-4** for both existing operations and operations with the proposed project.

**Table IV.F-4: Project Operational Stationary Source Emissions**

|  | CO <sub>2</sub> e<br>(Metric Tons per Year) |
|--|---|
| <b>Existing Stationary Sources</b>         |   |
| Boilers                                    | 7,438.6                                     |
| Generators                                 | 28.2  |
| <b>Total Emissions Existing</b>            | <b>7,466.8</b>                              |
| <b>Phase 1 Stationary Sources</b>          |   |
| Boilers                                    | 11,232.2                                    |
| Generators                                 | 32.7  |
| <b>Total Phase 1 Emissions</b>             | <b>11,264.9</b>                             |
| <b>Net New Phase 1 Emissions</b>           | <b>3,798.1</b>                              |
| <b>Phase 2 Buildout Stationary Sources</b> |   |
| Boilers                                    | 11,232.2                                    |
| Generators                                 | 31.7  |
| <b>Total Project Emissions</b>             | <b>11,263.9</b>                             |
| <b>Net New Project Emissions</b>           | <b>3,797.1</b>                              |
| Threshold                                  | 10,000                                      |
| Exceed?                                    | No  |

Source: LSA Associates, 2014.

**Phase 1 Impacts.** Results indicate that the net new emissions associated with Phase 1 of the project would be 3,798.1 metric tons CO<sub>2</sub>e per year which is below the City's significance criterion for stationary sources of 10,000 metric tons per year. Therefore, GHG emissions from stationary sources for Phase 1 would be less than significant.

**Phase 2 Impacts.** Results of the Phase 2 analysis indicate emissions would be slightly lower than under Phase 1. This is due to the removal of one generator under Phase 2 of project operation.



Net new emissions would be 3,797.1 metric tons per year of CO<sub>2</sub>e which is below the City's significance criterion for stationary sources of 10,000 metric tons per year. Therefore, GHG emissions from stationary sources for Phase 2 (i.e., buildout) would be less than significant.

Emission calculation details are provided in Appendix E.

**(3) Consistency with Plans.** The Cal/EPA CAT and the ARB have developed several reports to achieve the State's GHG targets that rely on voluntary actions of California businesses, local government and community groups, and State incentives and regulatory programs. These include the CAT's 2006 *Report to Governor Schwarzenegger and the Legislature*, ARB's 2007 *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California*,<sup>38</sup> and ARB's *Climate Change Scoping Plan: a Framework for Change*.<sup>39</sup> These reports identify strategies to reduce California's emissions to the levels proposed in Executive Order S-3-05 and AB 32. The adopted Scoping Plan includes proposed GHG reductions from direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as cap-and-trade systems.

In addition to reducing GHG emissions to 1990 levels by 2020, AB 32 directed ARB to identify a list of "discrete early action GHG reduction measures" that can be adopted and made enforceable by January 1, 2010. In June 2007, ARB approved a list of 37 early action measures, including three discrete early action measures (Low Carbon Fuel Standard, Restrictions on High Global Warming Potential Refrigerants,<sup>40</sup> and Landfill Methane Capture<sup>41</sup>). Discrete early action measures are measures that are required to be adopted as regulations and made effective no later than January 1, 2010, the date established by Health and Safety Code (HSC) Section 38560.5. The ARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures.<sup>42</sup>

ARB's focus in identifying the early action items was to recommend measures that ARB staff concluded were "expected to yield significant GHG emission reductions, [and] are likely to be cost-effective and technologically feasible." The combination of early action measures is estimated to reduce Statewide GHG emissions by nearly 16 MMT. Accordingly, the early action items focus on industrial production processes, and the agriculture and transportation sectors. Early action items associated with industrial production and agriculture do not apply to the proposed project. The transportation sector early action items such as truck efficiency, low carbon fuel standard, proper tire inflation, truck stop electrification, and the strengthening of light duty vehicle standards are either not specifically applicable to the proposed project or would result in a reduction of GHG emissions associated with the project but are under the control of other regulatory agencies. State measures include emission reductions assumed as part of the Scoping Plan, including light-duty vehicle GHG

<sup>38</sup> California Air Resources Board, 2007. *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*. October.

<sup>39</sup> California Air Resources Board, 2008. *Climate Change Scoping Plan: a framework for change*. December.

<sup>40</sup> Ibid.

<sup>41</sup> Ibid.

<sup>42</sup> Ibid.

standards (Pavley Standards), the low carbon fuel standard, and energy efficiency measures. Therefore, the project would not conflict with the ARB's AB 32 Scoping Plan.

The project would also not conflict with the City of Oakland's adopted Energy and Climate Action Plan as the proposed project would be subject to the City's regulatory requirements to reduce GHG emissions. The City's SCAs also would include conditions to address adherence to best management construction practices and equipment use, to reduce demand for single occupancy vehicle travel, to increase landscaping to absorb CO<sub>2</sub>e emissions, and facilitate waste reduction and recycling.

Therefore, the proposed project would not conflict with any applicable plans, policies or regulations adopted with the intent to reduce GHG emissions. The impact would be less than significant.

**c. Cumulative Impacts.** Cumulative impacts are the collective impacts of one or more past, present, or future projects, that when combined, result in adverse changes to the environment. Climate change is a global environmental problem in which: (a) any given development project contributes only a small portion of any net increase in GHGs and (b) global growth is continuing to contribute large amounts of GHGs across the world. Land use projects may contribute to the phenomenon of global climate change in ways that would be experienced worldwide, and with some specific effects felt in California. However, no scientific study has established a direct causal link between individual land use project impacts and global warming.

The combination of GHG emissions from past, present, and future projects contributes substantially to the phenomenon of global climate change and its associated environmental impacts. No individual project would result in a measurable impact on global climate change. Therefore, this section has addressed climate change primarily as a cumulative impact. As noted above, in developing the threshold of significance for GHG emissions, the BAAQMD identified the emissions level for which a project would conflict with existing California legislation adopted to reduce Statewide GHG emissions. According to the BAAQMD, if a project would generate GHG emissions above the threshold level, it would be considered to contribute substantially to a cumulative impact, and would be considered significant. As indicated in the analysis presented above, the proposed project would not exceed the project-level significance thresholds established by the City and therefore the proposed project would not have a significant cumulative impact related to GHG emissions and global climate change.

## G. NOISE

This section describes existing noise and vibration conditions, sets forth criteria for determining the significance of noise and vibration impacts, and estimates the likely noise and vibration impacts that would result from construction and operation of the proposed project. This section incorporates the findings of the project's Helistop Noise Assessment report, prepared by Brown-Buntin Associates.<sup>1</sup> The report is included in Appendix D of this document. Mitigation measures are identified, as necessary, to address significant environmental impacts.

### 1. Setting

This section describes the fundamentals of noise and vibration, summarizes the regulatory framework, and describes the existing noise environment of the project site and its vicinity.

**a. Characteristics of Sound.** Noise is generally defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is the number of complete vibrations or cycles per second of a wave that results in the range of tone from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment, and it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effects on adjacent sensitive land uses.

**(1) Measurement of Sound.** Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. **Table IV.G-1** contains a list of typical acoustical terms and definitions. **Table IV.G-2** shows representative outdoor and indoor noise levels in units of dBA.

A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, 30 dB is 1,000 times more intense. Each 10-dB increase in sound level is perceived as approximately a doubling of loudness.

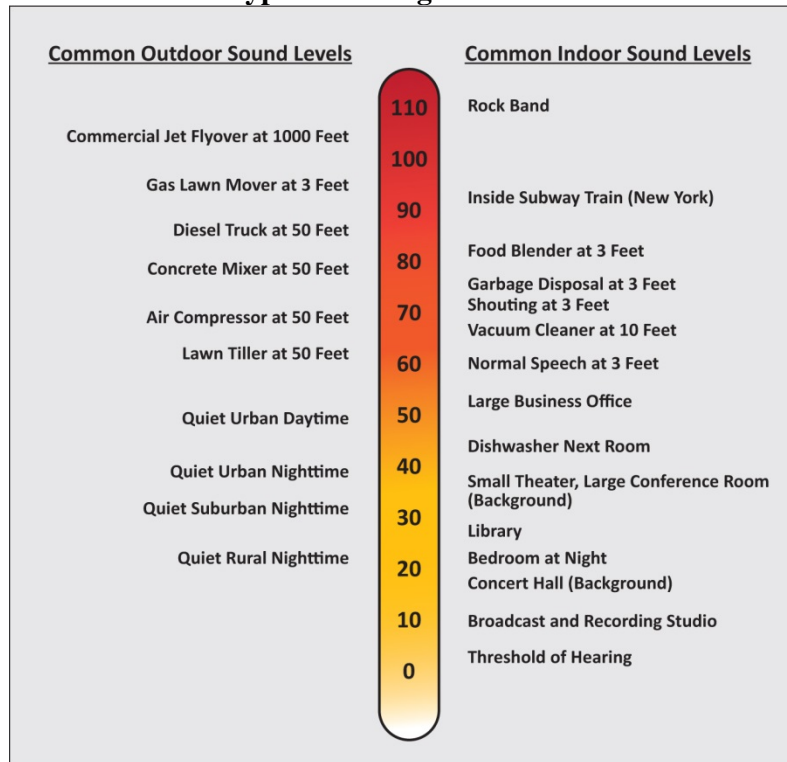
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<sup>1</sup> Brown-Buntin Associates, Inc., 2014. *Helistop Noise Assessment, Helistop Replacement Project Children's Hospital and Research Center Oakland*. July.

**Table IV.G-1: Definitions of Acoustical Terms**

| <b>Term</b>                                 | <b>Definitions</b>  |
|---|---|
| Decibel, dB                                 | A unit of level that denotes the ratio between two quantities proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.   |
| Frequency, Hz                               | Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).   |
| A-Weighted Sound Level, dBA                 | The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise. |
| $L_{01}$ , $L_{10}$ , $L_{50}$ , $L_{90}$   | The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.  |
| Equivalent Continuous Noise Level, $L_{eq}$ | The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time varying sound.   |
| Community Noise Equivalent Level, CNEL      | The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of five decibels to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.  |
| Day/Night Noise Level, $L_{dn}$             | The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.  |
| $L_{max}$ , $L_{min}$                       | The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.  |
| Sound Exposure Level, SEL                   | The cumulative sound exposure from a single noise event. Over a stated time period or event, the logarithm of the ratio of a given time integral of squared frequency-weighted sound pressure to the product of the reference sound pressure of 20 micropascals and the reference duration of 1 second.   |
| Ambient Noise Level                         | The all-encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.   |
| Intrusive                                   | The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.  |

Source: Harris, Cyril. 1998. *Handbook of Acoustical Measurements and Noise Control*.

**Table IV.G-2: Typical A-Weighted Sound Levels**

Source: Compiled by LSA Associates, Inc., 2013.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6 dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise sensitive receptor of concern.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level ( $L_{eq}$ ) is the total sound energy of time varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the  $L_{eq}$ , the community noise equivalent level (CNEL), and the day-night average level ( $L_{dn}$ ) based on A-weighted decibels (dBA). CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly  $L_{eq}$  for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours).  $L_{dn}$  is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and  $L_{dn}$  are within one dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours. Typical A-weighted sound levels from various sources are described in **Table IV.G-2**.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level ( $L_{max}$ ), which is the highest exponential time averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of

maximum levels denoted by  $L_{\max}$  for short-term noise impacts.  $L_{\max}$  reflects peak operating conditions, and addresses the annoying aspects of intermittent noise.

The Sound Exposure Level (SEL) is often used for measuring noise exposure from a noise event such as an airplane pass-over. The SEL for an individual aircraft noise event is a numerically higher number than the  $L_{\max}$  for the same event because the SEL consolidates the energy of the entire noise event into a reference duration of one second. The SEL is not “heard”, but is a derived value used for calculation of cumulative aircraft noise exposure as defined by the  $L_{dn}$  or CNEL.

Noise standards in terms of percentile exceedance levels,  $L_x$ , are often used together with the  $L_{\max}$  for noise enforcement purposes. When specified, the percentile exceedance levels are not to be exceeded by an offending sound over a stated time period. For example, the  $L_{10}$  noise level represents the level exceeded ten percent of the time during a stated period. The  $L_{50}$  noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The  $L_{90}$  noise level represents the noise level exceeded 90 percent of the time and is considered the lowest noise level experienced during a monitoring period. It is normally referred to as the background noise level. For a relatively steady noise, the measured  $L_{eq}$  and  $L_{50}$  are approximately the same.

Noise impacts can be described in three categories. The first is audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 dBA or greater, since, as described earlier, this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1.0 and 3.0 dBA. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than 1.0 dBA that are inaudible to the human ear. A change in noise level of at least 5 dBA would be required before any noticeable change in human response would be expected and a 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response. Only audible changes in existing ambient or background noise levels are considered potentially significant.

**(2) Physiological Effects of Noise.** The effects of noise on people can also be described in three categories: annoyance, interference with activities such as speech or sleep, and physiological effects such as hearing loss. Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, and thereby affecting blood pressure, functions of the ear, and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling.

Sleep disturbance can occur from transportation noise, including aircraft noise. Although no specific long-term health effects have been clearly linked to sleep disturbance, it is recognized as intrinsically undesirable. Sleep disturbance studies have developed predictive models of transportation source noise-induced awakenings using SEL as the descriptor. The average and maximum percent of the population that would be awakened based on an interior sound level exposure from single aircraft noise events are summarized in **Table IV.G-3**.

**Table IV.G-3: Sleep Disturbance Frequency as a Function of Aircraft Sound Exposure Level (SEL)**

| Indoor SEL | Average Percent Awakened | Maximum Percent Awakened |
|------------|--------------------------|--------------------------|
| 45 dBA     | 0.8                      | 1.1                      |
| 50 dBA     | 1.0                      | 1.9                      |
| 55 dBA     | 1.2                      | 2.8                      |
| 60 dBA     | 1.5                      | 3.8                      |
| 65 dBA     | 1.8                      | 5.1                      |
| 70 dBA     | 2.2                      | 6.4                      |
| 75 dBA     | 2.8                      | 7.9                      |
| 80 dBA     | 3.4                      | 9.6                      |
| 85 dBA     | 4.2                      | 11.3                     |

Sources: Finegold and Bartholomew, 2001 *A Predictive Model of Noise Induced Awakenings from Transportation Noise Sources*, *Noise Control Engineering Journal*.

Federal Aviation Administration, 1997. *Federal Interagency Committee on Aviation Noise (FICAN) in Effects of Aviation Noise on Awakenings from Sleep*, June.

**b. Characteristics of Groundborne Vibration.** Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings. As the vibration propagates from the foundation throughout the remainder of the building, the vibration of floors and walls may cause perceptible vibration from the rattling of windows or a rumbling noise. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. When assessing annoyance from groundborne noise, vibration is typically expressed as root mean square (rms) velocity in units of decibels of 1 micro-inch per second. To distinguish vibration levels from noise levels, the unit is written as "VdB." Human perception to vibration starts at levels as low as 67 VdB and sometimes lower. Annoyance due to vibration in residential settings starts at approximately 70 VdB. Groundborne vibration is almost never annoying to people who are outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of the building, the motion does not provoke the same adverse human reaction.

In extreme cases, excessive groundborne vibration has the potential to cause structural damage to buildings. Common sources of groundborne vibration include trains and construction activities such as blasting, pile driving, and operating heavy earthmoving equipment. Typical vibration source levels from construction equipment are shown in **Table IV.G-4**.

**c. Noise Regulatory Framework.**

The following section provides brief discussions of the federal, State, and local regulatory framework related to noise.

**(1) Federal Regulations.** The following describes the federal agency noise regulations applicable to the project.

**Table IV.G-4: Typical Vibration Source Levels for Construction Equipment**

| Equipment                      |             | PPV at 25 feet (in/sec) | Approximate VdB at 25 feet |
|--------------------------------|-------------|-------------------------|----------------------------|
| Pile Driver (impact)           | Upper range | 1.518                   | 112                        |
|                                | Typical     | 0.644                   | 104                        |
| Pile Driver (sonic)            | Upper range | 0.734                   | 105                        |
|                                | Typical     | 0.170                   | 93                         |
| Clam shovel drop (slurry wall) |             | 0.202                   | 94                         |
| Hydromill (slurry wall)        | In soil     | 0.008                   | 66                         |
|                                | In rock     | 0.017                   | 75                         |
| Vibratory roller               |             | 0.210                   | 94                         |
| Hoe ram                        |             | 0.089                   | 87                         |
| Large bulldozer                |             | 0.089                   | 87                         |
| Caisson drilling               |             | 0.089                   | 87                         |
| Loaded trucks                  |             | 0.076                   | 86                         |
| Jackhammer                     |             | 0.035                   | 79                         |
| Small bulldozer                |             | 0.003                   | 58                         |

Note: PPV = Peak Particle Velocity

Source: Federal Transit Administration, 2006. *Transit Noise and Vibration Impact Assessment*. May.

**U.S. Environmental Protection Agency (EPA).** In 1972 Congress enacted the Noise Control Act. This act authorized the EPA to publish descriptive data on the effects of noise and establish levels of sound “requisite to protect the public welfare with an adequate margin of safety.” These levels are separated into health (hearing loss levels) and welfare (annoyance levels), as shown in **Table IV.G-5**. The EPA cautions that these identified levels are not standards because they do not take into account the cost or feasibility of the levels.

**Table IV.G-5: Summary of EPA Noise Levels Identified as Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety**

| Protected Effect                            | Level                   | Area  |
|---|-------------------------|---|
| Hearing loss                                | $L_{eq}(24) \leq 70$ dB | All areas.  |
| Outdoor activity interference and annoyance | $L_{dn} \leq 55$ dB     | Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use. |
|   | $L_{eq}(24) \leq 55$ dB | Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.   |
| Indoor activity interference and annoyance  | $L_{eq} \leq 45$ dB     | Indoor residential areas.   |
|   | $L_{eq}(24) \leq 45$ dB | Other indoor areas with human activities such as schools, etc.  |

Source: U.S. Environmental Protection Agency, 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. March.

For protection against hearing loss, 96 percent of the population would be protected if sound levels are less than or equal to an  $L_{eq}(24)$  of 70 dBA. The “(24)” signifies an  $L_{eq}$  duration of 24 hours. The EPA activity and interference guidelines are designed to ensure reliable speech communication at about 5 feet in the outdoor environment. For outdoor and indoor environments, interference with activity and annoyance should not occur if levels are below 55 dBA and 45 dBA, respectively. The noise effects associated with an outdoor  $L_{dn}$  of 55 dBA are summarized in **Table IV.G-6**. At 55 dBA  $L_{dn}$ , 95 percent sentence clarity (intelligibility) may be expected at 11 feet, and no substantial community reaction. However, 1 percent of the population may complain about noise at this level and 17 percent may indicate annoyance.

**Table IV.G-6: Summary of Human Effects in Areas Exposed to 55 dBA  $L_{dn}$**

| Type of Effects            | Magnitude of Effect  |
|----------------------------|--|
| Speech – Indoors           | 100 percent sentence intelligibility (average) with a 5 dB margin of safety.   |
| Speech – Outdoors          | 100 percent sentence intelligibility (average) at 0.35 meter.  |
|                            | 99 percent sentence intelligibility (average) at 1.0 meter.  |
|                            | 95 percent sentence intelligibility (average) at 3.5 meters.   |
| Average Community Reaction | None evident; 7 dB below level of significant complaints and threats of legal action and at least 16 dB below “vigorous action.” |
| Complaints                 | 1 percent dependent on attitude and other non-level related factors.   |
| Annoyance                  | 17 percent dependent on attitude and other non-level related factors.  |
| Attitude Towards Area      | Noise essentially the least important of various factors.  |

Source: U.S. Environmental Protection Agency, 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. March.



**Federal Aviation Administration (FAA).** The federal government has provided guidance for airport noise compatibility planning under CFR Title 14 Part 150<sup>2</sup> and the Federal Aviation Administration (FAA) Environmental Desk Reference for Airport Actions.<sup>3</sup> Although these documents pertain to federally funded airport improvement projects, they specify that the SEL and  $L_{\max}$  noise metrics be used for quantifying single event noise and establish an aircraft exposure level of 65 dBA CNEL for exterior environments and an interior noise level standard of 45 dBA CNEL when evaluating land use compatibility around airports. This is consistent with the State of California exterior noise level standard of 65 dBA CNEL as described below.

The FAA also has responsibility for establishing noise level standards for the development, manufacture, and certification of new aircraft, including helicopters. Local or state jurisdictions may not impose their own noise level standards to the noise generated by individual aircraft operations, such as requiring mufflers or other noise abatement measures, but may consider noise compatibility criteria, as described above, for the purpose of noise compatibility planning around existing or proposed airport or helistop facilities.

**(2) State of California.** The State of California has established regulations that help prevent adverse impacts to occupants of buildings located near noise sources. The “State Noise Insulation Standard” requires noise-sensitive land uses to meet performance standards through design and/or building materials that would offset any noise source in the vicinity of the building. The State has also established land use compatibility guidelines for determining acceptable noise levels for specified land uses. The City of Oakland has adopted the State’s land use compatibility guidelines, as discussed below and shown in **Figure IV.G-4** of the Thresholds of Significance discussion.

Additionally, Section 21662.4 of the California Public Utilities Code exempts emergency aircraft flights for medical purposes from local noise ordinances. Under this section of Code, cities cannot restrict flight departures or arrivals to particular hours of the day or night or restrict the operation of certain types of aircraft based upon the aircraft’s noise level. The City also cannot dictate abatement measures for helicopter noise, such as restricting helicopters by type.

**(3) City of Oakland.** Locally, the City of Oakland addresses noise in the City’s General Plan Noise Element, in the Municipal Code Noise Ordinances, and in the Standard Conditions of Approval.

**City of Oakland’s General Plan Noise Element.** The City of Oakland adopted a revised Noise Element in June of 2005. The City has also established a “normally acceptable” exterior noise threshold for new residential and hospital land use development of 60 dBA  $L_{dn}$  or below. According to the City’s land use compatibility guidelines, for proposed new hospital uses, exterior ambient noise levels between 60 dBA and 70 dBA  $L_{dn}$  are “conditionally acceptable” provided a noise analysis identifies necessary noise reduction measures to achieve the interior noise level standard of 45 dBA  $L_{dn}$ .

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<sup>2</sup> United States Code of Federal Regulations (CFR) Title 14, Part 150, *Airport Noise Compatibility Planning*, September, 2004.

<sup>3</sup> U.S. Department of Transportation, Federal Aviation Administration, 2007. *Environmental Desk Reference for Airport Actions*. October.

The following are the noise policies and action steps of the Noise Element that are applicable to the proposed project.

- Policy 1: Ensure the compatibility of existing and, especially, of proposed development projects not only with neighboring land uses but also with their surrounding noise environment.
  - Action 1.1: Use the noise-land use compatibility matrix (Figure 6 of the Noise Element [Figure IV.G-4 under the Thresholds of Significance Discussion]) in conjunction with the noise contour maps (especially for roadway traffic) to evaluate the acceptability of residential and other proposed land uses and also the need for any mitigation or abatement measures to achieve the desired degree of acceptability.
  - Action 1.2: Continue using the City's zoning regulations and permit processes to limit the hours of operation of noise-producing activities which create conflicts with residential uses and to attach noise-abatement requirements to such activities.
- Policy 2: Protect the noise environment by controlling the generation of noise by both stationary and mobile noise sources.
- Policy 3: Reduce the community's exposure to noise by minimizing the noise levels that are received by Oakland residents and others in the City. (This policy addresses the reception of noise whereas Policy 2 addresses the generation of noise.)
  - Action 3.1: Continue to use the building-permit application process to enforce the California Noise Insulation Standards regulating the maximum allowable interior noise level in new multi-unit buildings.
  - Action 3.2: Review the City's noise performance standards and revise them as appropriate to be consistent with City Council policy.
  - Action 3.3: Demand that Caltrans implement sound barriers, building retrofit programs and other measures to mitigate to the maximum extent feasible noise impacts on residential and other sensitive land uses from any new, widened or upgraded roadways; any new sound barrier must conform with City policies and standards regarding visual and aesthetic resources and quality.

**City of Oakland Municipal Code Noise Ordinances.** The City of Oakland's Municipal Code includes various provisions intended to reduce nuisance noise impacts to noise-sensitive receptors associated with existing noise sources and events. Section 17.120 of the City's Municipal Code includes exterior noise limits for noise sources as shown in **Table IV.G-11** of the Thresholds of Significance discussion. The code also regulates noise from construction activity by establishing maximum allowable daytime average receiving noise levels as measured at receiving property lines. The maximum allowable noise levels are shown in **Table IV.G-12** in the Thresholds of Significance discussion.

Municipal Code 17.120.060 also outlines the City of Oakland's performance standards with regards to residential development exposed to groundborne vibration. The code restricts all activities outside of the M-40 and M-30 zones from creating a vibration that would be perceptible without instruments by the average person at or beyond any property line of the lot containing such activities. Ground-borne vibration caused by motor vehicles, trains, and temporary construction or demolition work is exempt from this standard.

Municipal Code Section 8.18.020 restricts emission of annoying human, animal, or mechanical noise levels between the hours of 9:00 p.m. and 7:00 a.m. that would result in disturbing the peace or

comfort of any persons. This section also outlines compliance provisions for noise emitting construction equipment.

**City of Oakland's Standard Conditions of Approval.** The City of Oakland's Standard Conditions of Approvals that address noise would apply to the proposed project are listed below. If the City approves the proposed project, these Standard Conditions of Approvals would be adopted as requirements of the proposed project to help ensure less-than-significant noise and vibration impacts. Generally, these Standard Conditions of Approvals are more current, more detailed, and provide greater clarity regarding process and procedures; they will not increase additional adverse effects. The Standard Conditions of Approvals would be incorporated and required as part of the proposed project, and therefore are not listed as mitigation measures.

**SCA NOI-1: Days/Hours of Construction Operation.** *Ongoing throughout demolition, grading, and/or construction.*

The project applicant shall require construction contractors to limit standard construction activities as follows:

- a) Construction activities are limited to between 7:00 a.m. and 7:00 p.m. Monday through Saturday, except that pile driving and/or other extreme noise generating activities greater than 90 dBA shall be limited to between 8:00 a.m. and 4:00 p.m. Monday through Friday.
- b) Any construction activity proposed to occur outside of the standard hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case by case basis, with criteria including the proximity of residential uses and a consideration of resident's preferences for whether the activity is acceptable if the overall duration of construction is shortened and such construction activities shall only be allowed with the prior written authorization of the Building Services Division.
- c) Construction activity shall not occur on Saturdays, with the following possible exceptions:
  - i. Prior to the building being enclosed, requests for Saturday construction for special activities (such as concrete pouring which may require more continuous amounts of time), shall be evaluated on a case by case basis, with criteria including the proximity of residential uses and a consideration of resident's preferences for whether the activity is acceptable if the overall duration of construction is shortened. Such construction activities shall only be allowed on Saturdays with the prior written authorization of the Building Services Division.
  - ii. After the building is enclosed, requests for Saturday construction activities shall only be allowed on Saturdays with the prior written authorization of the Building Services Division, and only then within the interior of the building with the doors and windows closed.
- d) No extreme noise generating activities (greater than 90 dBA) shall be allowed on Saturdays, with no exceptions.
- e) No construction activity shall take place on Sundays or Federal holidays.
- f) Construction activities include but are not limited to: truck idling, moving equipment (including trucks, elevators, etc.) or materials, deliveries, and construction meetings held on-site in a non-enclosed area.
- g) Applicant shall use temporary power poles instead of generators where feasible.

**SCA NOI-2: Noise Control.** *Ongoing throughout demolition, grading, and/or construction.*

To reduce noise impacts due to construction, the project applicant shall require construction contractors to implement a site-specific noise reduction program, subject to the Planning and Zoning Division and the Building Services Division review and approval, which includes the following measures:

- a) Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible).
- b) Except as provided herein, Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are commercially available and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.
- c) Stationary noise sources shall be located as far from adjacent receptors as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the City to provide equivalent noise reduction.
- d) The noisiest phases of construction shall be limited to less than 10 days at a time. Exceptions may be allowed if the City determines an extension is necessary and all available noise reduction controls are implemented.

**SCA NOI-3: Noise Complaint Procedures.** *Ongoing throughout demolition, grading, and/or construction.*

Prior to the issuance of each building permit, along with the submission of construction documents, the project applicant shall submit to the Building Services Division a list of measures to respond to and track complaints pertaining to construction noise. These measures shall include:

- a) A procedure and phone numbers for notifying the Building Services Division staff and Oakland Police Department; (during regular construction hours and off-hours);
- b) A sign posted on-site pertaining with permitted construction days and hours and complaint procedures and who to notify in the event of a problem. The sign shall also include a listing of both the City and construction contractor's telephone numbers (during regular construction hours and off-hours);
- c) The designation of an on-site construction complaint and enforcement manager for the project;
- d) Notification of neighbors and occupants within 300 feet of the project construction area at least 30 days in advance of extreme noise generating activities about the estimated duration of the activity; and
- e) A preconstruction meeting shall be held with the job inspectors and the general contractor/on-site project manager to confirm that noise measures and practices (including construction hours, neighborhood notification, posted signs, etc.) are completed.

**SCA NOI-4: Interior Noise.** *Prior to issuance of a building permit and Certificate of Occupancy.*

If necessary to comply with the interior noise requirements of the City of Oakland's General Plan Noise Element and achieve an acceptable interior noise level, noise reduction in the form of sound-rated assemblies (i.e., windows, exterior doors, and walls), and/or other appropriate features/measures, shall be incorporated into project building design, based upon recommendations of a qualified acoustical engineer and submitted to the Building Services Division for review and approval prior to issuance of building permit. Final recommendations for sound-rated assemblies, and/or other appropriate features/measures, will depend on the specific building designs and layout of buildings on the site and shall be determined during the design phases. Written confirmation by the acoustical consultant, HVAC or HERS specialist, shall be submitted for City review and approval, prior to Certificate of Occupancy (or equivalent) that:

- a) Quality control was exercised during construction to ensure all air-gaps and penetrations of the building shell are controlled and sealed; and
- b) Demonstrates compliance with interior noise standards based upon performance testing of a sample unit.
- c) Inclusion of a Statement of Disclosure Notice in the CC&Rs on the lease or title to all new tenants or owners of the units acknowledging the noise generating activity and the single event noise occurrences. Potential features/measures to reduce interior noise could include, but are not limited to, the following:
  - i. Installation of an alternative form of ventilation in all units identified in the acoustical analysis as not being able to meet the interior noise requirements due to adjacency to a noise generating activity, filtration of ambient make-up air in each unit and analysis of ventilation noise if ventilation is included in the recommendations by the acoustical analysis.
  - ii. Prohibition of Z-duct construction.

**SCA NOI-5: Operational Noise-General. Ongoing.**

Noise levels from the activity, property, or any mechanical equipment on site shall comply with the performance standards of Section 17.120 of the Oakland Planning Code and Section 8.18 of the Oakland Municipal Code. If noise levels exceed these standards, the activity causing the noise shall be abated until appropriate noise reduction measures have been installed and compliance verified by the Planning and Zoning Division and Building Services.

**SCA NOI-6: Pile Driving and Other Extreme Noise Generators. Ongoing throughout demolition, grading, and/or construction.**

To further reduce potential pier drilling, pile driving and/or other extreme noise generating construction impacts greater than 90 dBA, a set of site-specific noise attenuation measures shall be completed under the supervision of a qualified acoustical consultant. Prior to commencing construction, a plan for such measures shall be submitted for review and approval by the Planning and Zoning Division and the Building Services Division to ensure that maximum feasible noise attenuation will be achieved. This plan shall be based on the final design of the project. A third-party peer review, paid for by the project applicant, may be required to assist the City in evaluating the feasibility and effectiveness of the noise reduction plan submitted by the project applicant. The criterion for approving the plan shall be a determination that maximum feasible noise attenuation will be achieved. A special inspection deposit is required to ensure compliance with the noise reduction plan. The amount of the deposit shall be determined by the Building Official, and the deposit shall be submitted by the project applicant concurrent with submittal of the noise reduction plan. The noise reduction plan shall include, but not be limited to, an evaluation of implementing the following measures. These attenuation measures shall include as many of the following control strategies as applicable to the site and construction activity:

- a) Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings;
- b) Implement “quiet” pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions;
- c) Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site;
- d) Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example and implement such measure if such measures are feasible and would noticeably reduce noise impacts; and
- e) Monitor the effectiveness of noise attenuation measures by taking noise measurements.

**SCA NOI-7: Vibration Impacts on Adjacent Historic Structures or Vibration-Sensitive Activities.**

*Vibration analysis required prior to issuance of a demolition, grading or building permit*

The project applicant shall submit a Vibration Analysis prepared by an acoustical and/or structural engineer or other appropriate qualified professional for City review and approval that establishes pre-construction baseline conditions and threshold levels of vibration that could damage the structure and/or substantially interfere with activities located at hospital and A/B Wing. The Vibration Analysis shall identify design means and methods of construction that shall be used in order to not exceed the thresholds. The applicant shall implement the recommendations during construction.

To further implement Standard Condition of Approval NOI-7:

- a) The FTA's established groundborne vibration impact criteria for Category I and Category II land uses for infrequent events should not be exceeded.
- b) The applicant shall retain an historic preservation architect (who meets the Secretary of the Interior's Standards and Guidelines for Historic Preservation Professional Qualifications) and a structural engineer (Monitoring Team), who shall undertake an Existing Conditions Study (Study) of the A/B Wing. The purpose of the Study is to establish the baseline condition of the building prior to construction of the Project, including but not limited to the location and extent of any visible cracks or spalls on the building. The Study shall be reviewed and approved by the City of Oakland's Deputy Director and Building Official.
- c) Initial construction activities shall be monitored by the Monitoring Team and if vibrations are above threshold levels, appropriate measures shall be taken to reduce vibrations to below established levels. The Monitoring Team shall continue to regularly monitor the buildings during construction and report any changes to the existing conditions, including but not limited to, expansion of cracks, new spalls, or other exterior deterioration. If there are such changes, appropriate corrective measures shall be taken to reduce vibrations to below established levels, or other measures taken to prevent damage to the building.
- d) Written monitoring reports shall be submitted to the City's Deputy Director and Building Official on a periodic basis as determined by the Monitoring Team. The structural engineer shall consult with the historic preservation architect, especially if any problems with character defining features of a historic resource are discovered. If in the opinion of the structural engineer, in consultation with the historic preservation architect, substantial adverse impacts to historic resources related to construction activities are found during construction, the Monitoring Team shall immediately inform, both orally and in writing, the project sponsor and/or the project sponsor's designated representative responsible for construction activities and the City Planning and Zoning Division. The project sponsor shall follow the Monitoring Team's recommendations for corrective measures, including halting construction activities in situations where further construction work would damage historic resources, or taking other measures to protect the building. The historic preservation architect shall establish the frequency of monitoring and reporting prior to the issuance of a demolition, grading, or building permit.
- e) The historic preservation architect shall establish a training program for construction workers involved in the project that emphasizes the importance of protecting historic resources. The program shall include directions on how to exercise care when working around and operating equipment near historic structures, including storage of materials away from historic buildings. A provision for establishing this training program shall be included in the construction contract, and the contract provisions shall be reviewed and approved by the City of Oakland.

**d. Existing Noise Environment.** The project is located in an urban area and is, therefore, influenced by several surrounding noise sources. The main CHRCO campus is bordered by major transportation noise sources on two sides: Martin Luther King Jr. Way is located along the west side

of the campus and State Route 24 (SR 24) freeway is located along the east side of the campus. There are Bay Area Rapid Transit (BART) lines that run down the center of both of those roadways. Residential uses are located on the north side of 53<sup>rd</sup> Street, west side of Martin Luther King Jr. Way, and east side of SR 24. In addition, there are two residential properties located within the project site boundaries, the residential land uses located at 720 52<sup>nd</sup> Street and 685 53<sup>rd</sup> Street. The major existing noise sources within and near the project site are traffic on the above-referenced roadways, BART operations, fixed-wing aircraft over-flights, and periodic helicopter flights associated with the CHRCO helistop, news media and law enforcement agencies.

**(1) Existing Ambient Monitored Noise Levels.** Long-term (24-hour) and short-term (15-minute) measurements of existing ambient noise levels were conducted in the area surrounding the project site. Continuous (long-term) noise monitoring was conducted for a 24-hour period beginning at midnight on December 4, 2013. The locations of the 24-hour measurements, labeled as long-term site 1 (LT-1) long-term site 2 (LT-2), are shown on **Figure IV.G-1**. To distinguish short-term measurement locations from the long-term measurements, the short term measurements are labeled as Sites 1 through 8 on **Figure IV.G-1**. The purpose of the long-term noise monitoring was to document hourly fluctuations in ambient noise levels in the project area. The short-term and long-term measurements captured all noise sources in the vicinity including traffic, BART, helicopter and airplane overflights, and stationary noise sources, including existing hospital operation and the helistop test flights which occurred from 10:00 a.m. to 10:30 a.m. on December 4, 2013.

Long-term noise measurements were conducted in the rear yard of a hospital-owned residence (currently being used as office space) at 671 53<sup>rd</sup> Street (Site LT-1) and in the CHRCO employee parking lot on the west side of Martin Luther King Jr. Way (Site LT-2). **Table IV.G-7** summarizes the noise level data obtained during the 24-hour noise monitoring period beginning at midnight on December 4, 2013. The following tables showing the Equivalent Sound Level ( $L_{eq}$ ), maximum ( $L_{max}$ ) and the measured CNEL values for the two long-term sites are also reported in **Table IV.G-7**.

**Table IV.G-7: Summary of Long-Term (24-Hour) Noise Measurement Data, December 4, 2014**

| Site | Description                 | Range of Hourly Noise Levels, dBA |             |      |
|------|-----------------------------|-----------------------------------|-------------|------|
|      |                             | $L_{eq}$                          | $L_{max}$   | CNEL |
| LT-1 | 671 53 <sup>rd</sup> Street | 49.7 - 69.8                       | 62.2 - 88.4 | 68.3 |
| LT-2 | CHRCO Employee Parking      | 51.2 - 69.5                       | 62.8 - 89.5 | 70.3 |

Source: Brown-Buntin Associates, Inc., 2014.

Noise monitoring captured all sources of noise occurring at these locations which could have included helicopter overflights, local traffic, activities in the neighborhood, BART, and emergency vehicle sirens.

For Site LT-1, measured hourly  $L_{eq}$  values ranged from a low of 49.7 dBA between 1:00 a.m. and 2:00 a.m. to a high of 69.8 dBA between 2:00 p.m. and 3:00 p.m. The measured maximum noise levels ranged from 62.8 dBA to 88.4 dBA  $L_{max}$ . The maximum noise levels were likely caused by helicopter overflights (from tests being conducted for the project noise assessment), local traffic, activity in the neighboring backyards, or emergency vehicle sirens. These noise levels are typical of these kinds of urban environments.

For Site LT-2, measured hourly  $L_{eq}$  values ranged from a low of 51.2 dBA between 2:00 a.m. and 3:00 a.m. to a high of 69.5 dBA between 10:00 a.m. and 11:00 a.m. The high  $L_{eq}$  value of 69.5 dBA was most likely the result of helicopter noise generated from tests being conducted for this noise assessment. Maximum noise levels measured during each of the hourly sample periods ranged from 62.8 dBA to 89.5 dBA  $L_{max}$ . These noise levels are typical of these kinds of urban environments.

The measured CNEL values ranged from 68 dBA to 70 dBA at the long-term sites. As mentioned above, such levels are typical of an urban area located near major transportation noise sources and are consistent with the CNEL contour maps included within the City's noise element, which are shown in **Figures IV.G-2 and IV.G-3**.

Short-Term (15-minute) measurements of existing ambient noise levels were conducted in the area surrounding the project site on December 4, 2013. **Table IV.G-8** summarizes noise measurement data obtained at the short-term noise monitoring sites (Sites 1-8). Noise samples at the short-term sites were collected in the late morning to early afternoon hours, and noise sources typically consisted of vehicular traffic on local roadways, vehicular traffic on SR 24, BART trains, fixed-wing aircraft and helicopter overflights unrelated to the CHRCO helistop, and animals. The measured  $L_{eq}$  values at the short-term noise monitoring sites range from approximately 45 dBA to 66 dBA.

**Table IV.G-8: Summary of Short-Term (15-Minute) Noise Measurement Data**

| Site | Start Time | End Time   | A-Weighted Decibels, dBA |           | Sources  |
|------|------------|------------|--------------------------|-----------|--|
|      |            |            | $L_{eq}$                 | $L_{max}$ |  |
| 1    | 10:57 a.m. | 11:12 a.m. | 60.3                     | 72.2      | Traffic, helicopter <sup>a</sup>                 |
| 2    | 11:20 a.m. | 11:35 a.m. | 66.3                     | 73.4      | Traffic, aircraft                                |
| 3    | 11:53 a.m. | 12:08 p.m. | 54.1                     | 72.3      | Traffic, aircraft                                |
| 4    | 12:13 p.m. | 12:28 p.m. | 45.5                     | 59.1      | Traffic, birds                                   |
| 5    | 12:44 p.m. | 12:59 p.m. | 62.9                     | 72.1      | BART, traffic, barking dog                       |
| 6    | 1:10 p.m.  | 1:25 p.m.  | 58.3                     | 69.0      | BART, traffic                                    |
| 7    | 11:01 a.m. | 11:16 a.m. | 58.0                     | 73.5      | BART, aircraft, traffic, helicopter <sup>a</sup> |
| 8    | 11:26 a.m. | 11:41 a.m. | 62.4                     | 69.1      | BART, aircraft, traffic, helicopter <sup>a</sup> |

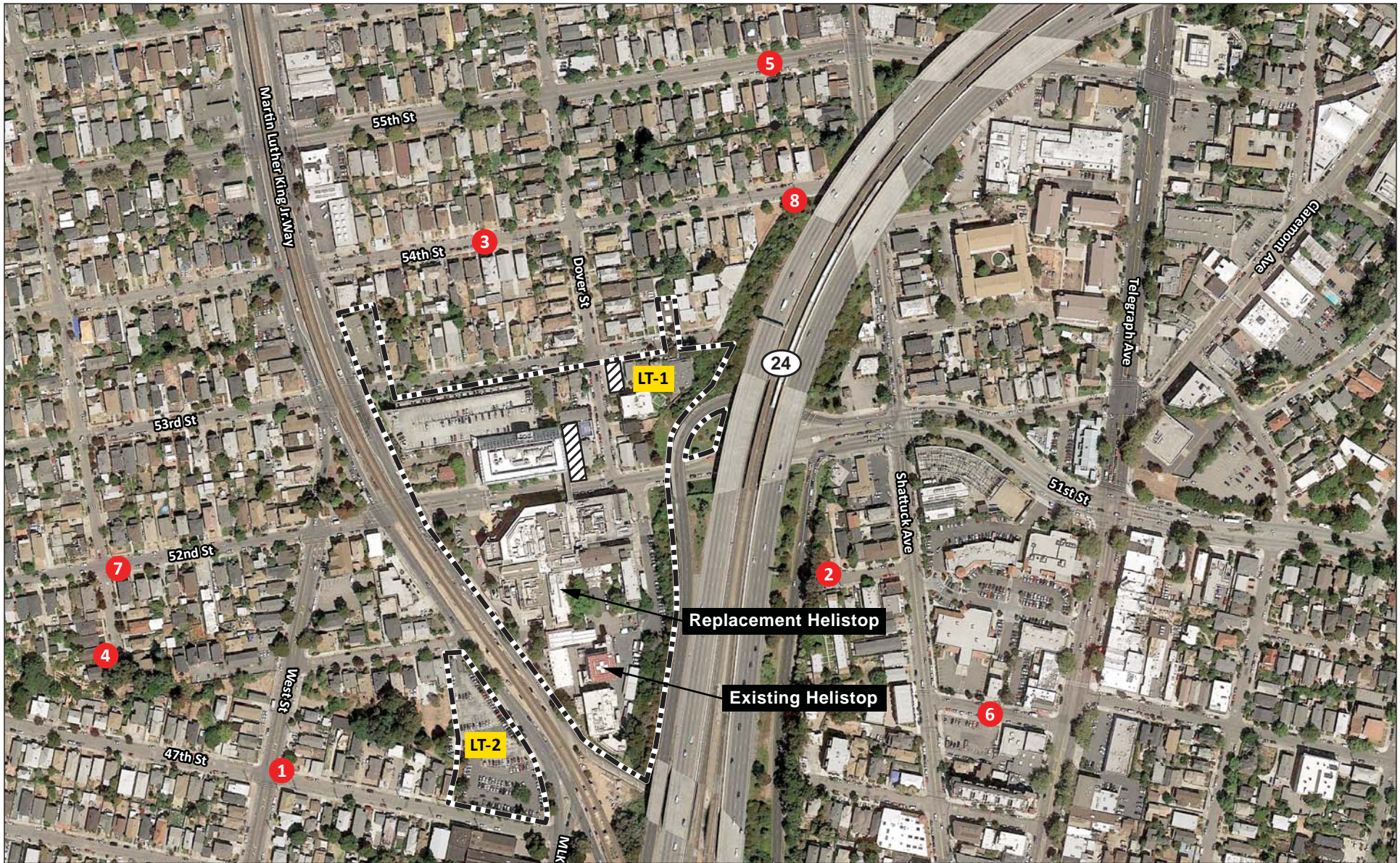
<sup>a</sup> Helicopter unrelated to CHRCO helistop (i.e., did not stop at CHRCO) as observed by noise technician.

Source: Brown-Buntin Associates, Inc., March 28, 2014.

**(2) Existing Traffic Noise.** Existing traffic noise levels were calculated using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model. Traffic data used in the model were obtained from the traffic impact analysis prepared by Fehr & Peers and included in Section IV.D, Transportation and Circulation, of this EIR. **Table IV.G-9** lists the calculated traffic noise levels in the project study area under the existing conditions. The traffic noise model printouts are included in Appendix D.

Based on existing traffic volumes on the modeled roadway segments, traffic noise levels on local roadways in the project vicinity range from approximately 48 dBA to 66 dBA CNEL as measured at 50 feet from the centerline of the outermost travel lanes. Traffic noise levels along Martin Luther King Jr. Way adjacent to the project site are approximately 66 dBA CNEL at 50 feet from the centerline of the outermost travel lane. Traffic noise levels along 52<sup>nd</sup> Street adjacent to the CHRCO campus are approximately 59 dBA CNEL at 50 feet from the centerline of the outermost travel lane.





LSA

FIGURE IV.G-1



- 3 Noise Monitoring Location
- LT-2 Long-Term Noise Monitoring Location



- Project Site
- Private Residence, Parcel Not Owned by CHRCO

*CHRCO Campus Master Plan Project EIR*  
 Ambient Noise Monitoring Locations

SOURCES: GOOGLE EARTH, 8/29/12; BROWN-BUNTIN ASSOCIATES, INC.; LSA ASSOCIATES, INC., 2014.

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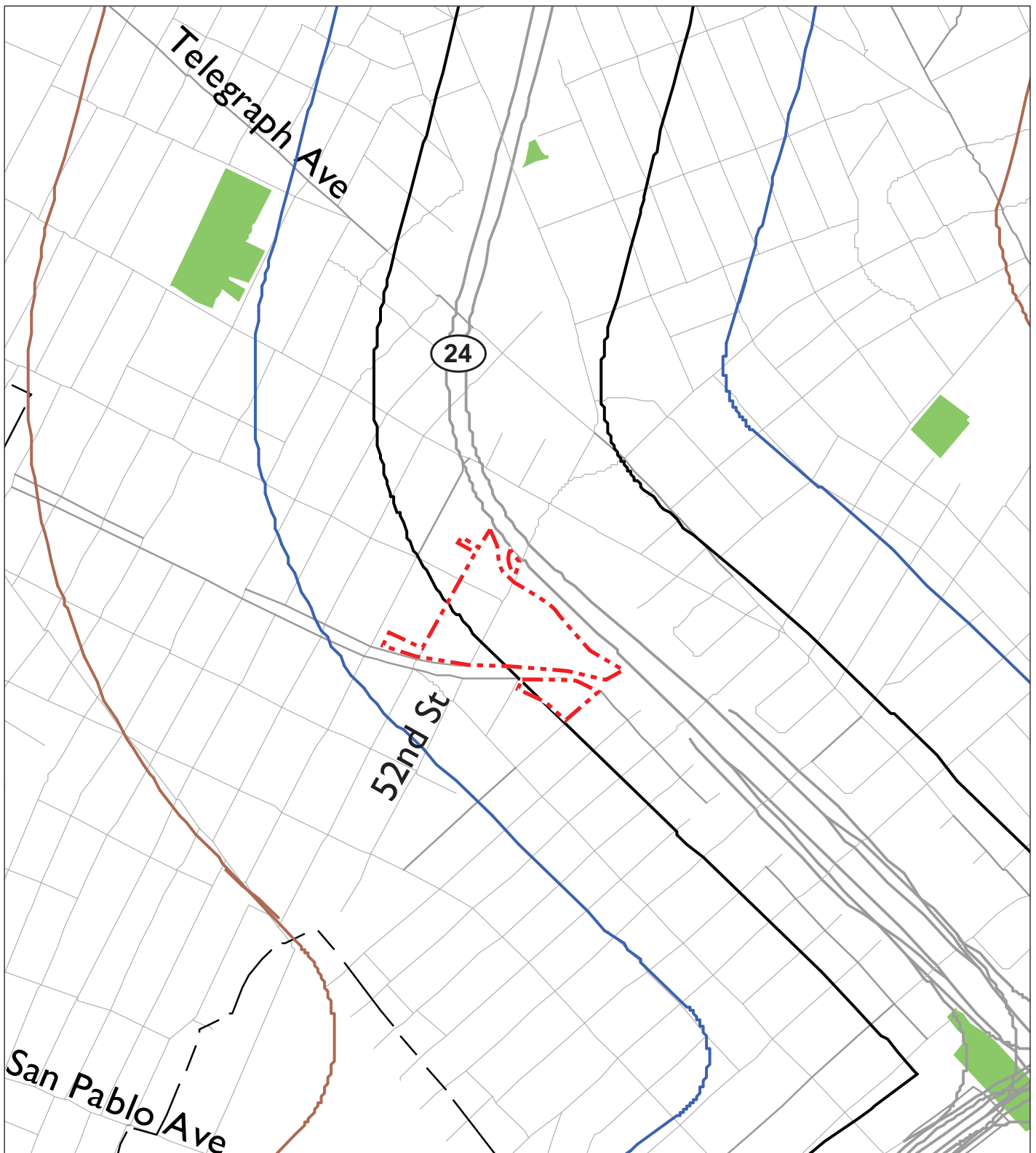
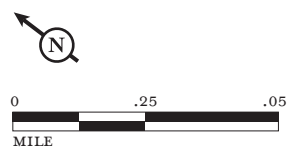


FIGURE IV.G-2

LSA



- 70 Ldn Contour
- 65 Ldn Contour
- 60 Ldn Contour
- - - Project Site

CHRCO Campus Master Plan Project EIR  
Existing Roadway Noise Contours

SOURCE: CITY OF OAKLAND GENERAL PLAN, 2005. NOISE ELEMENT, FIGURE 2.

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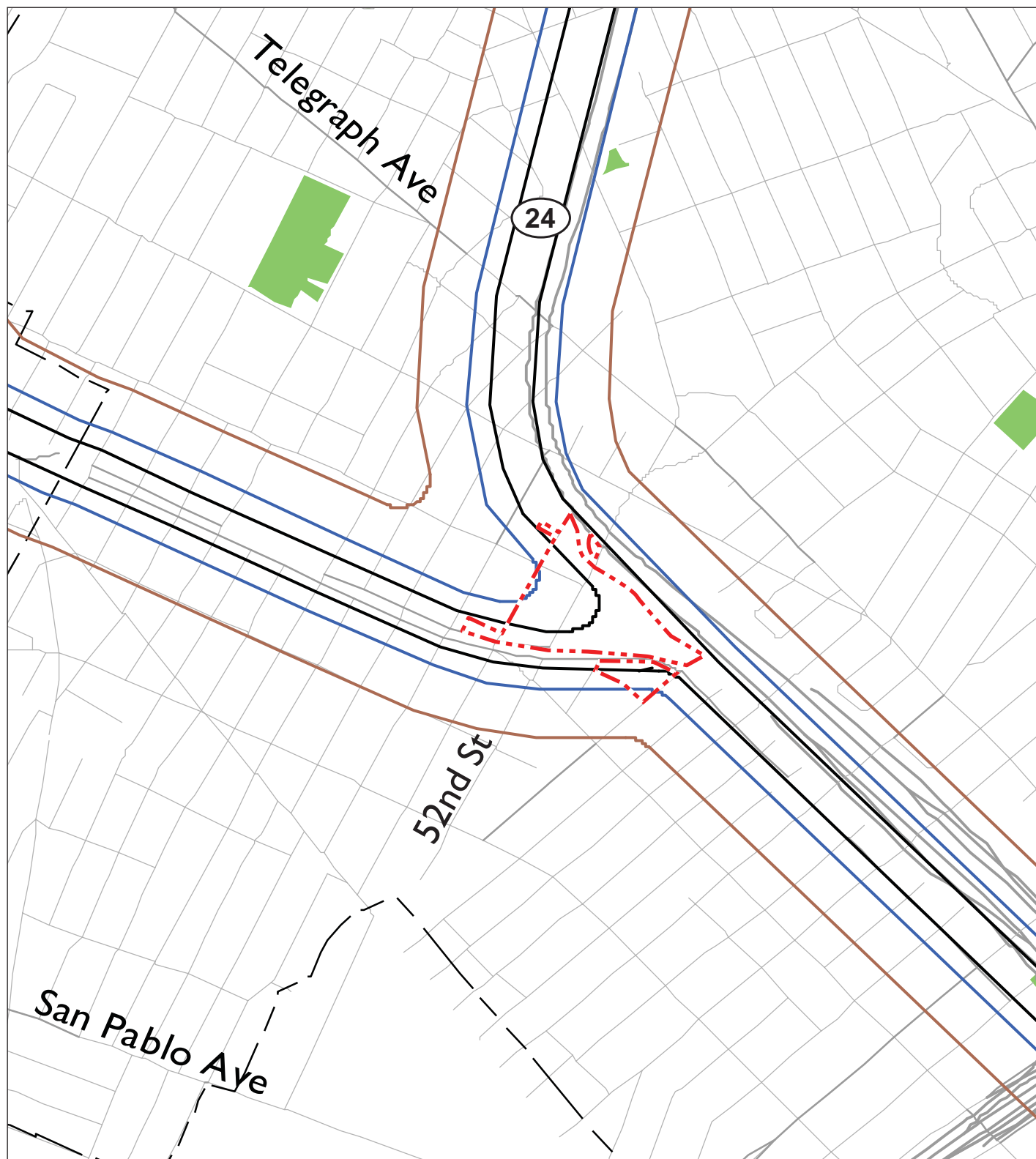
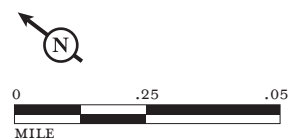


FIGURE IV.G-3

LSA



- 70 Ldn Contour
- 65 Ldn Contour
- 60 Ldn Contour
- - - Project Site

CHRCO Campus Master Plan Project EIR

Existing Railroad and BART Noise Contours

SOURCE: CITY OF OAKLAND GENERAL PLAN, 2005. NOISE ELEMENT, FIGURE 3.

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**Table IV.G-9: Existing Traffic Noise Levels, dBA**

| Roadway Segment   | ADT    | Center-line to 70 CNEL (feet) | Center-line to 65 CNEL (feet) | Center-line to 60 CNEL (feet) | CNEL (dBA) 50 feet from Centerline of Outermost Lane |
|---|--------|-------------------------------|-------------------------------|-------------------------------|--|
| Martin Luther King Jr. Way - 56 <sup>th</sup> St. to 55 <sup>th</sup> St. | 30,300 | < 50                          | 88                            | 176                           | 65.2   |
| Martin Luther King Jr. Way - 55 <sup>th</sup> St. to 54 <sup>th</sup> St. | 33,700 | < 50                          | 93                            | 189                           | 65.6   |
| Martin Luther King Jr. Way - 54 <sup>th</sup> St. to 53 <sup>rd</sup> St. | 34,800 | < 50                          | 95                            | 193                           | 65.8   |
| Martin Luther King Jr. Way - 53 <sup>rd</sup> St. to 52 <sup>nd</sup> St. | 35,600 | < 50                          | 96                            | 196                           | 65.9   |
| Martin Luther King Jr. Way - 52 <sup>nd</sup> St. to SR 24 Ramps          | 36,700 | < 50                          | 98                            | 200                           | 66.0   |
| 53 <sup>rd</sup> Street - Genoa Street to Martin Luther King Jr. Way      | 800    | < 50                          | < 50                          | < 50                          | 49.8   |
| 53 <sup>rd</sup> Street - Martin Luther King Jr. Way to Dover Street      | 600    | < 50                          | < 50                          | < 50                          | 48.5   |
| 52 <sup>nd</sup> St. - Genoa St. to West St.                              | 2,600  | < 50                          | < 50                          | < 50                          | 54.9   |
| 52 <sup>nd</sup> St. - West St. to Martin Luther King Jr. Way             | 4,400  | < 50                          | < 50                          | < 50                          | 56.6   |
| 52 <sup>nd</sup> St. - Martin Luther King Jr. Way to Garage Entrance      | 7,700  | < 50                          | < 50                          | 55                            | 58.5   |
| 52 <sup>nd</sup> St. - Garage Entrance to Dover Street                    | 7,600  | < 50                          | < 50                          | 52                            | 59.5   |
| 52 <sup>nd</sup> St. - SR-24 Ramps to Shattuck Avenue                     | 27,100 | < 50                          | 67                            | 126                           | 62.8   |
| 51 <sup>st</sup> St. - Shattuck Avenue to Telegraph Avenue                | 16,400 | < 50                          | < 50                          | 93                            | 60.6   |
| Telegraph Avenue - 55 <sup>th</sup> St. to 52 <sup>nd</sup> St.           | 21,100 | < 50                          | 73                            | 140                           | 63.6   |
| Telegraph Avenue - 52 <sup>nd</sup> St. to 51 <sup>st</sup> St.           | 19,400 | < 50                          | 70                            | 133                           | 63.2   |

Note: Shaded cells indicate roadway segments adjacent to or within the project site.

Source: LSA Associates, Inc., January 2014.

These modeled roadway traffic noise levels do not include the cumulative traffic noise levels of traffic noise from SR 24. Based on the City of Oakland's roadway noise contours shown in **Figure IV.G-2**, the project site lies within the 70 dBA CNEL contour of roadway noise from traffic on SR 24 adjacent to the project site.

**(3) Existing Aircraft Noise.** The San Francisco International Airport is located approximately 13.5 miles southwest of the project site (across the Bay) and the Oakland International Airport is located approximately 4.7 miles south-southeast of the site. The project site is located outside of the 65-CNEL noise contours for both the San Francisco International Airport and the Oakland International Airport.

Aircraft noise in the project vicinity also includes helicopter operations at the existing CHRCO helistop. Prior to conducting the short-term noise monitoring described above, noise levels generated by individual aircraft operations at the existing CHRCO helistop were measured from 10:00 a.m. and 10:30 a.m. on December 4, 2013, at six of the short- and long-term noise monitoring locations described previously.<sup>4,5</sup> (This data was used to calibrate the noise model and determine impacts to existing and future noise-sensitive receptors.) The helicopter noise measurement locations are noted in **Figure IV.G-5** (Sites A through F). The selected sites are representative of areas near the hospital campus where noise-sensitive uses are located. Site F is the same location as ambient noise monitoring Site LT-2, where long-term noise monitoring was in progress during the test flights. The measured

<sup>4</sup> Brown-Buntin, 2014. op.cit.

<sup>5</sup> Short-term ambient noise monitoring as shown in Table IV.G-8 was conducted after the test flights, while the 24-hour noise monitoring conducted concurrent with the test flights.

noise level for the helicopter test flight that departed to the west over Site F/LT-2 was obtained from the long-term monitor by correlating the departure time with the noise monitoring data.

**Table IV.G-10** summarizes the noise measurement data obtained during the helicopter test flights. Included are the measured  $L_{max}$  and Sound Exposure Level (SEL) values for each flight. Monitoring was conducted when other noise generating activities were occurring (e.g., traffic on adjacent roadways), however, the maximum SEL for an individual aircraft noise event is a numerically higher number than the  $L_{max}$  for the same event because the SEL consolidates the energy of the entire noise event into a reference duration of one second. The SEL is not “heard”, but is a derived value used for calculation of cumulative aircraft noise exposure as defined by the CNEL.

**Table IV.G-10** shows that measured maximum helicopter noise levels ranged from 74.5 dBA to 90.7 dBA. The highest  $L_{max}$  reading occurred at Site B during a straight-in arrival from the east that passed directly over the monitoring site. The measured SEL values ranged from 82.7 dBA to 100.4 dBA, with the highest SEL value occurring during the above-referenced straight-in arrival over Site B/2. Generally speaking, the noise levels generated during arrivals were higher than those generated during departures at the monitoring sites. This is to be expected as additional power is needed to control the helicopter during arrivals. The noise levels measured during the test flights as reported in **Table IV.G-10** are representative of the typical noise levels associated with use of the existing helistop during individual flights.

**Table IV.G-10: Summary of Helicopter Noise Measurement Data CHRCO Test Flights, 10:00 a.m. to 10:30 a.m. on December 4, 2013**

| Site <sup>a</sup> | Description   | Time                      | Arrival or Departure             | Measured Noise Level, dBA |                  |
|-------------------|---|---------------------------|----------------------------------|---------------------------|------------------|
|                   |   |                           |                                  | $L_{max}$ <sup>b</sup>    | SEL <sup>b</sup> |
| A                 | South side 53 <sup>rd</sup> St. west of SR 24       | 10:04 a.m. and 10:09 a.m. | Arrival                          | 88.4-86.5                 | 94.8-95.2        |
|                   |   | 10:06 a.m. and 10:12 a.m. | Departure                        | 74.5-75.0                 | 82.7-82.8        |
| B                 | 51 <sup>st</sup> St. cul-de-sac east of SR 24       | 10:04 and 10:09 a.m.      | Arrival                          | 85.9-87.6                 | 94.4-96.0        |
|                   |   | 10:06 and 10:12 a.m.      | Departure                        | 81.1-82.3                 | 89.4-89.8        |
|                   |   | 10:15 a.m.                | Straight-In Arrival <sup>c</sup> | 90.7                      | 100.4            |
| C                 | 49 <sup>th</sup> St. between Telegraph and Shattuck | 10:15 a.m.                | Arrival                          | 82.2                      | 93.6             |
| D                 | Intersection of 52 <sup>nd</sup> St. and Genoa St.  | 10:30 a.m.                | Departure                        | 77.3                      | 85.4             |
| E                 | Intersection of 47 <sup>th</sup> St. and West St.   | 10:30 a.m.                | Departure                        | 79.0                      | 84.4             |
| F                 | CHRCO Employee Parking Lot                          | 10:30 a.m.                | Departure                        | 89.5                      | 98.3             |

<sup>a</sup> Helicopter Monitoring Site Number. Refer to Figure IV.G-5 which shows additional sites for which noise levels were modeled.

<sup>b</sup> A range of levels is shown where more than one event was measured at the site during the test flights.

<sup>c</sup> The typical arrival route follows SR 24 north of CHRCO. The straight-in approach was from the east following an arrival heading of 245 degrees.

Source: Brown-Buntin Associates, Inc., 2014.

(4) **Existing Railroad and BART Noise.** The closest railroad lines are located approximately 1.5 miles west of the proposed project site. However, BART lines run within both the Martin Luther King Jr. Way and SR 24 rights-of-way adjacent to the CHRCO campus. As shown in **Figure IV.G-3**, the project site is exposed to BART rail line noise levels of 70 dBA CNEL, which is consistent with the ambient noise monitoring data shown in **Table IV.G-7**.

(5) **Existing Sensitive Land Uses.** Existing land uses surrounding the project site consist of single- and multi-family residential, religious, and commercial/retail land uses. The closest residential uses are located on the north side of 53<sup>rd</sup> Street, west side of Martin Luther King Jr. Way, and east side of SR 24. In addition, there are two residential properties located within the project site boundaries, the residential land uses located at 720 52<sup>nd</sup> Street and 685 53<sup>rd</sup> Street. Other nearby noise sensitive land uses in the project vicinity includes the public park at 5210 West Street.

On-site sensitive land uses include the hospital buildings that would remain occupied during project construction. As described in the following impact discussion, project construction activities would occur immediately adjacent to some of these structures.

e. **Continued Noise Environment.** There is currently a 36-foot-tall helistop structure located in the southern portion of the CHRCO campus. In 2013, 559 helicopters utilized the CHRCO helistop. Each landing/take-off is counted as an aircraft operation, meaning that a total of 1,118 helicopter operations occurred at the existing helistop during this time period. It is estimated by CHRCO that helicopter flights would increase at the rate of approximately 1 percent per year, with or without the helistop replacement included in Phase 2 of the Master Plan.

## 2. Impacts and Mitigation Measures

This section discusses potential noise and vibration impacts that could result from implementation of the proposed project. The section begins with the significance thresholds, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate.

a. **Thresholds of Significance.** The proposed project would result in a significant noise or vibration impact if it would:

- (1) Generate noise in violation of the City of Oakland Noise Ordinance (Oakland Planning Code section 17.120.050, and shown in **Table IV.G-11**) regarding stationary operational noise;
- (2) Expose the project to community noise in conflict with the land use compatibility guidelines of the Oakland General Plan (shown in **Figure IV.G-4**) after incorporation of all applicable Standard Conditions of Approval;
- (3) Expose persons to or generate noise levels in excess of applicable standards established by a regulatory agency (e.g., occupational noise standards of the Occupational Safety and Health Administration [OSHA]);
- (4) Generate noise in violation of the City of Oakland Noise Ordinance (Oakland Planning Code section 17.120.050) regarding construction noise (shown in **Table IV.G-12**), except if an acoustical analysis is performed that identifies recommend measures to reduce potential impacts;

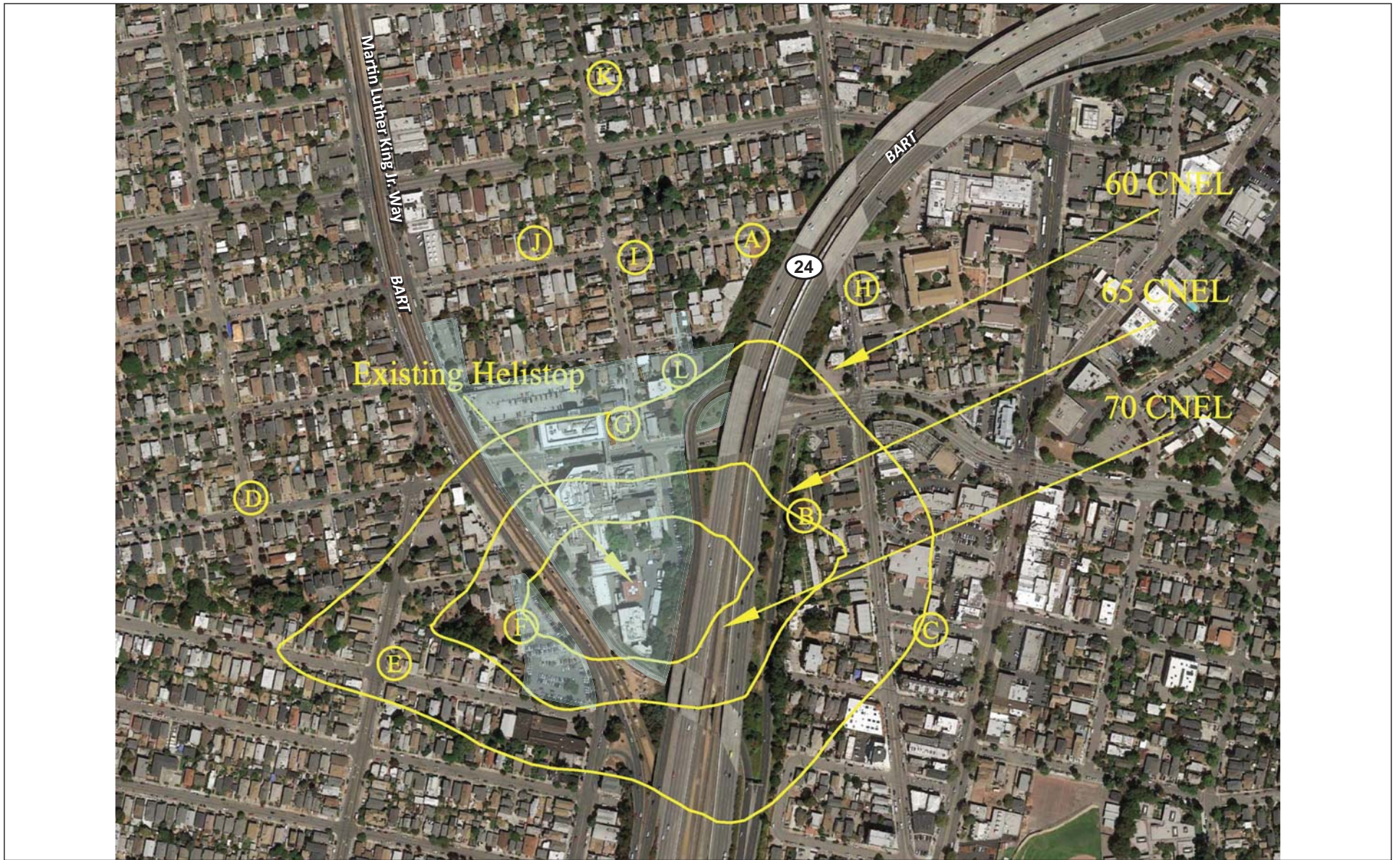
- (5) Exceed the applicable nighttime operational noise level standard (**shown in Table IV.G-13**) during the hours of 7:00 p.m. to 7:00 a.m. on weekdays and 8:00 p.m. to 9:00 a.m. on weekends and federal holidays, as received by any land use from construction or demolition;
- (6) Generate noise in violation of the City of Oakland nuisance standards (Oakland Municipal Code section 8.18.020) regarding persistent construction-related noise;
- (7) Generate or expose persons to groundborne vibration during either project construction or operation that exceeds the criteria (shown in Table IV.G-14) established by the Federal Transit Administration (FTA);
- (8) Expose persons to interior Ldn or CNEL greater than 45 dBA for multi-family dwellings, hotels, motels, dormitories, and long-term care facilities (and may be extended by local legislative action to include single-family dwellings) per California Noise Insulation Standards (CCR Part 2, Title 24);
- (9) Generate noise resulting in a 5 dBA permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or, if under a cumulative scenario where the cumulative increase results in a 5 dBA permanent increase in ambient noise levels in the project vicinity without the project (i.e., the cumulative condition including the project compared to the existing conditions) and a 3 dBA permanent increase is attributable to the project (i.e., the cumulative condition including the project compared to the cumulative baseline condition without the project);
- (10) Be located within an airport land use plan and would expose people residing or working in the project area to excessive noise levels; or
- (11) Be located within the vicinity of a private airstrip, and would expose people residing or working in the project area to excessive noise levels.



**Figure IV.G-4: Land Use Compatibility Guidelines**

| Land Use Category  | Community Noise Exposure ( $L_{dn}$ or CNEL, dB)   |    |    |    |    |    |
|--|--|----|----|----|----|----|
|  | 55   | 60 | 65 | 70 | 75 | 80 |
| Residential  | NA   |    |    |    |    |    |
|  |  |    | CA |    | NU |    |
| Transient lodging – motels, hotels                         | NA   |    |    |    |    |    |
|  |  |    |    | CA |    |    |
| Schools, libraries, churches, hospitals, nursing homes     | NA   |    |    |    |    |    |
|  |  |    | CA |    | NU |    |
| Auditoriums, concert halls, amphitheaters                  |  |    |    |    |    |    |
|  |  |    |    |    |    | CU |
| Sports arenas, outdoor spectator sports                    |  |    |    |    |    |    |
|  |  |    | CA |    |    |    |
| Playgrounds, neighborhood parks                            | NA   |    |    |    |    |    |
|  |  |    |    | NU |    |    |
| Golf courses, riding stables, water recreation, cemeteries | NA   |    |    |    |    |    |
|  |  |    |    |    | NU |    |
| Office buildings, business commercial and professional     | NA   |    |    |    |    |    |
|  |  |    |    | CA |    |    |
| Industrial, manufacturing, utilities, agriculture          | NA   |    |    |    |    |    |
|  |  |    |    |    | CA |    |
| NA   | NORMALLY ACCEPTABLE: Development may occur without an analysis of potential noise impacts to the proposed development (though it might still be necessary to analyze noise impacts that the project might have on its surroundings).   |    |    |    |    |    |
| CA   | CONDITIONALLY ACCEPTABLE: Development should be undertaken only after an analysis of noise-reduction requirements is conducted and if necessary noise-mitigating features are included.  |    |    |    |    |    |
| NU   | NORMALLY UNACCEPTABLE: Development should generally be discouraged; it may be undertaken only if a detailed analysis of the noise-reduction requirements is conducted, and if highly effective noise mitigation features are included. |    |    |    |    |    |
| CU   | CLEARLY UNACCEPTABLE: Development should not be undertaken.  |    |    |    |    |    |

Source: City of Oakland, 2005. *Draft Noise Element, City of Oakland General Plan*. March.



LSA

FIGURE IV.G-5



**Table IV.G-11: City of Oakland Stationary Operational Noise Standards at Receiving Property Line, dBA<sup>a</sup>**

| Receiving Land Use                   | Cumulative Number of Minutes in any 1-Hour Period <sup>b</sup> | Maximum Allowable Noise Level (dBA) |                                      |
|--------------------------------------|--|-------------------------------------|--------------------------------------|
|                                      |  | Daytime<br>7:00 a.m. to 10:00 p.m.  | Nighttime<br>10:00 p.m. to 7:00 a.m. |
| Residential and Civic <sup>c</sup>   | 20 (L <sub>33</sub> )  | 60                                  | 45                                   |
|                                      | 10 (L <sub>16.7</sub> )  | 65                                  | 50                                   |
|                                      | 5 (L <sub>8.3</sub> )  | 70                                  | 55                                   |
|                                      | 1 (L <sub>1.7</sub> )  | 75                                  | 60                                   |
|                                      | 0 (L <sub>max</sub> )  | 80                                  | 65                                   |
|                                      |  | Anytime                             |                                      |
| Commercial                           | 20 (L <sub>33</sub> )  | 65                                  |                                      |
|                                      | 10 (L <sub>16.7</sub> )  | 70                                  |                                      |
|                                      | 5 (L <sub>8.3</sub> )  | 75                                  |                                      |
|                                      | 1 (L <sub>1.7</sub> )  | 80                                  |                                      |
|                                      | 0 (L <sub>max</sub> )  | 85                                  |                                      |
| Manufacturing, Mining, and Quarrying | 20 (L <sub>33</sub> )  | 70                                  |                                      |
|                                      | 10 (L <sub>16.7</sub> )  | 75                                  |                                      |
|                                      | 5 (L <sub>8.3</sub> )  | 80                                  |                                      |
|                                      | 1 (L <sub>1.7</sub> )  | 85                                  |                                      |
|                                      | 0 (L <sub>max</sub> )  | 90                                  |                                      |

<sup>a</sup> These standards are reduced 5 dBA for simple tone noise, noise consisting primarily of speech or music, or recurring impact noise. If the ambient noise level exceeds these standards, the standard shall be adjusted to equal the ambient noise level.

<sup>b</sup> L<sub>x</sub> represents the noise level that is exceeded X percent of a given period. L<sub>max</sub> is the maximum instantaneous noise level.

<sup>c</sup> Residences, schools and childcare facilities, health care or nursing home, public open space, or similarly sensitive land uses.

Source: City of Oakland Planning Code Section 17.120.050.

**Table IV.G-12: City of Oakland Construction Noise Standards at Receiving Property Line, dBA<sup>a</sup>**

| Receiving Land Use       | Maximum Allowable Noise Level (dBA) |                                    |
|--------------------------|-------------------------------------|------------------------------------|
|                          | Weekdays<br>7:00 a.m. to 7:00 p.m.  | Weekends<br>9:00 a.m. to 8:00 p.m. |
| <b>Less Than 10 Days</b> |                                     |                                    |
| Residential              | 80                                  | 65                                 |
| Commercial, Industrial   | 85                                  | 70                                 |
| <b>More Than 10 Days</b> |                                     |                                    |
| Residential              | 65                                  | 55                                 |
| Commercial, Industrial   | 70                                  | 60                                 |

<sup>a</sup> If the ambient noise level exceeds these standards, the standard shall be adjusted to equal the ambient noise level.

Source: City of Oakland Planning Code Section 17.120.050.



**Table IV.G-13: FTA Groundborne Vibration Impact Criteria**

| Land Use Category  | Frequent Events <sup>a</sup> | Occasional Events <sup>b</sup> | Infrequent Events <sup>c</sup> |
|--|------------------------------|--------------------------------|--------------------------------|
| Category I: Buildings where vibration would interfere with interior operations | 65 VdB <sup>d</sup>          | 65 VdB <sup>d</sup>            | 65 VdB <sup>d</sup>            |
| Category II: Residences and buildings where people normally sleep              | 72 VdB                       | 75 VdB                         | 80 VdB                         |
| Category III: Institutional land uses with primarily daytime use               | 75 VdB                       | 78 VdB                         | 83 VdB                         |

<sup>a</sup> More than 70 vibration events of the same source per day.

<sup>b</sup> Between 30 and 70 vibration events of the same source per day.

<sup>c</sup> Less than 30 vibration events of the same source per day.

<sup>d</sup> This criterion is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration sensitive manufacturing or research should always require detailed evaluation to define the acceptable vibration levels. Ensuring low vibration levels in a building requires special design of HVAC systems and stiffened floors.

Source: Federal Transit Administration, 2006. *Transit Noise and Vibration Impact Assessment*. May.

**b. Project Impacts.** Project impacts according to each threshold of significance are discussed below.

**(1) Generate Excessive Stationary Operational Noise Levels (Noise Ordinance).**

According to City's significance thresholds, a project would have a significant impact if the project would generate noise associated with project operation in excess of the City of Oakland Noise Ordinance (Oakland Planning Code Section 17.120.050) regarding stationary operational noise. As noted in **Table IV.G-11**, a project would generate excessive operational noise if it would generate maximum noise levels in excess of 80 dBA during the day and 65 dBA during the night.

Both Phase 1 and Phase 2 of the project would include new stationary noise sources. Stationary noise is regulated under Chapter 17 of the City of Oakland Municipal Code. SCA NOI-5 mandates that noise levels from the activity, property, or any mechanical equipment on site shall comply with the performance standards of Section 17.120 of the Oakland Planning Code and Section 8.18 of the Oakland Municipal Code. Stationary noise impacts associated with implementation of each phase of the project are discussed below.

*Phase 1 Stationary Noise Impacts.* New stationary noise sources associated with implementation of Phase 1 of the project include the new maintenance access drive from Dover Street, the Central Utility Plant addition, and new or renovated mechanical ventilation systems on the roof of the renovated 1982 Tower and Ford Diagnostic and Treatment Center buildings, as well as the potential increase in parking lot activity associated with the existing parking garage and the Emergency Department parking lot.

Typical noise levels from parking lot activities, such as people conversing or doors slamming, generally range from 60 dBA to 70 dBA  $L_{max}$  at 50 feet; delivery truck loading and unloading activities typically generate maximum noise levels ranging from 75 dBA to 85 dBA  $L_{max}$  at 50 feet. Deliveries to the hospital and maintenance activities typically occur between the hours of 9:00 a.m. and 4:00 p.m.

The nearest residential receiving property line to the new maintenance access driveway where loading and unloading activities could occur are the residential land uses located 50 feet to the south at 720 52<sup>nd</sup> Street and 75 feet to the north at 685 53<sup>rd</sup> Street. With the shielding of existing buildings and the attenuation of noise over distance, these residential land uses could experience noise levels ranging up to 75 dBA and 70 dBA  $L_{max}$ , respectively, from loading/unloading activities in the new maintenance access driveway. This would be below the 80 dBA  $L_{max}$  threshold. Nighttime activities are not expected to occur on the maintenance access driveway.

The nearest residential receiving property line to the new Emergency Department parking lot is located approximately 150 feet to the southeast. At this distance maximum noise levels at the receiving land use would be 60 dBA. In addition, a residential unit is located 250 feet east from the parking lot; this residence would be shielded by existing buildings, resulting in a receiving noise level of 57 dBA or less. These levels would be below the threshold of 80  $L_{max}$  daytime and 65 dBA  $L_{max}$  nighttime thresholds. Therefore, this impact would be less than significant. Additionally, noise sources would be sporadic and short in duration; therefore, the driveway noise and parking lot noise would not exceed the City's operational thresholds for cumulative 1-hour noise levels.

The closest residential receiving property line is located over 200 feet from the proposed Phase 1 Central Utility Plant. At this distance, noise levels from the operation of the Central Utility Plant addition would attenuate to below the existing ambient background noise levels, which are influenced by traffic on SR 24 and BART rail noise. In addition, the project would incorporate SCA NOI-5, which requires that on-site activities associated with implementation of the project will be designed or operated with appropriate noise reduction measures to ensure compliance with the noise performance standards of the Planning Code. Patient Pavilion, Link Building, Clinical Support Building, and Family House will not generate stationary operational noise sources. Therefore, operation of the Central Utility Plant and operation of Phase 1 would not exceed the City's operational Noise Ordinance standards. This impact would be less than significant.

*Phase 2 Stationary Noise Impacts.* New stationary noise sources associated with implementation of Phase 2 of the project include the Central Utility Plant, which would be located over 350 feet from the closest off-site residential land uses, and the Parking Garage which would be over 450 feet from the closest off-site residential land uses. At these distances, noise levels from the operations of the Central Utility Plant and parking lot activities would attenuate to below the existing ambient background noise levels, which are influenced by traffic on SR 24 and BART rail noise. The project would incorporate SCA NOI-5, which requires that any mechanical equipment installed as part of the project be installed with appropriate noise reduction measures to ensure compliance with the noise performance standards of the Planning Code. Therefore hospital operations under Phase 2 of the project would also not exceed the Noise Ordinance standards. This impact would be less than significant.

**(2) Exposure of the Project to Excessive Noise Levels (General Plan).** Implementation of the proposed project would result in a significant noise impact if it would expose receptors (hospital patients) on the project site to community noise levels in conflict with the land use compatibility guidelines of the Oakland General Plan after incorporation of all applicable Standard Conditions of Approval. The City has established a "normally acceptable" exterior noise threshold for new residential and hospital land use development of 60 dBA CNEL or below. According to the City's land use compatibility guidelines, for proposed new hospital uses, exterior ambient noise levels between 60 dBA and 70 dBA CNEL are "conditionally acceptable" and noise levels between 70 and

80 are normally unacceptable, unless a detailed analysis of the noise-reduction requirements is conducted to determine if interior noise levels achieve the interior noise level standard of 45 dBA CNEL. As described above, existing ambient noise levels on the project site range from 65 dBA CNEL up to 70 dBA CNEL.

*Phase 1 Noise Impacts.* Based on the long-term ambient noise measurements and on the roadway noise contours of the Noise Element of the Oakland General Plan, shown in **Figure IV.G-2**, the project site lies within the 70 dBA CNEL contour of roadway noise from traffic on SR 24 adjacent to the project site. Additionally, existing helistop noise level would continue to range up to 70 dBA CNEL. Noise levels between 60 dBA and 70 dBA CNEL are considered “conditionally acceptable” for new hospital land use development, as shown in **Figure IV.G-4**. According to the City’s guidelines, noise reduction measures may be required and included in the proposed project’s design in order to maintain acceptable interior noise levels.

Per the current design plans, OPC2 would not have operable windows. Based on the EPA’s Protective Noise Levels,<sup>6</sup> with a combination of walls, doors, and windows, standard construction for northern California hospital buildings built to code would provide more than 25 dBA in exterior to interior noise reduction with windows closed and 15 dBA or more with windows open. With windows closed, rooms exposed to even the loudest noise levels would be reduced to meet the interior noise goal of 45 dBA  $L_{dn}$  (i.e., 70 dBA – 25 dBA = 45 dBA). Implementation of SCA NOI-4, which requires implementation of site-specific design measures to ensure interior noise level compliance as recommended by a qualified acoustical engineer, would ensure compliance with the City’s interior noise requirements of the General Plan Noise Element. In addition, implementation of SCA NOI-4 would ensure the project would not expose the project to community noise in conflict with the City’s land use compatibility guidelines, nor would it expose persons to noise levels that are in excess of established standards. Therefore, noise impacts under Phase 1 would be less-than-significant.

*Phase 2 Impacts.* As noted previously, based on the long-term ambient noise measurements and on the roadway noise contours of the Noise Element of the Oakland General Plan, shown in **Figure IV.G-2**, the project site lies within the 70 dBA CNEL contour of roadway noise from traffic on SR 24 adjacent to the project site. Additionally, helicopter noise associated with the new helistop after Phase 2 (i.e., project buildout) would range up to 70 dBA CNEL.

Phase 2 of the project would include relocation of the existing children’s playground/outdoor-rehabilitation area for the hospital. A significant impact would occur if implementation of the project would expose park uses to noise levels in excess of either the City’s land use compatibility standards for new playground land use development, as shown in **Figure IV.G-4**, or to noise levels in excess of the existing ambient noise environment conditions, whichever is greater. The children’s playground would be relocated to an area adjacent to the east side of the proposed new Patient Pavilion building. The relocated playground is located approximately 130 feet from the proposed helistop, while the existing playground is located approximately 140 feet from the existing helistop. Therefore, the relocated playground would be exposed to similar noise levels from helicopters to those of the existing playground. The Phase 2 development of the new Patient Pavilion wing would provide additional shielding for the playground area from traffic and BART noise that occurs along Martin

<sup>6</sup> EPA 550/9-79-100, November 1978.

Luther King Jr. Way. Therefore, implementation of the project would result in a slightly improved noise environment for the new playground compared to existing conditions. Therefore, noise impacts on the relocated playground would be less-than-significant.

Phase 2 would also include the construction of new buildings that would include noise sensitive receptors, including the Family Residence Building, Clinical Support Building, the Link Building, and Patient Pavilion. These new noise sensitive land uses would be exposed to noise levels ranging up to 70 dBA CNEL. As shown in **Figure IV.G-4**, the City considers environments with ambient noise levels between 60 dBA and 70 dBA CNEL to be “conditionally acceptable” for new hospital land use development.

Per the current design plans, the only building constructed under Phase 2 of the project with operable windows would be the Family Residence Building. Based on the EPA’s Protective Noise Levels, with a combination of walls, doors, and windows, standard construction for northern California hospital buildings built to code would provide more than 25 dBA in exterior to interior noise reduction with windows closed and 15 dBA or more with windows open. Therefore, windows would need to be able to remain closed in order to reduce noise levels to meet the interior noise goal of 45 dBA  $L_{dn}$  (i.e., 70 dBA – 25 dBA = 45 dBA). Therefore, an alternative form of ventilation, would be necessary in the Family Residence Building to meet the interior noise standard. Implementation of SCA NOI-4, which requires implementation of site-specific design measures to ensure interior noise level compliance as recommended by a qualified acoustical engineer, would ensure compliance with the City’s interior noise requirements of the General Plan Noise Element. In addition, implementation of SCA NOI-4 would ensure the project would not expose the project to community noise in conflict with the City’s land use compatibility guidelines, nor would it expose persons to noise levels that are in excess of established standards. Therefore, with implementation of SCA NOI-4, noise impacts under Phase 2 of the project would be less-than-significant.

Therefore, implementation of the project would not conflict with the City’s land use compatibility guidelines, and this impact would be less than significant.

**(3) Excessive Operation Noise Levels (Regulatory Agency Standards).** The project would result in a significant noise impact if it would expose persons to or generate noise levels in excess of standards established by a regulatory agency. With implementation of SCA NOI-4 and SCA NOI-5, stationary noise levels would not be expected to expose persons to noise levels in excess of applicable standards of regulatory agencies, including the Occupational Safety and Health Administration (OSHA).

As discussed under the impact analysis above, project stationary noise sources and noise sources would not result in noise levels in excess of established standards, and, therefore, this impact would be less than significant.

**(4) Excessive Construction Noise Levels (Noise Ordinance).** The proposed project would result in a significant noise impact if it would violate the City of Oakland Noise Ordinance (Oakland Planning Code Section 17.120.050) regarding construction noise, (see **Table IV.G-12**.)

Two types of short-term noise impacts would occur during demolition and construction phases of the proposed project. The first is the increase in traffic flow on local streets associated with the transport of workers, equipment, and materials to and from the project site. The pieces of heavy equipment for

demolition and construction would be moved to the site and remain for the duration of each construction phase. An increase in traffic flow on the surrounding roads due to construction traffic is expected. However, the noise levels associated with trucks arriving at and departing from the project site would be short-term and intermittent.

The second type of short-term noise impact is related to the noise generated by heavy equipment operating on the project site. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction related noise ranges to be categorized by work phase. **Table IV.G-14** lists typical construction equipment noise levels recommended for noise impact assessments based on a distance of 50 feet between the equipment and a noise receptor.

As shown in **Table IV.G-14**, the maximum noise level generated by each hydraulic excavator on the proposed project site is anticipated to be 85 dBA  $L_{max}$  at 50 feet from the earthmover. Each bulldozer would generate 85 dBA  $L_{max}$  at 50 feet. The maximum noise level generated by dump trucks is approximately 84 dBA  $L_{max}$  at 50 feet from these vehicles. Each portable generator would generate 82 dBA  $L_{max}$  at 50 feet. Impact pile driving would not be used during project construction. With each doubling of the number of sound sources of equal strength, the noise level increases by 3 dBA (e.g., two excavators operating at 86 dBA yield a total noise level of 89 dBA). Assuming that, if up to four of the loudest pieces of construction equipment operates simultaneously within 50 feet of a single receptor location, the worst case combined single-event noise level during this phase of construction would be 91 dBA  $L_{max}$  at a distance of 50 feet from the operating equipment.

**Phase 1 Construction Noise Impacts.** Phase 1 of the proposed project would include the demolition of the residential building at 5204 Martin Luther King Jr. Way to accommodate the construction of the six-story Outpatient Center Building 2 (OPC2). In addition, approximately 500 square feet of minor rear-yard additions on residential buildings at 715 53<sup>rd</sup> Street and 707 53<sup>rd</sup> Street would be demolished to accommodate a new driveway to an existing maintenance area adjacent to the existing parking structure and OPC1.

**Table IV.G-14: Typical Construction Equipment Maximum Noise Levels,  $L_{max}$**

| Type of Equipment     | Impact Device? (Yes/No) | Specification Maximum Sound Levels for Analysis (dBA at 50 feet) |
|-----------------------|-------------------------|--|
| Impact Pile Driver    | Yes                     | 95   |
| Auger Drill Rig       | No                      | 85   |
| Vibratory Pile Driver | No                      | 95   |
| Jackhammer            | Yes                     | 85   |
| Pneumatic Tool        | No                      | 85   |
| Pump                  | No                      | 77   |
| Scraper               | No                      | 85   |
| Crane                 | No                      | 85   |
| Portable Generator    | No                      | 82   |
| Roller                | No                      | 85   |
| Dozer                 | No                      | 85   |
| Tractor               | No                      | 84   |
| Front-End Loader      | No                      | 80   |
| Backhoe               | No                      | 80   |
| Excavator             | No                      | 85   |
| Grader                | No                      | 85   |
| Air Compressor        | No                      | 80   |
| Dump Truck            | No                      | 84   |
| Concrete Mixer Truck  | No                      | 85   |
| Pickup Truck          | No                      | 55   |

Source: FHWA, *Highway Construction Noise Handbook*, August 2006.



The project site is generally flat and developed with structures; a minimal amount of cut and fill would be required for project construction. The proposed OPC2 and Central Utility Plant would use either a mat foundation or drilled pier foundation system. Pile driving is not proposed as part of the project. The total duration for the construction of Phase 1 of the project is anticipated to take 58 months. Site grading and excavation for the OPC2 structure is anticipated to take 3 months. Construction of the OPC2 exterior envelope, elevators and roofing is anticipated to take 24 months. Interior construction work would begin while building exterior construction is being completed. Interior work, site work, and inspections would extend 12 months beyond completion of the exterior envelope. The interior hospital renovation construction is anticipated to take 30 months.

Phase 1 demolition and construction activities would occur immediately adjacent to on-site existing buildings, including some that would remain occupied during project construction. Therefore, the exteriors of these existing structures could be exposed to noise levels ranging up to 105 dBA  $L_{max}$  when the heaviest construction equipment operate adjacent to the structure. The nearest off-site sensitive land uses to the new maintenance access driveway demolition and construction areas are the residential land uses located at 720 52<sup>nd</sup> Street and 685 53<sup>rd</sup> Street, which are approximately 300 feet from the nearest construction area. These residential land uses could experience noise levels ranging up to 89 dBA and 87 dBA  $L_{max}$ , respectively, during the loudest phases of demolition and construction of the maintenance access driveway. The nearest off-site sensitive land uses to the OPC2 demolition and construction areas is the multi-family residential land use located 200 feet away at 783-789 52<sup>nd</sup> Street. This residential land use could experience noise levels ranging up to 80 dBA  $L_{max}$  during the loudest phases of demolition and construction of the OPC2 building. The nearest off-site sensitive land uses to the new Phase 1 Central Utility Plant addition demolition and construction areas is the single-family residential land use located at 820 51<sup>st</sup> Street approximately 250 feet from construction areas. This residential land use could experience noise levels ranging up to 81 dBA  $L_{max}$  during the loudest phases of demolition and construction of the new Central Utility Plant addition.

These construction-related noise levels could result in exceedances of the City of Oakland's standards regarding construction noise shown in **Table IV.G-12**. Implementation of SCA NOI-1, SCA NOI-2, SCA NOI-3, and SCA NOI-6, applicable to construction hours of operation, noise control, noise complaint procedures, and extreme noise generators, would reduce construction noise impacts on surrounding noise sensitive land uses. SCA NOI-6 specifically addresses impacts from extreme noise generating construction activities that may expose sensitive receptors to noise levels greater than 90 dBA  $L_{max}$ , which requires the proposed project to develop and submit for review and approval by the City a Site-specific Construction Noise Reduction Plan that would ensure that maximum feasible noise attenuation will be achieved. Therefore, implementation of SCAs NOI-1, NOI-2, NOI-3, and NOI-6, would ensure the project would comply with the City's Noise Ordinance regarding construction noise, as well as comply with the City's nuisance standards regarding persistent construction-related noise. Additionally, implementation of the draft Site-specific Construction Noise Reduction Plan as described below would reduce construction noise impacts to a less-than-significant level.

**Phase 2 Construction Noise Impacts.** Phase 2 of the proposed project would include the demolition or removal of several buildings, as described in Chapter III, Project Description. Phase 2 would include the construction of the Family Residence Building, Clinical Support Building, the Link Building and Helistop, Patient Pavilion, an additional Central Utility Plant, and a new four-story Parking Structure.

The project site is generally flat and developed with structures. Approximately 20,000 cubic yards of cut and approximately 15,000 cubic yards of fill may be required for implementation of Phase 2. Driven piles are not proposed for the construction of buildings under Phase 2. Total project construction of Phase 2 is anticipated to begin in 2020 and is anticipated to take approximately 60 months.

Similar to Phase 1, the exteriors of on-site hospital buildings could be exposed to noise levels ranging up to 105 dBA  $L_{max}$  when the heaviest construction equipment operate immediately adjacent to the structure. In addition, the outdoor sensitive use area of the existing children's playground/outdoor-rehabilitation area for the hospital could be exposed to noise levels ranging up to 87 dBA  $L_{max}$  during the loudest phase of construction of the Patient Pavilion and Parking Garage. The nearest off-site sensitive land uses to the new Family Residence Building demolition and construction areas is the adjacent residential land uses at 685 53<sup>rd</sup> Street. These residential land uses could experience noise levels ranging up to 105 dBA  $L_{max}$  if the heaviest construction equipment operate immediately adjacent to the structure. The nearest off-site sensitive land uses to the Clinical Support Building construction area is the residential land use located at 720 52<sup>nd</sup> Street. This residential land use could experience noise levels ranging up to 86 dBA  $L_{max}$  during the loudest phases of demolition associated with construction. The nearest off-site sensitive land uses to the new Link Building and Helistop construction areas is the multi-family residential land use located at 783-789 52<sup>nd</sup> Street. This residential land use could experience noise levels ranging up to 74 dBA  $L_{max}$  during the loudest phases of demolition and construction of the new Link Building and Helistop. The nearest off-site sensitive land uses to the new Patient Pavilion, Parking Structure, and Phase 2 Central Utility Plant construction areas is also the multi-family residential land use located at 783-789 52<sup>nd</sup> Street. This residential land use could experience noise levels ranging up to 74 dBA  $L_{max}$  during the loudest phases of demolition and construction of these structures.

Similar to Phase 1, Phase 2 project construction activities could result in exceedances of the City of Oakland's construction noise standard for long-term (more than 10 days) construction activities. The stated maximum allowable noise level from construction activities for receiving residential land uses is 65 dBA  $L_{eq(h)}$  or the existing background ambient noise level, whichever is higher. Multiple pieces of heavy construction equipment operating continuously at full power could exceed this hourly average standard as measured at the nearest receiving property line. Therefore, implementation of SCA NOI-1, SCA NOI-2, SCA NOI-3, and SCA NOI-6, listed above, would be required to ensure compliance with the City's Noise Ordinance standards regarding construction noise. SCA NOI-6 specifically addresses impacts from extreme noise generating construction activities that may expose sensitive receptors to noise levels greater than 90 dBA  $L_{max}$ , which requires the proposed project to develop and submit for review and approval by the City a Site-specific Construction Noise Reduction Plan as outlined below, that would ensure that maximum feasible noise attenuation will be achieved. Therefore, implementation of SCAs NOI-1, NOI-2, NOI-3, and NOI-6, would ensure the project would comply with the City's Noise Ordinance regarding construction noise, which would reduce construction noise impacts to a less-than-significant level.

**Draft Site-Specific Construction Noise Reduction Program and Acoustical Study.** Given the close proximity of the sensitive receptors in the project vicinity, construction noise levels greater than 90 dBA (i.e., "extreme noise" levels per the SCAs) could occur in the project vicinity given the noise levels of the construction equipment and activities associated with the project, as described above. Therefore, CHRCO shall implement the following additional draft site-specific noise control strategies in an effort to further implement SCA NOI-2 and achieve the maximum feasible noise attenuation. These additional strategies are consistent with those cited in SCA NOI-6 to address

extreme noise generators and that could be feasible at the project site or adjacent buildings/structures. The applicant shall submit a final site-specific construction noise reduction plan that construction contractors shall be required to implement for City review and approval at the same time as applying for any building-related permit application. This additional strategy, combined with the noise control measures in SCA NOI-2, constitutes the site-specific noise reduction program that the applicant shall require construction contractors to implement:

- e) **Temporary Noise Barrier.** To further implement SCA NOI-2, during all construction activities, a 15-foot-high temporary noise barrier shall be placed between the proposed construction site and receptor locations. The noise barrier shall require a maximum 10-foot return on each end and be oriented 45 degrees into the construction site. The temporary noise barrier could be constructed of a sound blanket system hung on scaffolding to achieve a minimum height and to allow the system to be moved or adjusted if necessary. An alternative temporary noise barrier design could consist of plywood installed on top of a portable concrete K-Rail system that also allows the ability to move or adjust the wall location.

Implementation of this draft site-specific noise control strategy, as described in SCAs NOI-1 through -3 and SCA NOI-6, represent feasible measures to mitigate construction noise and would ensure construction impacts from noise and vibration would be less than significant.

**(5) Construction Nighttime Noise Levels.** The project would result in a significant impact if during the hours of 7:00 p.m. to 7:00 a.m. on weekdays and 8:00 p.m. to 9:00 a.m. on weekends and federal holidays, it would generate noise levels at receiving land uses from construction or demolition in excess of the applicable nighttime operational noise level standards as shown in **Table IV.G-12**. As discussed above, implementation of SCA NOI-1, SCA NOI-2, SCA NOI-3, and SCA NOI-6 would be required to ensure compliance with the City's Noise Ordinance regarding construction noise, and construction nighttime noise impacts would be less than significant.

**(6) Persistent Construction Noise Levels.** The project would result in a significant impact if it would violate the City of Oakland Noise Ordinance (Oakland Municipal Code Section 8.18.020) regarding nuisance of persistent construction-related noise. As discussed under the impact discussion (4) above, with implementation of conditions SCAs NOI-1, NOI-2, NOI-3, and NOI-6, project persistent construction noise would result in a less-than-significant impact.

**(7) Excessive Groundborne Vibration.** The proposed project would result in a significant impact if it would, during either construction or operation, expose persons to or generate groundborne vibration that exceeds the criteria established by the Federal Transit Administration. This impact is addressed below for Phases 1 and 2.

**Phase 1 Impacts.** Phase 1 of the proposed project would not include any permanent source of groundborne vibration levels that would be perceptible by the average person at or beyond the project property lot lines. In addition, implementation of Phase 1 would not expose persons to existing sources of groundborne vibration because no such sources currently exist. Common sources of groundborne vibration include railroad activity. However, the portion of the BART rail line that is adjacent to the project site is elevated and located over 70 feet from closest proposed Phase 1 building, the new OPC2. At this distance, any resulting groundborne vibration levels would be attenuated to below the damage threshold for even the most sensitive structures. Therefore, implementation of the Phase 1

project would result in a less-than-significant impact in regards to exposure of persons or structures to permanent sources of groundborne vibration.

Temporary demolition and construction activities could also generate groundborne vibration levels that could exceed the FTA's construction vibration impact criteria for certain building structures. Construction vibration impacts on building structures are generally assessed in terms of peak particle velocity (PPV). Therefore, for purposes of this analysis, project related impacts on structures are expressed in terms of PPV. The Federal Transit Administration's (FTA) vibration impact criteria and impact assessment guidelines are published in their *Transit Noise and Vibration Impact Assessment* document.<sup>7</sup> The FTA guidelines include thresholds for construction vibration impacts for various structural categories as shown in **Table IV.G-15**.

**Table IV.G-15: Federal Transit Administration Construction Vibration Impact Criteria**

| Building Category                                       | PPV (inches/second) | Approximate VdB |
|---|---------------------|-----------------|
| I. Reinforced – Concrete, Steel or Timber (no plaster)  | 0.5                 | 102             |
| II. Engineered Concrete and Masonry (no plaster)        | 0.3                 | 98              |
| III. Non Engineer Timber and Masonry Buildings          | 0.2                 | 94              |
| IV. Buildings Extremely Susceptible to Vibration Damage | 0.12                | 90              |

Source: Federal Transit Administration, 2006. *Transit Noise and Vibration Impact Assessment*. May.

The only sources of project-related groundborne vibration during Phase 1 would be temporary demolition and construction activities. These activities could result in groundborne vibration levels that exceed the FTA's criteria shown in **Table IV.G-15**. During construction of the new OPC2 building, groundborne vibration levels could range up to approximately 108 VdB if heavy equipment, such as a large bulldozer, operates at full power within 5 feet of the existing parking garage structure and the existing OPC1 building. This is in excess of the FTA's groundborne vibration impact criteria for all sensitive land use types. The FTA's impact criterion for buildings where vibration would interfere with interior operations (where moderately sensitive equipment such as optical microscopes is in operation) is 65 VdB. At a distance of 130 feet, vibration levels from heavy construction equipment, such as large bulldozers operating at full power would attenuate to below the 65 VdB criteria. SCA NOI-7 requires that the project applicant shall retain a structural engineer or other appropriate professional to design means and methods of construction that shall be utilized so as to not exceed the FTA's groundborne vibration impact criteria for potentially impacted land uses. Implementation of SCA NOI-7 would ensure that groundborne vibration impacts on sensitive structures from project-related construction activities would be less-than-significant.

Based on the proposed construction methods, demolition would not require extensive use of jackhammers or comparable equipment. While limited use of jackhammers may be required based on site conditions, excavators and bobcats would primarily be used in the demolition. These types of equipment would generate vibration levels similar to the vibration levels generated by a small bulldozer resulting in typical groundborne vibration levels ranging up to 0.035 PPV for jackhammers and 0.003 PPV for the other types of equipment, as measured at a distance of 25 feet from the operating equipment. These vibration levels are well below the FTA's vibration impact criteria for even the most sensitive structures.

<sup>7</sup> Federal Transit Administration, 2006. *Transit Noise and Vibration Impact Assessment*. May.

Other types of equipment proposed to be used in construction of Phase 1 buildings would include large bulldozers and excavators. Of this equipment, a large bulldozer would generate the highest level of groundborne vibration. As shown in **Table IV.G-4**, at a distance of 25 feet, groundborne vibration levels from a large bulldozer would range up to 0.089 PPV. The closest off-site sensitive structure to Phase 1 project construction areas is located at 720 52<sup>nd</sup> Street. The exterior of this structure is located approximately 65 feet from project demolition and construction areas. At this distance, vibration levels from even large bulldozers would attenuate to below 0.022 PPV, which is below the FTA's vibration impact criteria for even the most sensitive structures. Therefore, implementation of Phase 1 would result in less-than-significant groundborne vibration impacts on off-site land uses.

Additionally, implementation of Phase 1 would include construction activities immediately adjacent to existing on-site structures. During construction of the new OPC2 building, groundborne vibration levels could range up to 0.99 PPV if heavy equipment, such as a large bulldozer, operates at full power within 5 feet of the existing parking garage structure and the existing OPC1 building. This is in excess of the FTA's construction vibration impact criteria even for structures of reinforced concrete and steel construction. SCA NOI-7 requires that the project applicant shall retain a structural engineer or other appropriate professional to determine threshold levels of vibration and cracking that could damage existing on-site sensitive (including historic) structures and design means and methods of construction that shall be utilized to not exceed the thresholds. Implementation of SCA NOI-7 would ensure that groundborne vibration impacts on sensitive structures from project-related construction activities would be less-than-significant.

**Phase 2 Impacts.** Similar to implementation of Phase 1 of the proposed project, Phase 2 would not include any permanent source of groundborne vibration that would be perceptible by the average person at or beyond the project property lot lines. In addition, implementation of Phase 2 would not expose persons to existing sources of groundborne vibration because no such sources currently exist. The portion of the BART rail line that is adjacent to the project site is elevated and located over 100 feet from closest proposed Phase 2 sensitive structure, the new Patient Pavilion building. At this distance, any resulting groundborne vibration levels would be attenuated to below the damage threshold for even the most sensitive structures. Therefore, implementation of Phase 2 of the project would result in a less-than-significant impact in regards to exposure of persons or structures to permanent sources of groundborne vibration.

Similar to Phase 1, the only sources of project-related groundborne vibration during implementation of Phase 2 would be temporary demolition and construction activities. These activities could result in groundborne vibration levels that exceed the FTA's criteria shown in **Table IV.G-15**. During construction of the new Link Building, groundborne vibration levels could range up to approximately 108 VdB if heavy equipment, such as a large bulldozer, operates at full power within 5 feet of the existing historic A/B Wing building or other structure near the site of the proposed Link Building. This is in excess of the FTA's groundborne vibration impact criteria for all sensitive land use types. The FTA's impact criteria for buildings where vibration would interfere with interior operations (where moderately sensitive equipment, such as an optical microscope, is in operation) is 65 VdB. At a distance of 130 feet, vibration levels from heavy construction equipment, such as large bulldozers operating at full power would attenuate to below the 65 VdB criteria. SCA NOI-7 requires that the project applicant retain a structural engineer or other appropriate professional to design means and methods of construction that shall be utilized to not exceed the FTA's groundborne vibration impact criteria for these impacted land uses. Implementation of SCA NOI-7 would ensure that groundborne

vibration impacts on sensitive structures from project-related construction activities would be reduced to less-than-significant.

Temporary demolition and construction activities could also generate groundborne vibration levels that could exceed the FTA's construction vibration impact criteria for off-site building structures. The closest off-site sensitive structure to Phase 2 project construction areas is located at 685 53<sup>rd</sup> Street. Project demolition and construction activities would occur on the parcel immediately east of this residential land use. Resulting groundborne vibration levels could exceed the FTA's construction vibration impact criteria for this type of structure. As discussed above, SCA NOI-7 would be implemented which requires the project applicant to retain a structural engineer or other appropriate professional to prepare a vibration analysis to determine threshold levels of vibration and cracking that could damage existing adjacent historic structures and design means and methods of construction that shall be utilized in order to avoid exceeding the thresholds. Implementation of SCA NOI-7 would ensure that groundborne vibration impacts on off-site sensitive structures from project-related construction activities would be reduced to less-than-significant.

In addition, implementation of Phase 2 would include demolition and construction activities immediately adjacent to existing on-site structures. Phase 2 would include the demolition of the B/C Wing and construction of the new Link Building immediately adjacent to the historic A/B Wing. During construction of the new Link Building, groundborne vibration levels could range up to 0.99 PPV if heavy equipment, such as a large bulldozer, operates at full power within 5 feet of adjacent structures. This is in excess of the FTA's construction vibration impact criteria even for structures of reinforced concrete and steel construction. SCA NOI-7 would require that the project applicant retain a structural engineer or other appropriate professional to prepare a vibration analysis which establishes a pre-construction baseline condition and a threshold level of vibration that could damage the structure or substantially interfere with activities located at the hospital and A/B Wing. The vibration analysis shall identify design means and methods of construction that shall be utilized in order to not exceed the thresholds. Those methods may include, for example, the use of smaller equipment within 25 feet of adjacent buildings. Therefore, implementation of SCA NOI-7 would ensure that groundborne vibration impacts on sensitive structures and activities from project-related construction activities would be reduced to less than significant.

**(8) Exposure of Receptors to Excessive Interior Noise Levels.** The project would result in a significant impact if it would expose persons to interior  $L_{dn}$  or CNEL noise levels greater than 45 dBA for multi-family dwellings, hotels, motels, dormitories, and long-term care facilities per California Noise Insulation Standards (CCR Part 2, Title 24). Interior noise levels can be estimated by assuming an exterior to interior noise reduction rate of 15 dBA, which assumes windows would be open. Therefore, ambient noise levels above 60 dBA CNEL could result in interior noise levels greater than 45 dBA.

As discussed below (see Traffic Noise discussion and Table IV.G-19), traffic associated with the proposed project would increase traffic noise in the area by 0.5 dBA, which would not result in a perceptible change to interior noise conditions for surrounding residential areas.

Additionally, new mechanical equipment associated with the project would be regulated under SCA NOI-5, which requires that any mechanical equipment installed as part of the project be installed with appropriate noise reduction measures to ensure compliance with the noise performance standards of the Planning Code. This would ensure that the project would not result in exposure of receptors to excessive interior noise levels. Therefore, stationary source noise associated with both Phase 1 and Phase 2 would result in less-than-significant impacts on interior noise levels in the project vicinity.

Helicopter annual average CNEL contours for existing conditions are shown in **Figure IV.G-5**, while CNEL contours under Phase 2 (helistop relocation) conditions are shown in **Figure IV.G-6**.<sup>8</sup> With implementation of the helistop relocation, there would be an increase in helistop-related noise exposure at 29 multi-family or apartment buildings (25 buildings located within the 60 to 65 dBA CNEL contour and 4 buildings located in the over 65 dBA contour area). In addition, relocation of the helistop would result in a decrease in helistop related noise exposure at 23 multi-family or apartment buildings (13 buildings located within the 60 to 65 dBA CNEL contour and 10 buildings within the 65 to 70 dBA CNEL). Implementation of the relocation of the helistop would result in the net increase of helistop related noise exposure at 6 multi-family or apartment buildings. As shown in **Figure IV.G-2**, existing 60 dBA CNEL roadway noise contour from SR 24, in the project vicinity, extends approximately 1 mile and encompasses the project site. As shown in **Figure IV.G-3** the existing railroad and BART noise 60 dBA contour extends approximately 0.25 miles from the BART tracks above Martin Luther King Jr. Way and in the center of SR 24 and encompasses the project site. **Figure IV.G-7** graphically displays the noise contours for helicopter noise, traffic noise, and rail noise. As shown in **Figure IV.G-7**, roadway noise sources within the helistop noise contours already expose land uses within this impact zone to noise from these other major transportation sources in excess of 60 dBA CNEL. Other areas outside the helistop's 60 dBA noise contour would be below 60 dBA and would result in interior noise levels less than 45 dBA (59 dBA – 15 dBA = 44 dBA). Therefore, noise associated with the helistop would not increase the exposure of noise sensitive land uses to excessive interior noise levels.

**(9) Substantial Permanent Increase in Noise Levels.** The project would result in an impact if it would generate noise resulting in a 5 dBA permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or if under a cumulative scenario where the cumulative increases results in a 5 dBA permanent increase in ambient noise levels in the project vicinity without the project (i.e., the cumulative condition including the project compared to the existing conditions) and a 3 dBA permanent increase is attributable to the project (i.e., the cumulative condition including the project compared to the cumulative baseline condition without the project).<sup>9</sup>

**Stationary Noise Sources.** Implementation of the proposed project would include new mechanical and electrical equipment. However, the project will incorporate SCA NOI-5 which requires that any mechanical equipment installed as part of the project be installed with appropriate noise reduction measures to ensure compliance with the noise performance standards of the Planning Code. This would ensure that the project would not result in a 5 dBA or greater permanent increase in ambient noise levels. Therefore, noise impacts from both Phase 1 and Phase 2 project-related stationary noise sources would be less than significant.

<sup>8</sup> Brown-Buntin, 2014, op. cit.

<sup>9</sup> The cumulative noise condition is the combination of all noise sources in the area.

**Helistop Operational Noise.** The annual average CNEL contours for existing (2013) conditions are shown in **Figure IV.G-5**. **Table IV.G-18** summarizes and compares calculated CNEL values at the helicopter noise impact assessment sites. The noise impact assessment sites were selected to represent areas around the hospital where noise-sensitive uses are located, and include the helicopter noise monitoring sites, plus six additional locations. In 2013, 559 helicopter flights occurred at the existing helistop and the average daily number of helicopter operations was 3.1. Helicopter activity is expected to grow at approximately 1 percent per year with or without the proposed project over the life of the Master Plan (through 2025). The projected number of annual helistop landings/departures would be 630 by 2025, and the average daily number of helicopter operations would be 3.5. The increase in helicopter activity is expected to increase the ambient noise levels in the project vicinity by a maximum of 0.4 dBA over existing conditions.

*Phase 1 Helistop Operational Noise Impacts.* As noted above, helistop operations are expected to increase with or without implantation of Phase 1. Phase 1 of the project would not include any physical changes to the existing helistop nor changes on the campus that would give reason for an increase beyond the estimated increase helistop use rate of 1 percent increase per year. Phase 1 would include construction of OPC2, relocation of vehicular access into and out of the existing parking garage, a new driveway to an existing maintenance area adjacent to the existing parking structure and OPC1, internal renovations in several existing buildings, and an addition to the Central Utility Plant. The demolition, construction and renovation proposed as part of Phase 1 is not anticipated to directly result in an increase in capacity at the Emergency Department or other facilities related to emergency medicine.

As described above, Phase 1 would not result in any changes to the helistop configuration or increase the number of helicopter trips. Therefore, helicopter operation associated with Phase 1 would not result in a permanent increase in noise.

*Phase 2 Helistop Operational Noise Impacts.* Also as noted above, helicopter activity is expected to grow with or without Phase 2 of the project. However, Phase 2 of the proposed project would include the demolition of the existing helistop located on a raised platform structure on the CHRCO campus, and construction of a new helistop on top of the proposed 5-story Link Building approximately 250 feet north and slightly west of the existing helistop. The elevation of the new helistop would be 45.5 feet higher than the existing helistop. This change in helistop location could result in changes to helicopter noise surrounding the project site. **Table IV.G-16** indicates the increase in helicopter noise levels. **Figure IV.G-7** graphically displays the 2025 helicopter noise levels in addition to traffic and BART noise.

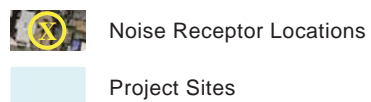
As shown in **Table IV.G-16**, relocation of the helistop proposed as part of Phase 2 would result in decreases at reference sites south of the existing helistop by up to 2.9 dBA. However, at Site G, the project would increase the CNEL from 61.2 under existing conditions to 67.4 under Phase 2 conditions, resulting in a 5.7 dBA CNEL increase from helicopter noise. Site G is located approximately 300 feet from SR 24 and approximately 450 from BART based on the City's roadway, railroad and BART noise contours and as shown in **Figure IV.G-7**, the ambient noise condition at Site G currently experiences noise levels above 70 dBA CNEL primarily due to traffic noise from SR 24.





FIGURE IV.G-6

LSA

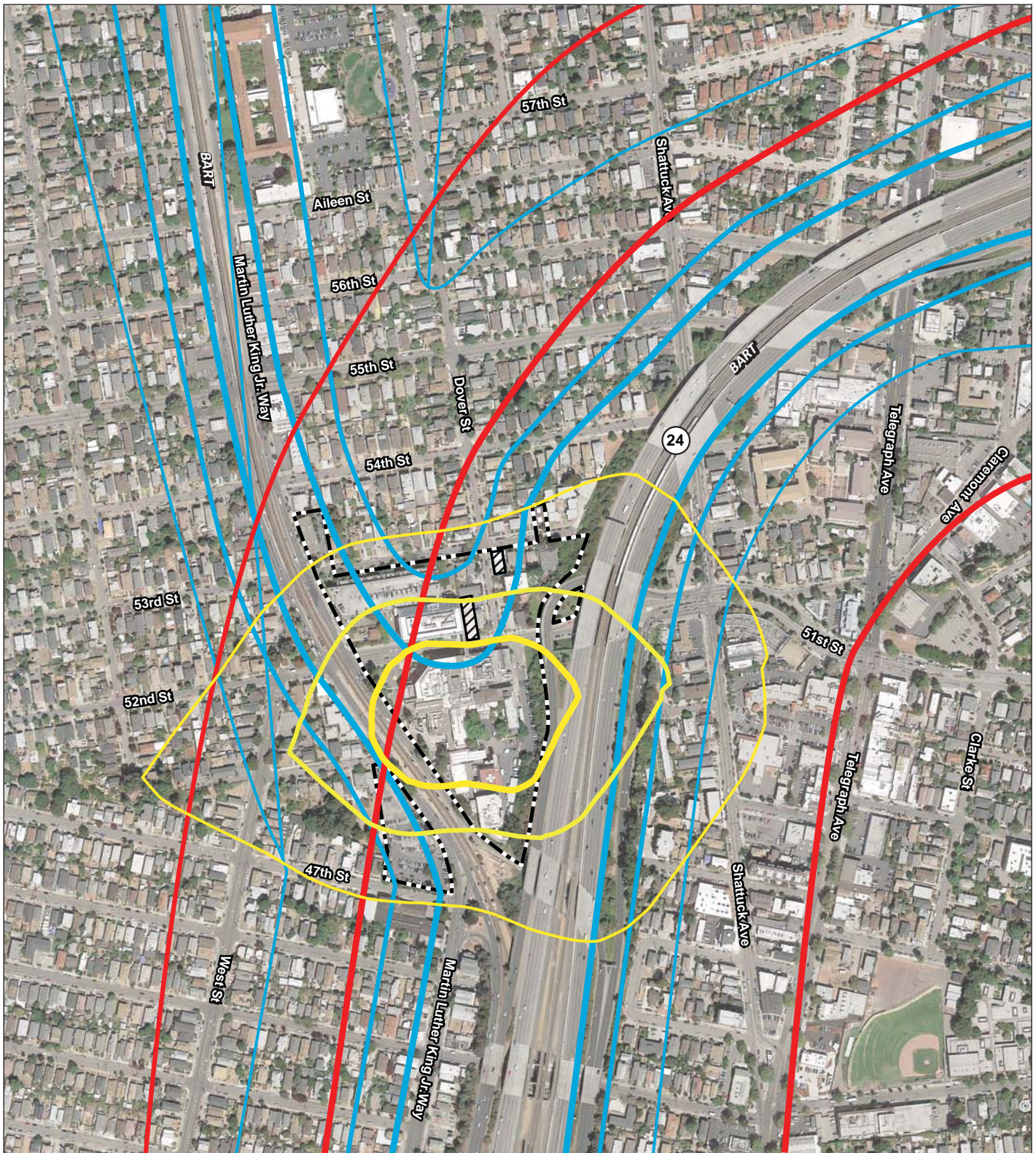


SOURCE: BROWN-BUNTIN, JULY 2014.

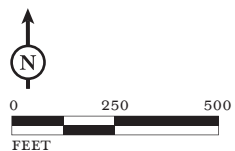
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CHRCO Campus Master Plan Project EIR  
Phase 2 CNEL Contours with Replacement Helistop





LSA



Replacement Helistop

- 70 Ldn Contour
- 65 Ldn Contour
- 60 Ldn Contour

Railroad and BART

- 70 Ldn Contour
- 65 Ldn Contour
- 60 Ldn Contour

Roadway

- 70 Ldn Contour
- 65 Ldn Contour
- Project Sites
- Private Residence, Parcel Not Owned by CHRCO

FIGURE IV.G-7

CHRCO Campus Master Plan Project EIR

CNEL Contours:

Phase 2 Helistop, Roadway and BART

SOURCES: GOOGLE EARTH, 8/12; LSA ASSOCIATES, INC., 2014.

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Monitoring conducted for LT-1 indicates noise levels are 68.3 dBA CNEL approximately 300 feet from SR 24. Similarly, Site G is 300 feet from SR 24 and is, therefore, representative of ambient noise conditions. Assuming ambient conditions at Site G are 68.3 to 70 dBA CNEL, the combined noise level (helicopter noise and traffic noise) would be 70.3 to 71.9 dBA, for a maximum ambient increase in noise of 2.0 dBA. Only noise levels of 3 dBA or more are considered perceptible by the human ear. Therefore, helicopter noise levels would not result in a substantial permanent increase in noise levels, as noise levels are already above those that would be generated by the project. Therefore, helicopter noise associated with the proposed helistop would not result in a substantial permanent increase in ambient noise levels.

Although not required to reduce an impact under CEQA, the following measure is recommended to further reduce the already less-than-significant impacts of helicopter noise in the vicinity of the project site.

**Recommendation NOI-1: The following multipart measure is recommended for implementation by CHRCO prior to operation of the replacement helistop under Phase 2 of the project:**

- CHRCO shall offer to provide forced air ventilation or an air conditioning unit and sound-insulating windows for the residence located at 720 52<sup>nd</sup> Street so that windows may remain closed for prolonged periods.
- A log of helicopter activity shall be maintained which shall include a detailed record of the date and time of arrival and departure.
- CHRCO shall develop a protocol to respond to noise complaints about helicopter over flight and submit that protocol to City staff prior to certification of the helistop.
- CHRCO shall coordinate with FAA to request a waiver to allow mufflers or other sound reducing equipment on helicopters.

Implementation of the Recommendation NOI-1 would allow for the residents to keep windows closed for prolonged periods which would reduce exterior noise levels by 15 dBA.

**Table IV.G-16: Calculated CNEL Values at Noise Impact Assessment Sites**

| Site | Existing dBA CNEL | 2025 No Project dBA CNEL <sup>a,c</sup> | Phase 2 (2025) dBA CNEL <sup>b,c</sup> | Change from Existing | Change Attributable to the Project <sup>d</sup> |
|------|-------------------|---|--|----------------------|---|
| A    | 57.6              | 58.0                                    | 59.0                                   | 1.4                  | 1.0   |
| B    | 65.4              | 65.8                                    | 64.9                                   | -0.5                 | -0.9  |
| C    | 59.2              | 59.6                                    | 57.6                                   | -1.9                 | -2.0  |
| D    | 54.5              | 54.9                                    | 57.4                                   | 2.9                  | 2.5   |
| E    | 62.0              | 62.4                                    | 60.0                                   | -2.0                 | -2.4  |
| F    | 68.6              | 69.1                                    | 66.1                                   | -2.5                 | -3.0  |
| G    | 61.2              | 61.7                                    | 67.4                                   | 6.2                  | 5.7   |
| H    | 57.1              | 57.6                                    | 58.8                                   | 1.7                  | 1.2   |
| I    | 55.2              | 55.7                                    | 57.8                                   | 2.6                  | 2.1   |
| J    | 52.7              | 53.2                                    | 55.5                                   | 2.8                  | 2.3   |
| K    | 50.5              | 51.0                                    | 51.8                                   | 1.3                  | 0.8   |
| L    | 59.1              | 59.6                                    | 62.9                                   | 3.8                  | 3.3   |

<sup>a</sup> Changes in noise level from existing conditions due to increase in helicopter trips not attributable to the project.

<sup>b</sup> Phase 2 includes the change in helistop location.

<sup>c</sup> Includes the projected 1 percent per year increase in helicopter operations not related to the project.

<sup>d</sup> Project-related changes were calculated by subtracting the 2025 "no Project" CNEL from the "Project" CNEL.

Source: Brown-Buntin Associates, Inc. 2014.

**Traffic Noise.** Both Phase 1 and Phase 2 of the project would result in minor increases in traffic and associated traffic noise levels along roadway segments in the project vicinity, as discussed below. Traffic volumes from the project's traffic impact analysis (see Section IV.D Transportation and Circulation of this EIR) were used as an input into the noise prediction model. The FHWA highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate traffic-related noise conditions in the vicinity of the project site. The resultant noise levels were weighed and summed over a 24-hour period in order to determine the CNEL values. The existing and future (year 2035) with- and without-the-project traffic volumes for roadway segments in the project site vicinity were used in the traffic noise impact analysis.

As shown in **Table IV.G-17**, the greatest increase in traffic noise levels with the project over conditions without the project would be a 1.6 dBA increase in traffic noise levels along 52<sup>nd</sup> Street from Genoa Street to West Street. This would occur under the full buildout that would be experienced under 2035 Plus Phase 1 & 2 conditions. This increase would not be perceptible in an outdoor environment and is below the significance threshold of a 5 dBA or greater increase. In addition, based on the long-term noise measurements taken and the roadway noise contours of the Noise Element of the Oakland General Plan, as shown in **Figure IV.G-2**, the project site lies within the 70 dBA CNEL contour of roadway noise from traffic on SR 24 adjacent to the project site. Therefore, project-related traffic noise levels would not result in any exceedance of existing background traffic and BART rail line activity noise levels. Therefore, implementation of both Phase 1 and Phase 2 of the proposed project would not result in a 5 dBA or greater permanent increase in ambient noise levels and therefore would result in a less-than-significant permanent increase in traffic noise levels.

**Table IV.G-17: Modeled Traffic Noise Levels at 50 feet from Centerline of Outermost Travel Lane, dBA**

| Roadway Segment   | Existing<br>(CNEL) | Existing<br>Plus<br>Phase 1<br>(CNEL) | Change<br>from<br>Existing<br>to Existing<br>Plus<br>Phase 1 | Existing<br>Plus<br>Phases<br>1&2<br>(CNEL) | Change<br>from<br>Existing<br>to Existing<br>Plus<br>Phases<br>1&2 | 2035<br>No<br>Project<br>(CNEL) | 2035<br>Plus<br>Phase 1<br>(CNEL) | Change<br>from<br>Existing<br>to 2035<br>Plus<br>Phase 1 | 2035<br>Plus<br>Phases<br>1&2<br>(CNEL) | Change<br>from<br>Existing<br>to 2035<br>Plus<br>Phases<br>1&2 | Change<br>from<br>2035<br>No Project<br>to 2035<br>Plus<br>Phases 1&2 |
|---|--------------------|---------------------------------------|--|---|--|---------------------------------|-----------------------------------|--|---|--|---|
| Martin Luther King Jr. Way - 56 <sup>th</sup> St. to 55 <sup>th</sup> St. | 65.2               | 65.2                                  | 0.0  | 65.2  | 0.0  | 65.9                            | 65.9                              | 0.7  | 66.0                                    | 0.8  | 0.1   |
| Martin Luther King Jr. Way - 55 <sup>th</sup> St. to 54 <sup>th</sup> St. | 65.6               | 65.6                                  | 0.0  | 65.7  | 0.1  | 66.1                            | 66.2                              | 0.6  | 66.2                                    | 0.6  | 0.1   |
| Martin Luther King Jr. Way - 54 <sup>th</sup> St. to 53 <sup>rd</sup> St. | 65.8               | 65.8                                  | 0.0  | 65.8  | 0.0  | 66.3                            | 66.3                              | 0.5  | 66.3                                    | 0.5  | 0.0   |
| Martin Luther King Jr. Way - 53 <sup>rd</sup> St. to 52 <sup>nd</sup> St. | 65.9               | 65.9                                  | 0.0  | 65.9  | 0.0  | 66.3                            | 66.4                              | 0.5  | 66.4                                    | 0.5  | 0.1   |
| Martin Luther King Jr. Way - 52 <sup>nd</sup> St. to SR 24 Ramps          | 66.0               | 66.0                                  | 0.0  | 66.1  | 0.1  | 66.5                            | 66.5                              | 0.5  | 66.6                                    | 0.6  | 0.1   |
| 53 <sup>rd</sup> Street - Genoa Street to Martin Luther King Jr. Way      | 49.8               | 49.8                                  | 0.0  | 49.8  | 0.0  | 51.1                            | 51.1                              | 1.3  | 51.1                                    | 1.3  | 0.0   |
| 53 <sup>rd</sup> Street - Martin Luther King Jr. Way to Dover Street      | 48.5               | 48.5                                  | 0.0  | 48.5  | 0.0  | 50.3                            | 50.3                              | 1.8  | 50.3                                    | 1.8  | 0.0   |
| 52 <sup>nd</sup> St. - Genoa St. to West St.                              | 54.9               | 54.9                                  | 0.0  | 55.0  | 0.1  | 56.4                            | 56.5                              | 1.6  | 56.5                                    | 1.6  | 0.1   |
| 52 <sup>nd</sup> St. - West St. to Martin Luther King Jr. Way             | 56.6               | 56.6                                  | 0.0  | 56.7  | 0.1  | 57.5                            | 57.6                              | 1.0  | 57.6                                    | 1.0  | 0.1   |
| 52 <sup>nd</sup> St. - Martin Luther King Jr. Way to Garage Entrance      | 58.5               | 58.5                                  | 0.0  | 58.9  | 0.4  | 58.8                            | 58.8                              | 0.3  | 59.3                                    | 0.8  | 0.5   |
| 52 <sup>nd</sup> St. - Garage Entrance to Dover St.                       | 59.5               | 59.5                                  | 0.0  | 60.1  | 0.6  | 60.0                            | 60.0                              | 0.5  | 60.5                                    | 1.0  | 0.5   |
| 52 <sup>nd</sup> St. - SR 24 Ramps to Shattuck Avenue                     | 62.8               | 62.8                                  | 0.0  | 62.9  | 0.1  | 63.4                            | 63.4                              | 0.6  | 63.5                                    | 0.7  | 0.1   |
| 51 <sup>st</sup> St. - Shattuck Avenue to Telegraph Avenue                | 60.6               | 60.7                                  | 0.1  | 60.8  | 0.2  | 61.5                            | 61.5                              | 0.9  | 61.6                                    | 1.0  | 0.1   |
| Telegraph Avenue - 55 <sup>th</sup> St. to 52 <sup>nd</sup> St.           | 63.6               | 63.6                                  | 0.0  | 63.6  | 0.0  | 64.8                            | 64.8                              | 1.2  | 64.9                                    | 1.3  | 0.1   |
| Telegraph Avenue - 52 <sup>nd</sup> St. to 51 <sup>st</sup> St.           | 63.2               | 63.2                                  | 0.0  | 63.3  | 0.1  | 64.6                            | 64.6                              | 1.4  | 64.6                                    | 1.4  | 0.0   |

Note: Shaded cells indicate roadway segments adjacent to or within the project site.

Source: LSA Associates, Inc., January 2014.

**Table IV.G-18: Calculated SEL Values (dB) and Potential Sleep Disturbance**

| Site | Existing Land Use | Existing Helipad (No Project) |                       |                                       | Replacement Helipad (Project) |                       |                                       | Percent Project-Related Change |
|------|-------------------|-------------------------------|-----------------------|---------------------------------------|-------------------------------|-----------------------|---------------------------------------|--------------------------------|
|      |                   | SEL, dB                       |                       | Maximum Percent Awakened <sup>c</sup> | SEL, dB <sup>a</sup>          |                       | Maximum Percent Awakened <sup>c</sup> |                                |
|      |                   | Exterior                      | Interior <sup>b</sup> |                                       | Exterior                      | Interior <sup>b</sup> |                                       |                                |
| A    | Residential       | 96.2                          | 81.2                  | 10.0                                  | 96.7                          | 81.7                  | 10.2                                  | +0.2                           |
| B    | Residential       | 103.1                         | 88.1                  | 12.5                                  | 101.6                         | 86.6                  | 11.9                                  | -0.6                           |
| C    | Commercial        | 98.5                          | 83.5                  | 10.8                                  | 95.4                          | 80.4                  | 9.7                                   | -0.9                           |
| D    | Residential       | 93.1                          | 78.1                  | 8.9                                   | 95.9                          | 80.9                  | 9.9                                   | +1.0                           |
| E    | Residential       | 101.5                         | 86.5                  | 11.9                                  | 97.8                          | 82.8                  | 10.5                                  | -1.4                           |
| F    | Parking Lot       | 106.1                         | 91.1                  | 13.7                                  | 101.4                         | 86.4                  | 11.9                                  | -1.8                           |
| G    | Residential       | 96.9                          | 81.9                  | 10.2                                  | 101.5                         | 86.5                  | 11.9                                  | +1.7                           |
| H    | Residential       | 95.4                          | 80.4                  | 9.7                                   | 96.2                          | 81.2                  | 10.0                                  | +0.3                           |
| I    | Residential       | 93.0                          | 78.0                  | 8.9                                   | 94.0                          | 79.0                  | 9.2                                   | +0.3                           |
| J    | Residential       | 89.6                          | 74.6                  | 7.8                                   | 90.8                          | 75.8                  | 8.2                                   | +0.4                           |
| K    | Residential       | 88.7                          | 73.7                  | 7.5                                   | 89.1                          | 74.1                  | 7.6                                   | +0.1                           |
| L    | Residential       | 96.0                          | 81.0                  | 9.9                                   | 98.3                          | 83.3                  | 10.7                                  | +0.8                           |

<sup>a</sup> Calculated by INM v7.0d for the A-109 helicopter on the flight route closest to the noise impact assessment site. Calculated SEL values represent single-event noise exposure and are not dependent upon the number of helicopter operations or planning horizon year.

<sup>b</sup> An outdoor-to-indoor noise level reduction of 15 dB is assumed for typical homes in the project area.

<sup>c</sup> Calculated using the FICAN dose-response curve for predicting sleep interference.

Sources: Brown-Buntin Associates, Inc. and FAA Non-Military Helicopter Urban Noise Study

**(10) Airport Operational Noise Impacts.** The project would result in a significant impact if, for projects located within an airport land use plan, it would expose people residing or working in the project area to excessive noise levels. The San Francisco International Airport is located approximately 13.5 miles southwest of the project site (across the Bay) and the Oakland International Airport is located approximately 4.7 miles south/southeast of the site. The project site is located outside of the 65 dBA CNEL noise contours for the both the San Francisco International Airport and the Oakland International Airport. Therefore, the project would not expose people residing or working in the project area to excessive noise levels from an airport, and thus would have no impact related to aircraft operational noise.

**(11) Airstrip Operational Noise Impacts.** The project site is not located within the vicinity of a private airstrip and would, therefore, result in no impact related to proximity to a private airstrip. Potential impacts associated with helistop operations are discussed under impact analysis (9) above.

**c. Supplemental Noise Analysis.** Additional information on the impacts of helicopter noise, and related sleep disturbance, speech interference and vibration from helicopters is discussed in this section. The noise analysis report prepared for the project provides an analysis of helicopter single event noise exposure, which was analyzed by using the INM to calculate SEL,  $L_{max}$  and Time Above (TA) values at the helicopter noise impact assessment sites. The SEL values were used to assess the potential for sleep disturbance and  $L_{max}$  and TA values were used to assess the potential for speech interference.

(1) **Sleep Disturbance.** The report summarizes calculated SEL values and the potential for sleep disturbance. The SEL values calculated by the INM were reduced by 15 dB to approximate interior noise exposure during a helicopter arrival or departure on the closest modeled flight route. Based on flight pattern data, 24 percent of annual average daily helicopter operations would be expected to occur at night between the hours of 10:00 p.m. and 7:00 a.m. Therefore, for projected future operations there would be less than one nighttime helicopter operations per day on an annual average basis. The report indicates that the maximum percent of the population expected to be awakened at the studied locations would range from approximately 7 to 14 percent under existing conditions. Under Phase 2 conditions, the maximum percentage of the population expected to be awakened would range from approximately 7 to 12 percent. The project-related changes in expected awakening range from a 1.8 percent reduction at Site F to a 1.7 percent increase at Site G. Calculated SEL values and potential sleep disturbance is shown in Table IV.G-18.

(2) **Speech Interference.** Table IV.G-19 summarizes calculated exterior  $L_{max}$  values at the helicopter noise impact assessment sites for the closest modeled flight route and the potential for speech interference when all modeled flight routes are taken into consideration. Speech interference is assumed to occur when the interior noise level exceeds 65 dB. The INM was used to calculate the time (minutes/day) that the noise level exterior to the site would exceed 80 dB (TA 80) when noise from all modeled flight routes is included. It was assumed that the time above 80 dB exterior to a home is equal to the time above 65 dB (TA 65) inside the home when the typical noise level reduction of 15 dB for homes in the project area is taken into consideration.

**Table IV.G-19: Calculated Time Above (TA) and Potential Interior Speech Interference**

| Site | Existing Land Use | Existing Helistop (No Project) |                                  |      | Replacement Helistop (Project) |                                     |   |
|------|-------------------|--------------------------------|----------------------------------|------|--------------------------------|-------------------------------------|---|
|      |                   | $L_{max}$ (dB) <sup>a</sup>    | TA 65 dB (min./day) <sup>b</sup> |      | $L_{max}$ (dB) <sup>a</sup>    | TA 65 dB (minutes/day) <sup>b</sup> |   |
|      |                   |                                | Existing                         | 2025 |                                | 2025                                | Project Related Change (minutes/day) <sup>c</sup> |
| A    | Residential       | 88.2                           | 0.5                              | 0.5  | 88.0                           | 0.5                                 | 0   |
| B    | Residential       | 94.0                           | 1.9                              | 2.1  | 92.1                           | 2.0                                 | -0.1  |
| C    | Commercial        | 90.0                           | 0.6                              | 0.7  | 86.0                           | 0.2                                 | -0.5  |
| D    | Residential       | 82.1                           | 0.1                              | 0.1  | 85.6                           | 0.5                                 | +0.4  |
| E    | Residential       | 93.0                           | 0.7                              | 0.7  | 86.8                           | 0.5                                 | -0.2  |
| F    | Parking Lot       | 99.3                           | 2.5                              | 2.8  | 96.2                           | 1.7                                 | -1.1  |
| G    | Residential       | 90.2                           | 0.5                              | 0.6  | 88.3                           | 1.9                                 | +1.3  |
| H    | Residential       | 85.5                           | 0.4                              | 0.4  | 85.5                           | 0.6                                 | +0.2  |
| I    | Residential       | 83.1                           | 0.2                              | 0.2  | 83.1                           | 0.2                                 | 0   |
| J    | Residential       | 78.6                           | 0                                | 0    | 79.8                           | 0                                   | 0   |
| K    | Residential       | 77.6                           | 0                                | 0    | 77.6                           | 0                                   | 0   |
| L    | Residential       | 86.1                           | 0.5                              | 0.5  | 86.7                           | 1.1                                 | 0.6   |

<sup>a</sup> Calculated by INM v7.0d for the A-109 helicopter on the flight route closest to the noise impact assessment site.

<sup>b</sup> The time in minutes per day that the noise level *inside* a home would be expected to exceed 65 dB, including noise from helicopter operations on all flight routes affecting the helicopter noise impact assessment site. The assumed outdoor-to-indoor noise level reduction (NLR) for typical homes in the project area is 15 dB.

<sup>c</sup> Determined by subtracting the TA 65 dB for the No Project condition from the TA 65 dB for the Project condition.

Source: Brown-Buntin Associates, Inc.

**Table IV.G-19** shows that the number of minutes per day in which the interior noise level would exceed 65 dB for the existing helistop (No Project) would be 2.8 at Site F (2025). The number of minutes per day above 65 dB for the proposed replacement helistop (Project) would be 1.9 at Site G (2025). The calculated project-related changes in interior TA 65 values range from a decrease of 1.1 minutes per day at Site F to an increase of 1.3 minutes per day at Site G.

**(3) Low Frequency Noise and Vibration.** Helicopter noise contains significant energy in the frequency range of 10-80 Hz. This energy has the potential to produce rattling of windows or objects within buildings that are located within close proximity to helistops or other areas with nearby helicopter operations. Such effects are more likely to occur in older residential buildings or in buildings of relatively light-weight construction. Such effects are less likely to occur within commercial or hospital buildings that are typically of heavier construction with more substantial windows.

Any vibration effects from project-related helicopter operations would be airborne-generated, and would affect windows first and then potentially walls and objects located on shelves or picture frames affixed to walls. Low frequency and vibration effects would be more pronounced within the hospital campus than within areas off-campus where other sensitive uses are located. As noted above, hospital buildings are of a more substantial construction than many of the older residential buildings in the project area and would be less susceptible to the effects of airborne vibration. Since the proposed replacement helistop is located more centrally within the hospital campus and at a higher elevation above the ground than the existing helistop, it is expected that the project would result in fewer potential low frequency or vibration effects at off-campus sensitive uses than the existing helistop.

The project would result in small changes to the potential for sleep disturbance and speech interference in the immediate CHRCO vicinity due to single event helicopter noise exposure. Project-related changes in the maximum number of persons expected to be awakened range from a 1.8 percent reduction to a 1.7 percent increase. Project-related changes in the number of minutes per day that the interior noise level could exceed 65 dBA, when speech interference could occur, range from a decrease of 1.1 minutes per day to an increase of 1.3 minutes per day. Information on the potential for sleep disturbance and speech interference has been provided for informational purposes as there are no established federal, state or local criteria that may be utilized for the determination of significant changes in single event noise exposure.

As shown in **Table IV.G-18** and **Table IV.G-19**, the primary location that would have a change in sleep disturbance and speech interference would be receptor Site G which represents the worst case exposure to a residential location (720 52<sup>nd</sup> Street) adjacent to OPC2 that is not owned by CHRCO.

**d. Cumulative Impacts.** The ambient noise in the project vicinity is greatly influenced by SR 24, BART and other noise sources. These existing noise sources result in continuously high ambient noise levels in the project vicinity. New stationary noise sources such as mechanical equipment (including the Central Utility Plant), parking garage activity, and delivery loading/unloading activity, which are mostly intermittent in nature and individually lasts a short period of time, would not create a perceptible permanent increase in existing ambient noise levels in the project vicinity which are dominated by noise from traffic on SR 24 and the nearby BART line. Therefore, project-related new stationary sources would contribute very limited cumulative noise to the overall ambient noise levels that are already relatively high. Helicopter activity is expected to grow at approximately 1 percent per year with or without the proposed project over the life of the Master Plan (through 2025). As



discussed under section (9) above, the relocation of the helistop would result in a maximum increase in cumulative noise levels of 1.9 dBA, and therefore would not have a significant effect. Similarly, project traffic noise levels, shown in **Table IV.G-17**, would result in a less-than-significant increase under year 2035 cumulative conditions. Traffic noise levels shown in **Table IV.G-17** include cumulative traffic in the project vicinity generated by increases in population and employment. This cumulative traffic noise, with or without the proposed project, would already be high and would continue to be one of the dominant noise sources in the project vicinity.

When considering other past, present and reasonably foreseeable development projects (which are listed in **Table IV.1** of this EIR), there would be less-than-significant noise impacts. These projects are not located within the immediate vicinity of the proposed project therefore; stationary noise sources would not contribute to an increase in cumulative ambient noise levels. Additionally, future development projects in the City of Oakland would also be subject to the City's SCA NOI-5, which would further reduce cumulative noise impacts in ambient noise.

When combined with past, present and reasonably foreseeable development projects, noise levels from project traffic would not be expected to result in any substantial increase in the existing ambient noise levels, which are dominated by traffic noise on SR 24 and by BART rail line activity. If there are additional unforeseen future development projects added to the project vicinity in the future, they would add to the future baseline traffic in the project area, and would make the project's contribution an even smaller percentage compare to the one being analyzed in this noise impact analysis. In addition, as shown in the impact analysis above, implementation of the SCA NOI-4 and NOI-5 would ensure that on-going cumulative noise impacts to on-site sensitive land uses are reduced to less-than-significant. In particular, implementation of SCA NOI-4, which requires implementation of site-specific design measures to ensure interior noise level compliance as recommended by a qualified acoustical engineer, would ensure compliance with the City's interior noise requirements of the General Plan Noise Element and would reduce the project-related traffic cumulative noise contribution to less-than-significant.

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## H. GEOLOGY, SEISMICITY AND SOILS

This section describes the project's geologic environment based on site reconnaissance, published and unpublished geologic reports and maps, and site-specific technical reports (included in Appendix F). This section also assesses potential impacts from strong ground shaking, liquefaction, slope failure, lateral slope deformation, differential settlement, and unstable or expansive soils.

### 1. Setting

This section describes the existing geologic and seismic conditions of the project and the vicinity and associated hazards. All information provided is based on the Phase I geotechnical study for the CHRCO campus,<sup>1</sup> and an April 2014 preliminary geotechnical design report for the Caltrans SR 24 right-of-way decertification area,<sup>2</sup> unless otherwise noted.

**a. Geologic Conditions.** The geology, topography and soils of the project and vicinity are described below.

**(1) Geology.** The project is located within the Coast Ranges Geomorphic Province, a relatively geologically young and seismically-active region on the western margin of the North American plate. The Coast Ranges trend northwest, subparallel to the active San Andreas Fault, and the northern and southern ranges are separated by a depression containing the San Francisco Bay. These low mountain ranges are composed of sedimentary, metamorphic, and volcanic bedrock with recent alluvium filling the intervening valleys.<sup>3</sup> The site-specific geotechnical report indicates the near surface deposits at the project site are mapped as Holocene aged alluvial fan deposits, consisting of brown or tan, medium dense to dense, gravelly sand or sandy gravel that generally grade upward to sandy or silty clay. The project site has also been mapped as the Temescal Formation, consisting of alluvial deposits that fill old channel meanders cut into the underlying San Antonio Formation. Paleochannels resulting from the meandering path of Temescal Creek underlie portions of the project site.

**(2) Topography.** The approximately 11-acre project site is located on the alluvial plain that slopes gradually southwest from the Berkeley Hills to the San Francisco Bay.<sup>4</sup> The project site is flat with a ground surface elevation of approximately 100 feet above NAVD.<sup>5</sup> Directly east of the project site, the Highway 24 ramp abutment rises at a slope of approximately 2.5:1 (horizontal to vertical) to an elevation of about 130 feet above NAVD. No open creek or stream channels cross the project site.

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<sup>1</sup> Fugro West, Inc., 2009. *Phase I Geotechnical and Geohazard Evaluation, New Hospital Replacement Project, New Patient Tower, Children's Hospital and Research Center, Oakland, California*. March.

<sup>2</sup> Fugro West, Inc., 2014. *Preliminary Geotechnical Design Report, Caltrans Right-of-Way Decertification, Children's Hospital and Research Center Oakland, California*, April 28.

<sup>3</sup> California Geographic Survey, 2002. *California Geomorphic Provinces, Note 36*.

<sup>4</sup> United States Geological Survey, 1993. *Oakland West Topographic Quadrangle Map*.

<sup>5</sup> The North American Vertical Datum of 1988 (NAVD) is, for most practical purposes, equivalent to mean sea level; however, sea level can vary. NAVD is a fixed datum that can be easily converted to other standards; for instance, the City of Oakland Vertical Datum is equal to NAVD minus 5.7 feet.

Temescal Creek is contained in an underground culvert, which runs east to west immediately south of the project location.<sup>6</sup>

**(3) Soils.** Multiple geotechnical investigations have been conducted at the project site, including the completion of over 30 borings between 1978 and 2008 to depths up to 150 feet below ground surface.<sup>7</sup> Soil observations during drilling indicate that in general, up to 4 to 8 feet of clay fill with varying amounts of sand and gravel are present in proposed development areas at the project site. Stiff lean clay was typically encountered directly below the fill, underlain by interlayered clayey sands to sandy clays over stiff lean clay. The Phase I geotechnical report interpreted the clayey sands as paleochannel deposits associated with a meandering Temescal Creek, as the creek bed location shifted gradually over geologic time from the origins of the creek until it was channelized in an underground culvert. Soils within the Caltrans right-of-way decertification area consisted of 15 to 32 feet of clayey sand and gravel fill (referred to as Caltrans Embankment Fill in the report), overlying native alluvial soils consisting of sandy lean clay, interlayered clayey sands and sandy clays over stiff lean clay.

Natural Resource Conservation Service maps soils at the site as Urban land-Danville complex.<sup>8</sup> This soil is characterized as well-drained, with slow permeability, high shrink-swell potential and low strength.

**b. Seismic Conditions.** The entire San Francisco Bay Area is located within the San Andreas Fault Zone (SAFZ), a complex of active faults forming the boundary between the North American and Pacific lithospheric plates. Movement of the plates relative to one another results in the accumulation of strain along the faults, which is released during earthquakes. Numerous moderate to strong historic earthquakes have been generated in northern California by the SAFZ. The SAFZ includes numerous faults found by the California Geological Survey under the Alquist-Priolo Earthquake Fault Zoning Act (A-PEFZA) to be “active” (i.e., to have evidence of fault rupture in the past 11,000 years). Active faults in the San Francisco Bay Area zoned under the A-PEFZA include the Northern San Andreas, Hayward-Rodgers Creek, Calaveras, Maacama, West Napa, Concord-Green Valley, Greenville, Sargent, and San Gregorio-Seal Cove faults. The closest A-PEFZA faults to the project site are the Hayward-Rodgers Creek Fault, located about 2.1 miles northeast; the Calaveras Fault, located about 13 miles east; the Concord-Green Valley Fault, located about 16 miles northeast; and the San Andreas Fault, located approximately 17 miles southwest.<sup>9,10</sup> Additional faults in the project site vicinity have the potential to generate seismic shaking. Regional active faults are shown on **Figure IV.H-1**.

<sup>6</sup> Fugro West, Inc., 2009, op cit.

<sup>7</sup> Ibid.

<sup>8</sup> Natural Resources Conservation Services, 2013. *Web Soil Survey*. Website: [websoilsurvey.nrcs.usda.gov](http://websoilsurvey.nrcs.usda.gov) (accessed September 30, 2013).

<sup>9</sup> California Geographic Survey, 1982. State of California Special Studies Zones, Oakland East and Oakland West Quadrangles. Website: [www.quake.ca.gov/gmaps/ap/ap\\_maps.htm](http://www.quake.ca.gov/gmaps/ap/ap_maps.htm).

<sup>10</sup> California Geographic Survey, 2010. 2010 Fault Activity Map of California, Geologic Data Map No. 6. Website: [www.quake.ca.gov/gmaps/FAM/faultactivitymap.html](http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html).





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The U.S. Geological Survey's Working Group on California Earthquake Probabilities estimated that there is a 63 percent probability that one or more moment magnitude ( $M_w$ )<sup>11</sup> 6.7 or greater earthquakes will occur in the San Francisco Bay Area between 2007 and 2036. The probability of a  $M_w$  6.7 magnitude or greater earthquake occurring along individual faults was estimated to be 21 percent along the San Andreas Fault, 31 percent along the Hayward Fault, and 7 percent along the Calaveras Fault.<sup>12</sup>

**c. Seismic and Geologic Hazards.** Topics related to seismic and geologic hazards are described below.

**(1) Surface Rupture.** No active faults as mapped by the CGS, A PEFZA, or indicated in the Oakland General Plan intersect the project site, and none were identified by the geotechnical studies.<sup>13,14,15,16</sup> Fault rupture of the surface typically occurs along existing faults that have ruptured the surface in the past. Since faults with known surface rupture have been mapped in California, and none are known to occur at the project site, the potential for fault rupture at the project site is remote.

**(2) Ground Shaking.** Ground shaking is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake, and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. Magnitude is a measure of the energy released by an earthquake, and is reported as  $M_w$  or Richter magnitude. The Modified Mercalli Intensity Scale (MMI), shown in **Table IV.H-1**, is a subjective measure of the perceptible effects of an earthquake at a given point and varies with distance from the epicenter and local geologic conditions. Intensity can also be quantitatively measured using accelerometers (strong motion seismographs) that record ground acceleration at a specific location. Acceleration is measured as a fraction or percentage of the acceleration of gravity ( $g$ ).<sup>17</sup>

The closest active fault to the project site is the Hayward fault zone. The north and south Hayward faults together are considered capable of generating about a  $M_w$  6.9 earthquake. An earthquake of this magnitude would generate very strong to violent seismic shaking (MMI VIII-IX) at the project site.<sup>18</sup>

<sup>11</sup> Moment magnitude ( $M_w$ ) is now commonly used to characterize seismic events as opposed to Richter Magnitude. Moment magnitude is determined from the physical size (area) of the rupture of the fault plane, the amount of horizontal and/or vertical displacement along the fault plane, and the resistance to rupture of the rock type along the fault.

<sup>12</sup> United States Geological Survey, 2008. *Forecasting California's Earthquakes – What Can We Expect in the Next 30 Years*, USGS Fact Sheet 2008-3027. Website: [pubs.usgs.gov/fs/2008/3027](http://pubs.usgs.gov/fs/2008/3027).

<sup>13</sup> California Geographic Survey, 1982. State of California Special Studies Zones, Oakland East and Oakland West Quadrangles. Website: [www.quake.ca.gov/gmaps/ap/ap\\_maps.htm](http://www.quake.ca.gov/gmaps/ap/ap_maps.htm).

<sup>14</sup> Oakland, City of, 2004. *General Plan, Safety Element*. Amended 2012.

<sup>15</sup> California Geographic Survey, 2010b, op. cit.

<sup>16</sup> Fugro West, Inc., 2009, op. cit.

<sup>17</sup> The acceleration due to gravity, denoted  $g$  (also gee) is a unit of acceleration defined as approximately 32 ft/s<sup>2</sup>, which is the acceleration due to gravity on the Earth's surface at sea level.

<sup>18</sup> Association of Bay Area Governments, 2003. Earthquake Program. Earthquake Hazard Map, North Oakland, Piedmont/Emeryville, Scenario: North Hayward and South Hayward Segments of the Hayward-Rodgers Creek Fault System. Website: [www.abag.ca.gov](http://www.abag.ca.gov).

This level of shaking would be expected to create considerable damage to structures and infrastructure at the project site.

**Table IV.H-1: Modified Mercalli Intensity Scale**

|      |   |
|------|---|
| I    | Not felt except by a very few under especially favorable circumstances.   |
| II   | Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.  |
| III  | Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration like passing of truck. Duration estimated.   |
| IV   | During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.   |
| V    | Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.  |
| VI   | Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.  |
| VII  | Everybody runs outdoors. Damage negligible in building of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.   |
| VIII | Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed. |
| IX   | Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.   |
| X    | Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.  |
| XI   | Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.  |
| XII  | Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted.   |

Source: California Geological Survey, 2002. *How Earthquakes and Their Effects are Measured: Note 32.*

Estimates of the peak horizontal ground acceleration (PGA) have been made for the Bay Area based on probabilistic models that account for multiple seismic sources. Under these models, consideration of the probability of expected seismic events is incorporated into the determination of the level of ground shaking at a particular location. The expected PGA (with a 10 percent chance of being exceeded in the next 50 years) generated by any of the seismic sources potentially affecting the project site is estimated by the California Geological Survey as 0.688.<sup>19</sup> Site-specific ground

<sup>19</sup> California Geological Survey, 2012. *Probabilistic Seismic Hazards Mapping Ground Motion Page*. Website: [www.consrv.ca.gov/cgs/rghm/pshamap/pshamain.html](http://www.consrv.ca.gov/cgs/rghm/pshamap/pshamain.html) (accessed October 16, 2013).



acceleration was calculated based on soils encountered during geotechnical investigations, and the design PGA for the project site was reported to be 0.76 g to 0.78 g.<sup>20,21,22</sup>

**(3) Liquefaction and Lateral Spreading.** Liquefaction is the temporary transformation of loose, saturated granular sediments from a solid state to a liquefied state as a result of seismic ground shaking. In the process, the soil undergoes transient loss of strength, which commonly causes ground displacement or ground failure to occur. Since saturated soils are a necessary condition for liquefaction, soil layers in areas where the groundwater table is near the surface have higher liquefaction potential than those in which the water table is located at greater depths. Geotechnical investigations indicate groundwater fluctuates between 7.5 and 20 feet below ground surface.<sup>23</sup>

Lateral spreading is a form of horizontal displacement of soil toward an open channel or other “free” face, such as an excavation boundary. In a lateral spread failure, a layer of ground at the surface is carried on an underlying layer of liquefied material over a nearly flat surface toward a river channel or other bank.<sup>24</sup> The lateral spreading hazard will tend to mirror the liquefaction hazard for a site.

The project site is located within a California Geological Survey Seismic Hazard Zone for liquefaction as defined by the Seismic Hazards Mapping Act, indicating a liquefaction investigation is required in this area by the State of California.<sup>25</sup> ABAG rates the project area as a moderate liquefaction hazard area.<sup>26</sup> Site-specific liquefaction studies were conducted by Fugro in 2008 and 2009 in parts of the project site proposed for development. These studies indicated the project site generally has a low potential for liquefaction, although soils at two locations in the southern portion of the project site had thin layers of clayey sand, presumed to be paleochannels of Temescal Creek, which may be susceptible to liquefaction.<sup>27</sup> Large-scale lateral spreading is considered unlikely because the project site is essentially level and the probability for liquefaction is considered low, except in localized areas in the southern portion of the project site.<sup>28, 29</sup>

**(4) Expansive Soils.** Expansion and contraction of volume can occur when expansive soils undergo alternating cycles of wetting (swelling) and drying (shrinking). During these cycles, the

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<sup>20</sup> Fugro West, Inc., 2008. *Phase-I Geotechnical and Geohazard Evaluation, Central Utility Plant, Children’s Hospital & Research Center, Oakland, California*. October.

<sup>21</sup> Fugro West, Inc., 2009, op. cit.

<sup>22</sup> Fugro West, 2014, op. cit.

<sup>23</sup> Ibid.

<sup>24</sup> Association of Bay Area Governments, 2001. *The REAL Dirt on Liquefaction, A Guide to the Liquefaction Hazard in Future Earthquakes Affecting the San Francisco Bay Area*. February.

<sup>25</sup> California Department of Conservation, 2012. Seismic Hazard Zones, Oakland West Quadrangle. Website: [www.conservation.ca.gov/cgs/shzp/Pages/Index.aspx](http://www.conservation.ca.gov/cgs/shzp/Pages/Index.aspx). October 26.

<sup>26</sup> Association of Bay Area Governments, 2003. Liquefaction Hazard Map for North Oakland/Piedmont/Emeryville, Scenario: North Hayward and South Hayward Segments of the Hayward-Rodgers Creek Fault System. Website: [www.abag.ca.gov](http://www.abag.ca.gov).

<sup>27</sup> Fugro West, Inc., 2009, op. cit.

<sup>28</sup> Ibid.

<sup>29</sup> Fugro West, 2014, op. cit.

volume of the soil changes markedly. As a consequence of such volume changes, structural damage to building and infrastructure may occur if the potentially expansive soils were not considered in project design and during construction. The geotechnical investigation concluded that the moderate to high expansion potential of the clayey surface soils at the project site warrants special design considerations for building foundations and retaining walls proposed for the Caltrans right-of-way decertification area.<sup>30, 31</sup>

**(5) Slope Stability.** Slope failure can occur as either rapid movement of large masses of soil (“landslide”) or slow, continuous movement (“creep”). The primary factors influencing the stability of a slope are: 1) the nature of the underlying soil or bedrock; 2) the geometry of the slope (height and steepness); 3) rainfall; and 4) the presence of previous landslide deposits. The project site is not located within a State of California designated seismically-induced landslide hazard zone, indicating a geotechnical investigation<sup>32</sup> or an Oakland landslide hazard zone.<sup>33</sup> Regional mapping shows that the project area is mapped as Category 1, “areas of zero to five percent slope that are not underlain by landslide deposits.”<sup>34</sup> Site-specific geotechnical studies indicate the potential for landsliding at the project site is low.<sup>35</sup>

Retaining walls in the Caltrans right-of-way decertification area prevent instability of the manmade slopes of the highway embankment.<sup>36</sup> Slope stability issues on relatively flat sites such as the CHRCO campus are generally related directly to construction activities such as spoils and dirt stockpiles, and trenching and sub-surface excavation activities and would not be anticipated post-construction.

**(6) Settlement and Differential Settlement.** Differential settlement or subsidence could occur if buildings or other improvements were built on low-strength foundation materials (including imported non-engineered fill) or if improvements straddle the boundary between different types of subsurface materials (e.g., a boundary between native material and fill). Although differential settlement generally occurs slowly enough that its effects are not dangerous to inhabitants, it can cause significant building damage over time.

The project site has been developed and it would be expected that some settlement has occurred in the past due to existing and historical structural loads. The potential for settlement of soils above groundwater due to earthquake-induced ground shaking at the project site is low.<sup>37, 38</sup> Portions of the

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<sup>30</sup> Fugro West, Inc., 2009, op cit..

<sup>31</sup> Fugro West, 2014, op. cit.

<sup>32</sup> California Department of Conservation, 2012, op. cit.

<sup>33</sup> Oakland, City of, 2012. *General Plan, Safety Element, Appendix F: Local Hazard Mitigation Plan*. Adopted March 20.

<sup>34</sup> Nilson, Tor H., and Robert H. Wright, 1979. *Relative Slope Stability and Land-Use Planning in the San Francisco Bay Region, California*. USGS Professional Paper 944, USGS & HUD, Washington D.C.

<sup>35</sup> Fugro West, Inc., 2009, op. cit.

<sup>36</sup> Fugro West, 2014, op. cit.

<sup>37</sup> Fugro West, Inc., 2009, op. cit.

<sup>38</sup> Fugro West, 2014, op. cit.

CHRCO project site that contain loose or uncontrolled (non-engineered) fill may be susceptible to settlement or differential settlement, and construction of new structures could potentially induce additional settlement. The potential for settlement induced by retaining walls and other improvements proposed for the Caltrans right-of-way certification area is considered low.<sup>39</sup>

**d. Regulatory Setting.** Federal, State, and local regulations related to geology, seismicity, soils and building safety are described below.

**(1) Federal National Earthquake Hazards Reduction Program.** The National Earthquake Hazards Reduction Program (NEHRP) was established by the U.S. Congress when it passed the Earthquake Hazards Reduction Act of 1977, Public Law (PL) 95–124. In establishing NEHRP, Congress recognized that earthquake-related losses could be reduced through improved design and construction methods and practices, land use controls and redevelopment, prediction techniques and early-warning systems, coordinated emergency preparedness plans, and public education and involvement programs. The four basic NEHRP goals remain unchanged:

- Develop effective practices and policies for earthquake loss reduction and accelerate their implementation.
- Improve techniques for reducing earthquake vulnerabilities of facilities and systems.
- Improve earthquake hazards identification and risk assessment methods, and their use.
- Improve the understanding of earthquakes and their effects.
- Several key federal agencies contribute to earthquake mitigation efforts. There are four primary NEHRP agencies:
  - National Institute of Standards and Technology (NIST) of the Department of Commerce
  - National Science Foundation (NSF)
  - United States Geological Survey (USGS) of the Department of the Interior
  - Federal Emergency Management Agency (FEMA) of the Department of Homeland Security

Implementation of NEHRP priorities is accomplished primarily through original research, publications, and recommendations to assist and guide state, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

**(2) California Alquist-Priolo Earthquake Fault Zoning Act.** The A-PEFZA was passed in 1972 by the State legislature to mitigate the hazard of surface fault rupture by regulating structures designated for human occupancy near active faults. As required by the Act, the CGS has delineated Earthquake Fault Zones along known active faults in California.

**(3) California Building Standards Code.** The 2013 California Building Code (CBC), which refers to Part 2 of the California Building Standards Code in Title 24 of the California Code of

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<sup>39</sup> Ibid.

Regulations, is based on the 2009 International Building Code. The 2013 CBC covers grading and other geotechnical issues, building specifications, and non-building structures. The City of Oakland follows the most current state building codes. The City of Oakland's Building Services Division is responsible for reviewing plans, issuing building permits and conducting field inspections.

The CBC requires that a site-specific geotechnical investigation report be prepared by a licensed professional for proposed developments of one or more buildings greater than 4,000 square feet to evaluate geologic and seismic hazards. Buildings less than or equal to 4,000 square feet also are required to prepare a geologic engineering report, except for one-story, wood-frame and light-steel-frame buildings of Type V construction that are located outside of the Alquist-Priolo Earthquake Faults Zones.

The purpose of a site-specific geotechnical investigation is to identify seismic and geologic conditions that require project mitigation, such as surface fault ruptures, ground shaking, liquefaction, differential settlement, lateral spreading, expansive soils, and slope stability. Requirements for the geotechnical investigation are presented in Chapter 16 "Structural Design" and Chapter 18 "Soils and Foundation" of the 2013 CBC. In the City of Oakland, the geotechnical investigation report would be reviewed by the Building Services Division prior to issuance of building permits to ensure compliance.

**(4) California Seismic Hazards Mapping Act (SHMA).** In 1990, following the 1989 Loma Prieta earthquake, the California legislature enacted the SHMA to protect the public from the effects of strong ground shaking, liquefaction, landslides, and other seismic hazards. The SHMA established a state-wide mapping program to identify areas subject to violent shaking and ground failure; the program is intended to assist cities and counties in protecting public health and safety. The CGS is mapping SHMA Zones and has completed seismic hazard mapping for the portions of California most susceptible to liquefaction, ground shaking, and landslides: primarily the San Francisco Bay area and Los Angeles basin. A geotechnical investigation for projects within seismic hazard zones must be conducted and appropriate mitigation measures incorporated into the project design before a development permits will be granted.

**(5) California State Senate Bill 1953 (SB 1953).** Following the 1994 Northridge earthquake, the California legislature amended the 1973 Hospital Facilities Seismic Safety Act (HFSSA). SB 1953 requires that all acute care hospitals in California evaluate and report on both the structural and non-structural safety of each of its hospital buildings. In addition, SB 1953 requires all hospitals to retrofit, rebuild, or close their general acute care inpatient hospital buildings by specific dates if they do not meet strict new seismic safety standards. Performance standards were developed by the Office of Statewide Health Planning and Development (OSHPD), which enforces those standards and issues all building and occupancy permits for hospital facilities. Follow-up legislation to SB 1953 include SB 499, which added additional reporting requirements, and SB 90, which allows hospital an extension of the timeline to meet certain seismic requirements for Structural Performance Category (SPC)-I buildings.

By January 1, 2013, every hospital building was required to meet specific construction standards established to keep these structures standing (though potentially not operational) after a major earthquake. By January 1, 2030, the law requires all hospital buildings to comply with standards intended to keep these buildings operational following a severe earthquake. CHRCO has prepared a

Seismic Compliance Plan to bring hospital buildings and processes into compliance with SB 1953 mandates and deadlines.<sup>40</sup>

**(6) Oakland General Plan.** The following policies and action items from the Safety and the Open Space, Conservation and Recreation (OSCAR) Elements of the City of Oakland General Plan<sup>41</sup> specifically address soils, geology and/or seismic hazards and are applicable to the proposed project.

#### **Safety Element Policy Statements Related to Geologic Hazards**

- Policy GE-1: Develop and continue to enforce and carry out regulations and programs to reduce seismic hazards and hazards from seismically triggered phenomena.
  - Action GE-1.2: Enact regulations requiring the preparation of site-specific geologic or geotechnical reports for development proposals in areas subject to earthquake-induced liquefaction, settlement or severe ground shaking, and conditioning project approval on the incorporation of necessary mitigation measures.
- Policy GE-2: Continue to enforce ordinances and implement programs that seek specifically to reduce the landslide and erosion hazards.
  - Action GE-2.1: Continue to enforce provisions under the subdivision ordinance requiring that, under certain conditions, geotechnical reports be filed and soil hazards investigations be made to prevent grading from creating unstable slopes, and that any necessary corrective actions are taken.
  - Action GE-2.2: Continue to enforce the grading, erosion and sedimentation ordinance by requiring, under certain conditions, grading permits and plans to control erosion and sedimentation.
- Policy GE-3: Continue, enhance or develop regulations and programs designed to minimize seismically related structural hazards from new and existing buildings.
  - Action GE-3.1: Adopt and amend as needed updated versions of the California building code so that optimal earthquake-protection standards are used in construction and renovation projects.
  - Action GE-3.2: Continue to enforce the unreinforced masonry ordinance to require that potentially hazardous unreinforced masonry buildings be retrofitted or be otherwise made to reduce the risk of death and injury from their collapse during an earthquake.
  - Action GE-3.3: Continue to enforce the earthquake-damaged structures ordinance to ensure that buildings damaged by earthquakes are repaired to the extent practicable.
- Policy GE-4: Work to reduce potential damage from earthquakes to “lifeline” utility and transportation systems.
  - Action GE-4.4: Continue to designate underground utility districts for the purpose of replacing aboveground electric and phone wires and other structures with underground facilities, and use the planning-approval process to ensure that all new utility lines will be installed underground from the start.

<sup>40</sup> Children’s Hospital Research Center Oakland, 2010. *SB 499 Compliance Plan*. April 8.

<sup>41</sup> Oakland, City of, 2004. *General Plan Safety Element*. Website: [www2.oaklandnet.com/Government/o/PBN/OurServices/GeneralPlan/DOWD009020](http://www2.oaklandnet.com/Government/o/PBN/OurServices/GeneralPlan/DOWD009020) (accessed March 8, 2013).

### OSCAR Element Policy Statements Related to Soils

- **Policy CO-1.1:** Soil loss in new development. Regulate development in a manner which protects soil from degradation and misuse or other activities which significantly reduce its ability to support plant and animal life. Design all construction to ensure that soil is well secured so that unnecessary erosion, siltation of streams, and sedimentation of water bodies does not occur.
  - **Action CO-1.1.1:** Soil-related development controls—Maintain, enforce, and periodically review development controls affecting soil removal, including the Grading Ordinance and the Sedimentation and Erosion Control Ordinance.
  - **Action CO-1.1.3:** Consideration of soil constraints in development—Consider soil constraints such as shrink-swell and low soil strength in the design of buildings and roads. Suitable base materials and drainage provisions should be incorporated where necessary.
- **Policy CO-2.2:** Unstable geologic features. Retain geologic features known to be unstable, including serpentine rock, areas of known landsliding, and fault lines, as open space. Where feasible, allow such lands to be used for low-intensity recreational activities.
  - **Action CO-2.2.1:** Geo-technical study requirements—Maintain Standard Operating Procedures in the Office of Planning and Building which require geo-technical studies for major developments in areas with moderate to high ground shaking or liquefaction potential, or other geologically unstable features.
- **Policy CO-2.3:** Development on filled soils. Require development on filled soils to make special provisions to safeguard against subsidence and seismic hazards.

(7) **Local Hazard Mitigation Plan, Oakland Annex.** As part of the ABAG multi-jurisdictional Local Hazard Mitigation Plan, the City of Oakland prepared a Plan Annex, which serves as an amendment to the Safety Element of the General Plan.<sup>42</sup> The following mitigation strategies in the Plan Annex apply to geologic and seismic safety:

- **Specific Mitigation Strategy INFR-b-4:** Install specially-engineered pipelines in areas subject to faulting, liquefaction, earthquake-induced landsliding, or other earthquake hazard.
- **Specific Mitigation Strategy INFR-b-6:** Install portable facilities (such as hoses, pumps, emergency generators, or other equipment) to allow pipelines to bypass failure zones such as fault rupture areas, areas of liquefaction, and other ground failure areas (using a priority scheme if funds are not available for installation at all needed locations).
- **Specific Mitigation Strategy INFR-b-8:** Comply with all applicable building and fire codes, as well as other regulations (such as state requirements for fault, landslide, and liquefaction investigations in particular mapped areas) when constructing or significantly remodeling infrastructure facilities.

(8) **City of Oakland's Standard Conditions of Approval.** The City's Standard Conditions of Approval relevant to this impact topic are listed below for reference. The Conditions of Approval will be adopted as requirements of the proposed project if the project is approved by the City.

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<sup>42</sup> Oakland, City of, 2010. *Local Hazard Mitigation Plan, Oakland Annex*.

**SCA GEO-1: Erosion and Sedimentation Control Plan.** *Applies to all projects requiring a Grading Permit. Prior to any grading activities:*

- The project applicant shall obtain a grading permit. The grading permit application shall include an erosion and sedimentation control plan for review and approval by the Building Services Division. The erosion and sedimentation control plan shall include all necessary measures to be taken to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to lands of adjacent property owners, public streets, or to creeks as a result of conditions created by grading operations. The plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and stormwater retention basins. Off-site work by the project applicant may be necessary. The project applicant shall obtain permission or easements necessary for off-site work. There shall be a clear notation that the plan is subject to changes as changing conditions occur. Calculations of anticipated stormwater runoff and sediment volumes shall be included, if required by the Director of Development or designee. The plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the project applicant shall clear the system of any debris or sediment.

Ongoing throughout grading and construction activities:

- The project applicant shall implement the approved erosion and sedimentation plan. No grading shall occur during the wet weather season (October 15 through April 15) unless specifically authorized in writing by the Building Services Division.

**SCA GEO-2: Soils Report.** *Required as part of the submittal of a Tentative Tract or Tentative Parcel Map.*

A preliminary soils report for each construction site within the project area shall be required as part of this project and submitted for review and approval by the Building Services Division. The soils reports shall be based, at least in part, on information obtained from on-site testing. Specifically the minimum contents of the report should include:

- Logs of borings and/or profiles of test pits and trenches:
  - The minimum number of borings acceptable, when not used in combination with test pits or trenches, shall be two (2), when in the opinion of the Soils Engineer such borings shall be sufficient to establish a soils profile suitable for the design of all the footings, foundations, and retaining structures.
  - The depth of each boring shall be sufficient to provide adequate design criteria for all proposed structures.
  - All boring logs shall be included in the soils report.
- Test pits and trenches
  - Test pits and trenches shall be of sufficient length and depth to establish a suitable soils profile for the design of all proposed structures.
  - Soils profiles of all test pits and trenches shall be included in the soils report.
- A plat shall be included which shows the relationship of all the borings, test pits, and trenches to the exterior boundary of the site. The plat shall also show the location of all proposed site improvements. All proposed improvements shall be labeled.
- Copies of all data generated by the field and/or laboratory testing to determine allowable soil bearing pressures, shear strength, active and passive pressures, maximum allowable slopes where applicable

and any other information which may be required for the proper design of foundations, retaining walls, and other structures to be erected subsequent to or concurrent with work done under the grading permit.

- Soils Report. A written report shall be submitted which shall include, but is not limited to, the following:
  - Site description;
  - Local and site geology;
  - Review of previous field and laboratory investigations for the site;
  - Review of information on or in the vicinity of the site on file at the Information Counter, City of Oakland, Office of Planning and Building;
  - Site stability shall be addressed with particular attention to existing conditions and proposed corrective attention to existing conditions and proposed corrective actions at locations where land stability problems exist;
  - Conclusions and recommendations for foundations and retaining structures, resistance to lateral loading, slopes, and specifications, for fills, and pavement design as required;
  - Conclusions and recommendations for temporary and permanent erosion control and drainage. If not provided in a separate report they shall be appended to the required soils report;
  - All other items which a Soils Engineer deems necessary;
  - The signature and registration number of the Civil Engineer preparing the report.
- The Director of Planning and Building may reject a report that she/he believes is not sufficient. The Director of Planning and Building may refuse to accept a soils report if the certification date of the responsible soils engineer on said document is more than three years old. In this instance, the Director may require that the old soils report be recertified, that an addendum to the soils report be submitted, or that a new soils report be provided.

**SCA GEO-3: Geotechnical Report.** *Required as part of the submittal of a tentative Tract Map or tentative Parcel Map.*

- A site-specific, design level, landslide or liquefaction geotechnical investigation for each construction site within the project area shall be required as part of this project and submitted for review and approval to the Building Services Division. Specifically:
  - Each investigation shall include an analysis of expected ground motions at the site from identified faults. The analyses shall be accordance with applicable City ordinances and policies, and consistent with the most recent version of the California Building Code, which requires structural design that can accommodate ground accelerations expected from identified faults.
  - The investigations shall determine final design parameters for the walls, foundations, foundation slabs, surrounding related improvements, and infrastructure (utilities, roadways, parking lots, and sidewalks).
  - The investigations shall be reviewed and approved by a registered geotechnical engineer. All recommendations by the project engineer, geotechnical engineer, shall be included in the final design, as approved by the City of Oakland.
  - The geotechnical report shall include a map prepared by a land surveyor or civil engineer that shows all field work and location of the "No Build" zone. The map shall include a statement that the locations and limitations of the geologic features are accurate representations of said



features as they exist on the ground, were placed on this map by the surveyor, the civil engineer or under their supervision, and are accurate to the best of their knowledge.

- Recommendations that are applicable to foundation design, earthwork, and site preparation that were prepared prior to or during the project's design phase, shall be incorporated in the project.
- Final seismic considerations for the site shall be submitted to and approved by the City of Oakland Building Services Division prior to commencement of the project.
- A peer review is required for the Geotechnical Report. Personnel reviewing the geologic report shall approve the report, reject it, or withhold approval pending the submission by the applicant or subdivider of further geologic and engineering studies to more adequately define active fault traces.

## 2. Impacts and Mitigation Measures

This section discusses potential impacts to soils, geology and seismicity that could result from implementation of the proposed project. The section begins with the significance thresholds, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate.

**a. Thresholds of Significance.** The project would have a significant impact on the environment if it would:

- (1) Expose people or structures to substantial risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map or Seismic Hazards Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (Refer to California Geological Survey 42 and 117 and PRC §2690 et. seq.);
  - Strong seismic ground shaking;
  - Seismic-related ground failure, including liquefaction, lateral spreading, subsidence, collapse; or
  - Landslides;
- (2) Result in substantial soil erosion or loss of topsoil, creating substantial risks to life, property, or creeks/waterways;
- (3) Be located on expansive soil, as defined in §1802.3.2 of the California Building Code (2007, as it may be revised), creating substantial risks to life or property;
- (4) Be located above a well, pit, swamp, mound, tank vault, or unmarked sewer line, creating substantial risks to life or property;
- (5) Be located above landfills for which there is no approved closure and post-closure plan, or unknown fill soils, creating substantial risks to life or property; or
- (6) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

**b. Project Impacts.** The following section describes the project's potential impacts related to geology, seismicity and soils. Development of Phase 1 would generally be concentrated at the northern end of the campus and Phase 2 would include development primarily in the southern portion of the main CHRCO campus and adjacent portions of the SR 24 right-of-way. Geologic conditions are similar to those in the Phase 1 development areas, with the exception of a greater thickness of fill within the Caltrans right-of-way decertification area and the presence of clayey sand layers from Temescal Creek paleochannels in the southern part of the CHRCO campus, which has a potentially higher risk for liquefaction.

Therefore, although impacts associated with Phases 1 and 2 are described separately below, impacts identified under Phases 1 and 2 would be similar and the analysis is primarily contained under the Phase 1 impact discussion.

**(1) Seismic Hazards.** Potential seismic hazards associated with the proposed project are described below.

**Phase 1 Impacts.** Development of Phase 1 would primarily result in development within the northern portion of the campus. The proposed project would not be expected to expose people or structures to substantial risk of loss, injury or death from on-site rupture of a known earthquake fault as delineated by the State Geologist, as the site is not located within an active or potentially active fault zone as defined by the A-PEFZA. The proposed project is not located on an unstable geologic unit, the development of which would be subject to, or contribute to, on- or off-site fault rupture or landslide, since there are no active faults crossing the site and the project site is relatively level. Similarly, due to the level topography, there is no potential for seismically-induced landslides.

All structures in the Bay Area could potentially be affected by ground shaking in the event of an earthquake along any of the regional active faults. The amount of ground shaking depends on the magnitude of the earthquake, the distance from the epicenter, and the type of earth materials in between. Violent to very violent (MMI IX-X) seismic ground shaking is could occur at the project site during expected earthquakes on the Hayward and other regional faults. This level of seismic shaking could cause extensive structural damage to buildings in the area. Most masonry and frame structures would likely be destroyed, window glass broken, underground pipes broken, and conspicuous cracks may appear in the ground, curbs and pavement.

Regional mapping by ABAG and the State of California indicates moderate susceptibility to liquefaction within the project site. The Phase I geotechnical report concludes that soil layers in the southern part of the project site, which are presumed to be related to Temescal Creek paleochannels, have a potential to liquefy and that special design considerations should be taken into account for structures overlying these soil layers.

The Alfred E. Alquist Hospital Seismic Safety Act, as amended by SB 1953 and other subsequent legislation, requires acute care hospital facilities to be constructed to strict safety standards. This act covers all hospital buildings, as defined in the California Health Code, Section 129725. OSHPD enforces these standards through its issuance of hospital facility building and occupancy permits. Construction of buildings within the project site not directly associated with patient care, such as the proposed Administrative Building, would not be subject to these requirements, but would be subject to standard City of Oakland conditions of approval.

Prior to the issuance of any site-specific grading or building permits for a project developed under Phase 1, a design-level geotechnical investigation must be prepared by a licensed professional and submitted to the City of Oakland Building Services Center for review and confirmation that the proposed development fully complies with the SCA GEO-3. The report must determine the project site's geotechnical conditions and address potential seismic hazards, such as seismic shaking and liquefaction. The report must identify building techniques appropriate to minimize seismic damage, such as performance standards for subgrade preparation and foundation design. In addition, the geotechnical investigation must conform to the California Division of Mines and Geology (CDMG) recommendations presented in the Guidelines for Evaluating Seismic Hazards in California, CDMG Special Publication 117. Final seismic considerations for the site must be submitted to and approved by the City of Oakland Building Services Division prior to commencement of the project. All design criteria and specifications identified in the geotechnical and soils reports must be followed during the design and construction of the proposed development.

Compliance with State laws and the City of Oakland Standard Conditions of Approval, as described above, would ensure that potential hazards associated with seismic activity would be less than significant.

**Phase 2 Impacts.** Similar to the discussion above for Phase 1, prior to the issuance of any site-specific grading or building permits for a project developed under Phase 2, a design-level geotechnical investigation must be prepared by a licensed professional and submitted to the City of Oakland Building Services Center for review and confirmation that the proposed development fully complies with the SCA GEO-3. Retaining walls constructed within the Caltrans right-of-way would be subject to Caltrans Seismic Design Criteria, the Caltrans Geotechnical Services Design Manual, and other Caltrans standard specifications.<sup>43</sup> In addition, compliance with State laws and the City of Oakland Standard Conditions of Approval, as described above, would ensure that potential hazards associated with seismic activity would be less than significant.

**(2) Soil Erosion Hazards.** Based on the topography of the project site, and the nature of proposed development, the potential for long-term erosion to create a geologic hazard is considered less-than-significant. Short-term, construction-related erosion issues are addressed in Section IV.I, Hydrology and Water Quality. The analysis concludes that compliance with SCA HYD-1, Erosion and Sedimentation Control Plan, and Grading Permit requirements would ensure less-than-significant erosion and siltation impacts.

**(3) Expansive Soils and Other Geologic and Soil Hazards.** Potential geologic and soil hazards associated with the proposed project are described below.

**Phase 1 Impacts.** The Phase I geotechnical report for the CHRCO campus identified four potential geologic hazards and/or geotechnical design issues within the project site: expansive surface soils, undocumented fill, shallow groundwater, and foundation support. Preliminary design guidelines were presented for site preparation, construction, and foundation design.

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<sup>43</sup> Fugro West, 2014, op. cit.

SCA GEO-3 requires a design-level geotechnical investigation for each structure constructed under the Master Plan, to be prepared by a licensed professional and approved by the City of Oakland Building Services Center, would include measures to minimize potential damages related to these identified geologic hazards. Engineering options may range from removal of the problematic soils and replacement, as needed, with properly conditioned and compacted fill, to design and construction of structures and pavement to withstand the forces exerted during the expected shrink-swell cycles and settlements. These conditions and recommended geotechnical precautionary measures would be incorporated into the design-level geotechnical investigation in accordance with the requirements of SCA GEO-2 and SCA GEO-3 requiring that the investigations determine final design parameters for the walls, foundations, foundation slabs, surrounding related improvements, and infrastructure (utilities, roadways, parking lots, and sidewalks). All design criteria and specifications set forth in the design-level geotechnical investigation would be followed to ensure that impacts associated with geologic hazards would be less than significant.

**Phase 2 Impacts.** Similar to the discussion above for Phase 1, implementation of Phase 2 would require compliance with SCA GEO-3, which requires a design-level geotechnical investigation for each structure constructed under the Master Plan to ensure that potential damages related to identified geologic hazards would be minimized. Compliance with SCA GEO-2 would also be required. All design criteria and specifications set forth in the design-level geotechnical investigation would be followed to ensure that impacts associated with geologic hazards would be less than significant.

**(4) Subterranean Features Contributing to Ground Failure.** The project site is currently entirely developed and is not located above a well, pit, swamp, mound, tank vault, or unmarked sewer line, so no impact related to those subterranean features would occur.

**(5) Landfill Impacts.** The project site is not located above a landfill, and fill soils at the site have been characterized in geotechnical investigations. Geotechnical investigations for the project indicate that no impacts related to landfills or fill soils would occur.

**(6) Septic Tanks or Alternative Wastewater Disposal Systems.** No septic tanks or alternative wastewater disposal systems are proposed. Therefore, there would be no impact associated with septic tanks or installation of alternative waste systems.

**c. Cumulative Impacts.** Potential cumulative geology and seismic impacts do not extend far beyond a project's boundaries, since such impacts are typically confined to specific locations and do not combine to create a cumulative impact. The exception to this would occur where a large geologic feature (e.g., fault zone, massive landslide) might affect an extensive area, or where the development effects from the project could affect the geologic stability of an off-site location. These circumstances are not present on the project site, and do not apply to the proposed project.

During the early part of the 1900s, nonprofit organizations developed model building codes used throughout the United States. Although these regional code developments were effective and responsive to regulatory needs, the time came for a single set of codes. The International Code Council (ICC) was established as a nonprofit organization dedicated to developing a single set of comprehensive and coordinated national model construction codes, now known as the International Building Code (IBC). Within California, additional State requirements were added to the IBC to form

the California Building Codes (CBC). Localities, such as the City of Oakland, may adopt additional amendments to the CBC through local ordinance. The trend in building codes has been increased rigor in the design and implementation requirements for geotechnical and seismic safety. These requirements, as specified by state and local regulation with the adoption of the CBC and amendments, have reduced risk to life, health, and safety, and minimized seismic risk. Present and future projects within the project's geographic area are subject to these enhanced requirements and result in reducing geologic and seismic hazards. As present and future projects replacing aging infrastructure and prior development resulting from past projects with new, more rigorously regulated designs, cumulative seismic risks are incrementally reduced for future projects.

The City of Oakland Standard Conditions of Approval, discussed above, including appropriate grading requirements, and compliance with the CBC would reduce cumulative geologic effects of the proposed Master Plan and surrounding areas. Therefore, implementation of the project would not make a considerable contribution to a significant cumulative geologic impact taking into account the impacts of past, present, and reasonably foreseeable development in the area.

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## I. HYDROLOGY AND WATER QUALITY

This section describes the project's hydrologic environment, including runoff, drainage, and water quality characteristics, based on a site reconnaissance, site-specific geotechnical investigations, and published and unpublished hydrologic information from state and local agencies. Impacts that could result from implementation and the proposed project, and mitigation measures to reduce significant impacts, are identified where appropriate.

### 1. Setting

The project site's existing conditions related to hydrology and water quality are described below.

**a. Climate.** The climate of the Oakland area is characterized as dry-summer subtropical (often referred to as Mediterranean), with cool wet winters and relatively warmer dry summers. The approximate annualized average high temperature is 67° Fahrenheit (F); the average low is 52° F.<sup>1</sup> The mean annual rainfall in the vicinity of the project area, for the period between 1970 and 2012, was approximately 23 inches, the majority of which occurs from November through April.<sup>2</sup> During the period of record, annual rainfall has varied from 10 inches (1976) to 41 inches (1998), with a one-day high of 4.7 inches of precipitation on January 4, 1982.<sup>3</sup> Analysis of long-term precipitation records indicates that wetter and drier cycles lasting several years are common in the region. Severe, damaging rainstorms occur at a frequency of about once every 3 years.<sup>4</sup>

**b. Runoff and Drainage.** In general, the topography of the project site is relatively flat, with a gentle slope increasing from an elevation of about 94 feet NAVD at the northwest corner of the project site to approximately 105 feet NAVD at the northeast corner.<sup>5,6</sup> The SR 24 ramp abutment to the east slopes to a maximum elevation of approximately 130 feet NAVD.<sup>7</sup>

Temescal Creek has been channelized within an underground culvert near the southernmost tip of the project site. The creek remains in an underground culvert as it runs west, and does not daylight until it enters a concrete engineered channel at Horton Street before discharging into San Francisco Bay.<sup>8,9</sup>

<sup>1</sup> Western Regional Climate Center, 2013a. *Period of Record General Climate Summary - Temperature, Oakland Museum, CA*. Website: [www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6336](http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6336) (accessed October 1, 2013).

<sup>2</sup> Western Regional Climate Center, 2013b. *Period of Record General Climate Summary - Precipitation, Oakland Museum, CA*. Website: [www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6336](http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6336) (accessed October 1, 2013).

<sup>3</sup> Ibid.

<sup>4</sup> Brown III, William M., 1988. *Historical Setting of the Storm: Perspectives on Population, Development, and Damaging Rainstorms in the San Francisco Bay Region*, in Landslides, Floods, and Marine Effects of the Storm of January 3-5, 1982, in the San Francisco Bay Region, California, Stephen D. Ellen and Gerald F. Wiczorek, Eds., U.S. Geological Survey Professional Paper 1434.

<sup>5</sup> The North American Vertical Datum of 1988 (NAVD) is, for most practical purposes, equivalent to mean sea level; however, sea level can vary. NAVD is a fixed datum that can be easily converted to other standards; for instance, the City of Oakland Vertical Datum is equal to NAVD minus 5.7 feet.

<sup>6</sup> Fugro West, Inc., 2008a. *Geotechnical Study, Geologic and Seismic Hazards Evaluation, New Hospital Replacement Project, Children's Hospital and Research Center, Oakland, California*. Project No. 1595.002. May 14.

<sup>7</sup> Ibid.

<sup>8</sup> Sowers, J. M., and C. M. Richard, 2009. *Creek and Watershed Map of Oakland and Berkeley* (Fourth Edition), Oakland Museum of California, 1:25,800 scale. Website: [museumca.org/creeks/MapOak.html](http://museumca.org/creeks/MapOak.html).

The City of Oakland's storm drainage system consists of more than 300 miles of storm drainpipes and 15,000 structures (mostly inlets, manholes, and catch basins). The storm drain system is a network of disjointed private and public drainage ways. City-owned drainage systems are improved drainage facilities located within easements and rights-of-way.<sup>10</sup> Runoff on the impervious portions of the site is directed by sheetflow primarily towards curbside storm drains.

**c. Flooding.** Based on the Federal Emergency Management Agency (FEMA) revised Flood Insurance Rate Maps (FIRMs) for the vicinity of the project site, the site is not located within a 100-year or 500-year flood zone.<sup>11</sup>

Based on regional hazard mapping, the project site could be subject to inundation in the event of a catastrophic failure of the Lake Temescal Dam, located approximately 1.9 miles east-northeast of the site.<sup>12</sup> Lake Temescal Dam, which is owned by the East Bay Regional Park District, is an earthen dam with a storage capacity of 200 acre-feet.<sup>13</sup> The dam is located on the main trace of the Hayward fault, causing dam failure due to a seismic event to be a concern.<sup>14</sup> However, the dam is under the regulatory jurisdiction of the California Department of Water Resources, Division of Safety of Dams (DOSD), and the DOSD conducts annual inspections and requires corrective actions to be performed if a dam is found to be unsafe or developing problems.<sup>15,16</sup> Also, the DOSD periodically reviews the safety of a dam relative to new information regarding earthquake hazards.<sup>17</sup> These regulatory requirements substantially mitigate the risk of dam failure.

**d. Coastal Hazards.** Due to the location and elevation of the project site, approximately 2 miles from San Francisco Bay at an elevation of approximately 100 feet NAVD, the proposed project would not be subject to coastal hazards, including sea level rise, seiche, tsunami, or extreme high tide.

**e. Groundwater.** The project site is within the East Bay Plain groundwater sub-basin, which extends from Richmond to Hayward.<sup>18</sup> The sub-basin is composed primarily of alluvial deposits

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<sup>9</sup> Alameda County Clean Water Program, 2011. *Resources for Development: Hydromodification Excerpts of MRP*. Website: [cleanwaterprogram.org/resources/resources-development.html](http://cleanwaterprogram.org/resources/resources-development.html) (accessed October 2, 2012). November 28.

<sup>10</sup> Oakland, City of, 2004. *Public Works Agency Standards, Storm Drainage Design Guidelines*. November.

<sup>11</sup> Federal Emergency Management Agency, 2009. Flood Insurance Rate Map (FIRM), Alameda County, California, Community Panel Number 065048 0059 G. Website: [www.msc.fema.gov](http://www.msc.fema.gov) (accessed April 3, 2014). October 16.

<sup>12</sup> Association of Bay Area Governments, 1995. Dam Failure Inundation Hazard Map for North Oakland/Piedmont/Emeryville. Website: [www.abag.ca.gov](http://www.abag.ca.gov) (accessed April 3, 2014).

<sup>13</sup> Division of Safety of Dams, 2012a. *Dams within the Jurisdiction of the State of California*. Website: [www.water.ca.gov/damsafety/docs/Jurisdictional2010.pdf](http://www.water.ca.gov/damsafety/docs/Jurisdictional2010.pdf) (accessed April 3, 2014).

<sup>14</sup> Oakland, City of, 2004. *General Plan, Safety Element*. Amended 2012.

<sup>15</sup> Ibid.

<sup>16</sup> Division of Safety of Dams, 2012b. *Frequently Asked Questions*. Website: [www.water.ca.gov/damsafety/index.cfm](http://www.water.ca.gov/damsafety/index.cfm) (accessed April 3, 2014).

<sup>17</sup> Ibid.

<sup>18</sup> California Department of Water Resources, 2004. *California's Groundwater: Santa Clara Valley Groundwater Basin, East Bay Plain Subbasin, Bulletin 118*. February 27.



formed by tributaries to San Francisco Bay. The water-bearing formations in this sub-basin comprise three groups: the Santa Clara Formation of the Early Pleistocene age that consists of alluvial fan and flood plain deposits, the Alameda Formation of the Late Pleistocene age that consists of alluvial fan deposits bounded on the top and bottom by mud deposits, and the Temescal Formation of the Early Holocene age that consists of alluvial deposits. The cumulative thickness of these formations is approximately 1,000 feet. Geotechnical investigations prepared for the project site note that groundwater was encountered at a variable depths ranging from 7.5 to 20 feet below ground surface (bgs) in the borings conducted as part of the field exploration, and noted a historical high of 6 feet bgs measured in 1986.<sup>19, 20</sup> Groundwater depths would be expected to vary due to seasonal precipitation patterns and localized infiltration rates.

**f. Water Quality.** The quality of surface water and groundwater in the vicinity of the project site is affected by past and current land uses at the site and the quality of San Francisco Bay in areas where groundwater is affected by tides. Water quality within the watershed is also affected by the composition of local geologic materials. Water quality in surface and groundwater bodies is regulated by the State Water Resources Control Board and Regional Water Quality Control Boards. The project site is under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (Water Board), which is responsible for implementation of state and federal water quality protection statutes, regulations, and policies in the vicinity of the project site. The Water Board implements the Water Quality Control Plan (Basin Plan),<sup>21</sup> a master policy document for managing water quality in the region. The Basin Plan establishes beneficial water uses for waterways and water bodies within the region.

**(1) Groundwater Quality.** The East Bay Plain groundwater sub-basin underlies the project site and is listed in the Basin Plan as providing the beneficial uses of municipal and domestic water supply, industrial process water supply, industrial service water supply, and agricultural water supply.<sup>22</sup>

There are over 1,000 leaking underground fuel tank sites located within the East Bay Plain sub-basin and over 100 sites with other forms of groundwater contamination.<sup>23</sup> The potential for the presence of contamination in the groundwater underlying the project site associated with hazardous materials releases is discussed in Section IV.J, Hazards and Hazardous Materials.

**(2) Storm Water Quality.** Stormwater runoff from the project site drains to the channelized Temescal Creek, which ultimately empties into central San Francisco Bay, which is listed as providing the beneficial uses of industrial process and service supply, commercial and sports fishing,

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<sup>19</sup> Fugro West, Inc., 2008a, op. cit.

<sup>20</sup> Fugro West, Inc., 2008b. *Phase-I Geotechnical and Geohazard Evaluation, Central Utility Plan, Children's Hospital and Research Center, Oakland, California*. Project No. 1595.002. October 22.

<sup>21</sup> San Francisco Bay Regional Water Quality Control Board, 1995. *Water Quality Control Plan*. Website: [www.waterboards.ca.gov/sanfranciscobay/basin\\_planning.shtml](http://www.waterboards.ca.gov/sanfranciscobay/basin_planning.shtml) (accessed April 3, 2014). Appended through 2011.

<sup>22</sup> California Regional Water Quality Control Board, 1999. *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report – Alameda and Contra Costa Counties, CA*. June. Website: [www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/groundwater/eastbayplain.shtml](http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/groundwater/eastbayplain.shtml) (accessed April 3, 2014).

<sup>23</sup> Ibid.

shellfish harvesting, estuarine and wildlife habitat, preservation of rare and endangered species, fish migration and spawning, noncontact and contact water recreation, and navigation. Central San Francisco Bay has been designated as an impaired water body under Section 303(d) of the Clean Water Act (CWA).<sup>24</sup> The pollutant stressors identified include pesticides, dioxin compounds, furan compounds, mercury, selenium, polychlorinated biphenyls (PCBs), and exotic species. Total daily maximum loads (TDMLs) have been established for mercury and are being developed for other contaminants. TDMLs describe the maximum amount of a pollutant that a water body can receive while still meeting water quality standards. Once a TDML has been developed, they are implemented by allocating wasteloads via National Pollutant Discharge Elimination System (NPDES) permits.

There is limited water quality data available for Temescal Creek, which is not listed as an impaired water body under the CWA. The local group Friends of Temescal Creek performed water quality sampling from 2004 to 2007 on the lower reach of the creek (the portion of the creek flowing west from Temescal Lake, joined by several tributaries).<sup>25</sup> All sampling locations were located upstream of the project site. The results indicate elevated chlorine concentrations, elevated E. coli levels at some sections of the creek, most likely due to leaking sewage pipes, and periodically elevated levels of nitrate-nitrogen. All other parameters measured (temperature, pH, conductivity; ammonia-nitrogen, phosphate, alkalinity, turbidity) were noted to be within typical levels for streams.

**g. Regulatory Setting.** The following describes the regulatory setting as it relates to hydrology and water quality.

**(1) Federal Framework.** The CWA is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. In general, the CWA prohibits discharges to surface waters unless specifically authorized by a permit. Under Section 401 of the CWA, every applicant for a federal permit or license for any activity which may result in a discharge to a water body must obtain State Water Quality Certifications that the proposed activity will comply with state water quality standards. These Certifications are often issued in connection with U.S. Army Corps of Engineers CWA section 404 permits required for dredging and filling water bodies. Section 402 of the CWA, addressing stormwater discharges, is addressed in more detail below.

**(2) State and Regional Framework.** The Porter-Cologne Water Quality Control Act established the State Water Resources Control Board (SWRCB) and divided the state into nine regional basins, each with a Regional Water Quality Control Board. The SWRCB is the primary state agency responsible for protecting the quality of the state's surface and groundwater supplies, while the regional boards are responsible for developing and enforcing water quality objectives and implementation plans. The proposed project lies within the jurisdiction of the Water Board, which has adopted the Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) to implement plans, policies, and provisions for water quality management. Beneficial uses of surface waters within the San Francisco Bay Region are described in the Basin Plan and are designated for major surface waters and their tributaries. The Water Board adopted its Basin Plan in 1995 and most recently amended it in December

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<sup>24</sup> Ibid.

<sup>25</sup> Friends of Temescal Creek, 2008. *Friends of Temescal Creek, Water Quality Monitoring Summary Report 2004-07*. Website: [www.temescalcreek.org/index.html](http://www.temescalcreek.org/index.html) (accessed April 3, 2014).

2011. The Water Board is also responsible for administration and enforcement of NPDES permits, including the stormwater permits described below.

**Municipal Regional Permit.** Pursuant to Section 402 of the CWA and the Porter-Cologne Water Quality Control Act, municipal stormwater discharges in the City of Oakland (the City is part of the Alameda County Clean Water Program) are regulated under the San Francisco Bay Region Municipal Regional Storm Water NPDES Permit, Order No. R2-2009-0074, NPDES Permit No. CAS612008, adopted October 14, 2009 (MRP). The MRP is overseen by the Water Board. MRP Provision C.3 addresses post-construction stormwater management requirements for new development and redevelopment projects that add and/or replace 10,000 square feet or more of impervious area. Provision C.3 requires public agencies to require incorporation of site design, source control and stormwater treatment measures into development projects, to minimize the discharge of pollutants in stormwater runoff and non-stormwater discharges, and to prevent increases in runoff flows. The MRP requires that Low Impact Development (LID) methods be the primary mechanism for implementing such controls.

MRP Provision C.3.g pertains to hydromodification management. Hydromodification is defined as the alteration of the hydrologic characteristics of coastal and non-coastal waters, which in turn could cause degradation of water resources. The MRP requires that stormwater discharges shall not cause an increase in the erosion potential of the receiving stream over the existing condition. Increases in runoff flow and volume shall be managed so that the post-project runoff does not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force. The project is not located in an area of hydromodification susceptibility, and hydromodification management plan requirements would not apply to the project site because all runoff from the area will flow through fully hardened channels (i.e., with beds and banks that are continuously concrete-lined).<sup>26, 27</sup>

**Construction General Permit.** Projects disturbing more than 1 acre of land during construction are to comply with the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ, NPDES No. CAS000002 (Construction General Permit).

To obtain coverage under the Construction General Permit, the project applicant must provide via electronic submittal, a Notice of Intent, a Storm Water Pollution Prevention Plan (SWPPP), and other documents required by Attachment B of the Construction General Permit. Activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as grubbing or excavation. The permit also covers linear underground and overhead projects such as pipeline installations. Construction General Permit activities are regulated at a local level by the Water Board.

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<sup>26</sup> Alameda County Clean Water Program, 2011, op. cit.

<sup>27</sup> Alameda County Clean Water Program, 2009. *HMP Susceptibility Map*. September. Website: [cleanwaterprogram.org/uploads/r2-2009-0074\\_alamedahmmmaponly.pdf](http://cleanwaterprogram.org/uploads/r2-2009-0074_alamedahmmmaponly.pdf) (accessed October 2, 2012).

The Construction General Permit uses a risk-based permitting approach and mandates certain requirements based on the project risk level (i.e., Level 1, Level 2, or Level 3). The project risk level is based on the risk of sediment discharge and the receiving water risk. The sediment discharge risk depends on the project location and timing (i.e., wet season versus dry season activities). The receiving water risk depends on whether the project would discharge to a sediment-sensitive receiving water. The determination of the project as risk level would be made by the project applicant when the Notice of Intent is filed.

The performance standard in the Construction General Permit is that dischargers shall minimize or prevent pollutants in stormwater discharges and authorized non-stormwater discharges through the use of controls, structures, and management practices that achieve Best Available Technology (BAT) for treatment of toxic and non-conventional pollutants and Best Conventional Technology (BCT) for treatment of conventional pollutants. A SWPPP must be prepared by a Qualified SWPPP Developer that meets the certification requirements in the Construction General Permit. The purpose of the SWPPP is to (1) to help identify the sources of sediment and other pollutants that could affect the quality of stormwater discharges; and (2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity. Operation of BMPs must be overseen by a Qualified SWPPP Practitioner that meets the requirements outlined in the permit.

The SWPPP must also include a construction site monitoring program. The monitoring program includes, depending on the project risk level, visual observations of site discharges, water quality monitoring of site discharges (pH, turbidity, and non-visible pollutants, if applicable), and receiving water monitoring (pH, turbidity, suspended sediment concentration, and bioassessment).

**(3) Oakland General Plan Objectives and Policies.** The following and policies pertaining to hydrology and water quality are from the Oakland General Plan Safety Element:

- Policy FL-1: Enforce and update local ordinances, and comply with regional orders, that would reduce the risk of storm-induced flooding.
  - Action FL-1.3: Comply with all applicable performance standards pursuant to the 2003 Alameda countywide National Pollutant Discharge Elimination System municipal stormwater permit that seek to manage increases in stormwater runoff flows from new-development and redevelopment construction projects.
- Policy FL-2: Continue or strengthen city programs that seek to minimize the storm-induced flooding hazard.
  - Action FL-2.3: Continue the “Maintain-a-Drain Campaign,” which encourages residents and businesses to keep storm drains in their neighborhood free of debris.
- Policy FL-3: Seek the cooperation and assistance of other government agencies in managing the risk of storm-induced flooding.
- Policy FL-4: Minimize further the relatively low risks from non-storm-related forms of flooding.

The Open Space, Conservation, and Recreation (OSCAR) Element includes the following objective and policies related to hydrology:

- Policy CO5-2: Improvements to Groundwater Quality. Support efforts to improve groundwater quality, including the use of non-toxic herbicides and fertilizers, the enforcement of anti-litter laws,

the clean-up of sites contaminated by toxics, and on-going monitoring by the Alameda County Flood Control and Water Conservation District.

- Policy CO-5.3: Control of Urban Runoff. Employ a broad range of strategies, compatible with the Alameda Countywide Clean Water Program, to: (a) reduce water pollution associated with storm runoff; (b) reduce water pollution associated with hazardous spills, runoff from hazardous materials areas, improper disposal of household hazardous materials, illicit dumping, and marina “live-aboards;” and (c) improve water quality in Lake Merritt to enhance the lakes aesthetic, recreational and ecological functions.

**(4) City of Oakland Public Works Agency, Environmental Sciences Division.** The City of Oakland Environmental Services Division offers the following recommendations<sup>28</sup> to manage site stormwater. These recommendations are specifically designed to enhance and ensure the protection of water quality by reducing or eliminating the sources that contribute to the degradation of water quality. In addition, methods for treating and managing runoff that prevent erosion, minimize transport of sediment, and encourage onsite infiltration are included. The City of Oakland encourages the use of these recommendations as plan elements within a proposed project to fulfill requirements as mandated by the MRP NPDES permit and City of Oakland Conditions of Approval requirements (described more fully below).

- Pre-design the project with specific programming criteria and standards that must be met in the management of stormwater.
- Use design elements and site utilization that will minimize alterations and ecological impacts to the watersheds and/or water features.
- Designers should refer to the Bay Area Stormwater Management Agencies Association’s Start at the Source, a design guidance manual for stormwater quality protection. It is recommended to use biologically based stormwater management features such as swales; sediment control ponds, pools, and wetlands along drainage courses; and infiltration basins to retain and treat stormwater on-site.
- Minimize hardscapes and use permeable surface materials to retain stormwater on-site.
- Design pavements and locate them in such a manner as to reduce stormwater velocity across pavements and to facilitate water infiltration into the soil.
- Capture rainwater from impervious areas of the building for groundwater recharge or reuse in the building.
- Design drainage to keep water away from the building.
- Design roof drainage to direct water to dry-wells, cisterns, or into landscape infiltration/detention areas.
- While preparing the Stormwater Pollution Prevention Plan for the project, identify appropriate stormwater pollution prevention measures and BMPs to reduce pollutants in stormwater discharges from the site both during construction and after construction is completed.

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<sup>28</sup> Oakland, City of, 2008. Public Works Agency. *Strategy 1.5: Manage Site Water*, Environmental Services Division. Website: [www.oaklandpw.com/Page368.aspx](http://www.oaklandpw.com/Page368.aspx) (accessed on April 3, 2014).

- Specify systems that retain and treat stormwater on the site. For erosion and sediment control BMPs and their design, refer to the California Stormwater Best Management Practice Handbook for Construction Activity.
- Prevent soil erosion before, during, and after construction by controlling stormwater runoff and wind erosion. Consider silt fencing, sediment traps, construction phasing, stabilization of slopes, and maintaining and enhancing vegetation and groundcover.
- Do not grade in the winter.
- Protect hillsides using adequate erosion control measures such as hydro seeding, erosion control blankets, and/or sedimentation ponds to collect runoff.
- Monitor all erosion control measures before, during, and after a storm.
- Educate the occupants, and train the operations and maintenance staff on the stormwater management strategies and systems.
- Provide an operating manual for stormwater management.

**(5) Oakland Municipal and Planning Codes.** Applicable chapters and amendments of the City of Oakland Municipal and Planning codes regarding hydrology and water quality include the following:

- Chapter 13.16.010, City of Oakland Creek Protection Storm Water Management and Discharge Control Ordinance. The Oakland Municipal Code prohibits activities that will result in the discharge of pollutants to Oakland's waterways (including the stormwater system) or the damaging of creeks, creek functions, or habitat. The ordinance requires the use of standard Best Management Practices to prevent pollution or erosion to creeks and/or storm drains. Additionally, a creek protection permit is required for any construction work on creek side properties.
- Chapter 13.16.020, Purpose and intent. The purpose of this chapter is to ensure the future health, safety, and general welfare of city citizens by:
  - Eliminating non-storm-water discharges to the municipal separate storm sewer;
  - Controlling the discharge to municipal separate storm sewers from spills, dumping or disposal of materials other than stormwater;
  - Reducing pollutants in stormwater discharges to the maximum extent practicable;
  - Safeguarding and preserving creeks and riparian corridors in a natural state;
  - Preserving and enhancing creekside vegetation and wildlife;
  - Preventing activities that would contribute significantly to flooding, erosion or sedimentation, or that would destroy riparian areas or would inhibit their restoration;
  - Enhancing recreational and beneficial uses of creeks;
  - Controlling erosion and sedimentation;
  - Protecting drainage facilities; and
  - Protecting the public health and safety, and public and private property.
  - The intent of this chapter is to protect and enhance the water quality of our watercourses, water bodies, and wetlands in a manner pursuant to and consistent with the federal Clean Water Act. (Ord. 12024 § 1 (part), 1997)

- Chapter 15.04, Oakland Amendments to the California Building, Electrical, Mechanical, and Plumbing Codes. Article I. General Administrative Amendments. 15.04.005 – Title. This chapter of the Oakland Municipal Code shall be known as the "Oakland Amendments of the Current Editions of the California Building Standards Codes, Part 2 (Building), Part 3 (Electrical), Part 4 (Mechanical), and Part 5 (Plumbing)", may be cited as such, and will be referred to herein as "this chapter," "this Code," or the "Oakland Building Construction Code."

These amendments expand on or supersede the requirements of the California Building Standards Code and will be applicable to the proposed project. Buildings and structures regulated by this Code shall be so arranged, assembled, installed, maintained and of sufficient size and so protected as to reduce and minimize all egress, fire, safety, and health hazards. Amendments to the City of Oakland Municipal and Planning Codes extend or supersede existing codes to further ensure the future health, safety, and general welfare of the public. The applicable amendments that pertain to this project include, but are not limited to:

15.04.660: Adds the following new CBC Chapter 18B for requirements for Grading, Excavations, and Fills:

#### **Section 1802B.1 Permit—When Required.**

No person shall do or cause any grading in private or public property without first having obtained a permit to do so from the City Engineer whenever such grading will result in any of the following:

1. The volume of excavation or fill will exceed fifty (50) cubic yards provided either:
  - a. the existing or the resulting rate of slope will exceed 20 percent; or
  - b. the vertical distance between the top and bottom of excavation or fill will exceed five feet at any location.

#### **Section 1802B.3 Permit—Items to Include in Application.**

The application for a Grading Permit must include all of the following items in triplicate:

1. Application Form;
2. Vicinity Map, Site Map and Grading Plan;
3. Erosion and Sedimentation Control Plan, where required by the City Engineer;
4. Statement(s) of the Civil Engineer(s) in Responsible Charge;
5. Soils Report;
6. A landscape addendum to the erosion and sediment control plans by a licensed landscape architect when required by the Director of City Planning;
7. Proposed work schedule;
8. Deposit for review of the application in accordance with the current master fee schedule;
9. Itemized estimate of cost of work by a Civil Engineer;
10. Such other items as may be required by the City Engineer his duly authorized representative to aid in the understanding and review of the proposed grading work; and
11. Proposed Dust Control Measures.

**(6) City of Oakland's Standard Conditions of Approval.** The City's Standard Conditions of Approval relevant to this impact topic are listed below for reference. The conditions of approval will be adopted as requirements of the proposed project if the project is approved by the City. See

also SCA GEO-1, which addresses erosion and sedimentation during grading and construction activities, in Section IV.H., Geology, Seismicity, and Soils.

**SCA HYD-1: Stormwater Pollution Prevention Plan (SWPPP).** *Prior to and ongoing throughout demolition, grading, and/or construction activities.*

The project applicant must obtain coverage under the General Construction Activity Storm Water Permit issued by the SWRCB. The project applicant must file a notice of intent (NOI) with the SWRCB. The project applicant will be required to prepare a stormwater pollution prevention plan (SWPPP) and submit the plan for review and approval by the Planning and Zoning Division and the Building Services Division. At a minimum, the SWPPP shall include: a description of construction materials, practices, and equipment storage and maintenance; a list of pollutants likely to contact stormwater; site-specific erosion and sedimentation control practices; a list of provisions to eliminate or reduce discharge of materials to stormwater; Best Management Practices (BMPs), and an inspection and monitoring program. Prior to the issuance of any construction-related permits, the project applicant shall submit a copy of the SWPPP and evidence of approval of the SWPPP by the SWRCB to the Building Services Division. Implementation of the SWPPP shall start with the commencement of construction and continue through the completion of the project. After construction is completed, the project applicant shall submit a notice of termination to the SWRCB.

**SCA HYD-2: Post-Construction Stormwater Pollution Management Plan.** *Prior to issuance of building permit (or other construction-related permit).*

The applicant shall comply with the requirements of Provision C.3 of the National Pollutant Discharge Elimination System (NPDES) permit issued to the Alameda Countywide Clean Water Program. The applicant shall submit with the application for a building permit (or other construction-related permit) a completed Construction-Permit-Phase Stormwater Supplemental Form to the Building Services Division. The project drawings submitted for the building permit (or other construction-related permit) shall contain a stormwater management plan, for review and approval by the City, to manage stormwater run-off and to limit the discharge of pollutants in stormwater after construction of the project to the maximum extent practicable.

- The post-construction stormwater management plan shall include and identify the following:
  - All proposed impervious surface on the site;
  - Anticipated directional flows of on-site stormwater runoff; and
  - Site design measures to reduce the amount of impervious surface area and directly connected impervious surfaces; and
  - Source control measures to limit the potential for stormwater pollution; and
  - Stormwater treatment measures to remove pollutants from stormwater runoff.
- The following additional information shall be submitted with the post-construction stormwater pollution management plan:
  - Detailed hydraulic sizing calculations for each stormwater treatment measure proposed; and
  - Pollutant removal information demonstrating that any proposed manufactured/mechanical (i.e., non-landscape-based) stormwater treatment measure, when not used in combination with a landscape-based treatment measure, is capable of removing the range of pollutants typically removed by landscape-based treatment measures.

All proposed stormwater treatment measures shall incorporate appropriate planting materials for stormwater treatment (for landscape-based treatment measures) and shall be designed with considerations for vector/mosquito control. Proposed planting materials for all proposed landscape-based stormwater treatment measures shall be included on the landscape and irrigation plan for the project. The applicant is



not required to include on-site stormwater treatment measures in the post-construction stormwater pollution management plan if he or she secures approval from Planning and Zoning of a proposal that demonstrates compliance with the requirements of the City's Alternative Compliance Program.<sup>29</sup>

Prior to final permit inspection, the applicant shall implement the approved stormwater pollution management plan.

**SCA HYD-3: Maintenance Agreement for Stormwater Treatment Measures.** *Prior to final zoning inspection.*

For projects incorporating stormwater treatment measures, the applicant shall enter into the "Standard City of Oakland Stormwater Treatment Measures Maintenance Agreement," in accordance with Provision C.3.e of the NPDES permit, which provides, in part, for the following:

- The applicant accepting responsibility for the adequate installation/construction, operation, maintenance, inspection, and reporting of any on-site stormwater treatment measures being incorporated into the project until the responsibility is legally transferred to another entity; and
- Legal access to the on-site stormwater treatment measures for representatives of the City, the local vector control district, and staff of the Regional Water Quality Control Board, San Francisco Region, for the purpose of verifying the implementation, operation, and maintenance of the on-site stormwater treatment measures and to take corrective action if necessary. The agreement shall be recorded at the County Recorder's Office at the applicant's expense.

**SCA HYD-4: Stormwater and Sewer.** *Prior to completing the final design for the project's sewer service.*

Confirmation of the capacity of the City's surrounding stormwater and sanitary sewer system and state of repair shall be completed by a qualified civil engineer with funding from the project applicant. The project applicant shall be responsible for the necessary stormwater and sanitary sewer infrastructure improvements to accommodate the proposed project. In addition, the applicant shall be required to pay additional fees to improve sanitary sewer infrastructure if required by the Sewer and Stormwater Division. Improvements to the existing sanitary sewer collection system shall specifically include, but are not limited to, mechanisms to control or minimize increases in infiltration/inflow to offset sanitary sewer increases associated with the proposed project. To the maximum extent practicable, the applicant will be required to implement Best Management Practices to reduce the peak stormwater runoff from the project site. Additionally, the project applicant shall be responsible for payment of the required installation or hook-up fees to the affected service providers.

## **2. Impacts and Mitigation Measures**

This section discusses potential impacts to hydrology and water quality that could result from implementation of the proposed project. The section begins with the significance thresholds, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate.

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<sup>29</sup> Alternative Compliance Programs: Under the terms of the Municipal Stormwater permit granted by the Water Board, participating agencies may establish a program under which a project proponent may request alternative stormwater compliance. A proponent must show the impracticability of on-site treatment and commit to treating off-site an equivalent surface area, pollutant load or quantity of stormwater runoff; or, provide other equivalent water quality benefit, such as stream restoration or other activities that limit or mitigate impacts.

**a. Thresholds of Significance.** The project would have a significant impact on the environment if it would:

- (1) Violate any water quality standards or waste discharge requirements;
- (2) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or proposed uses for which permits have been granted);
- (3) Result in substantial erosion or siltation on- or off-site that would affect the quality of receiving waters;
- (4) Result in substantial flooding on- or off-site;
- (5) Create or contribute substantial runoff which would exceed the capacity of existing or planned stormwater drainage systems;
- (6) Create or contribute substantial runoff which would be an additional source of polluted runoff;
- (7) Otherwise substantially degrade water quality;
- (8) Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, that would impede or redirect flood flows;
- (9) Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- (10) Expose people or structures to a substantial risk of loss, injury or death involving flooding;
- (11) Expose people or structures to a substantial risk of loss, injury or death as a result of inundation by seiche, tsunami, or mudflow;
- (12) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course, or increasing the rate or amount of flow, of a Creek, river or stream in a manner that would result in substantial erosion, siltation, or flooding, both on- or off-site; or
- (13) Fundamentally conflict with elements of the City of Oakland Creek Protection (OMC Chapter 13.16) ordinance intended to protect hydrologic resources. Although there are no specific, numeric/quantitative criteria to assess impacts, factors to be considered in determining significance include whether there is substantial degradation of water quality through (a) discharging a substantial amount of pollutants into a creek; (b) significantly modifying the natural flow of the water or capacity; (c) depositing substantial amounts of new material into a creek or causing substantial bank erosion or instability; or (d) substantially endangering public or private property or threatening public health or safety.

**b. Project Impacts.** The following is a discussion of the potential hydrology and water quality impacts associated with construction and operation of the proposed project. The hydrologic setting of proposed development areas is similar for both phases of the Master Plan. Compared to Phase 1, development of Phase 2 would include development in additional parts of the project site, primarily in

the southern portion of the main CHRCO campus and adjacent portions of the SR 24 right-of-way. Although impacts associated with Phase 1 and 2 are described separately below, impacts identified under Phases 1 and 2 would be similar and the analysis is primarily contained under the Phase 1 impact discussion. Where there would be no impact associated with the project, only a brief discussion is provided and the phases of development are not discussed separately.

**(1) Water Quality Standards.** Construction and operation of the project could result in impacts to water quality.

**Phase 1 Impacts.** Construction- and operation-period impacts to water quality that could result with implementation of Phase 1 are described below.

*Construction Period Water Quality.* Construction activities would include excavation, soil stockpiling and grading, which could result in temporary erosion and movement of sediments into the storm drainage system, particularly during precipitation events. Construction-related soil erosion could result in increased sediment entrained in stormwater runoff which could accumulate in the channelized Temescal Creek, potentially interfering with storm drainage and potentially increasing sediment discharge to San Francisco Bay.

The potential for chemical releases is present at most construction sites due to the use of paints, solvents, fuels, lubricants, and other hazardous materials associated with heavy construction equipment. Once released, these hazardous materials could be transported to nearby surface waterways in stormwater runoff, wash water, and dust control water, potentially reducing the quality of the receiving waters.

Construction-related impacts to water quality would be addressed through existing regulatory requirements. Compliance with SCA GEO-1 and Municipal Code Chapter 15.04 requires grading permits and the implementation of an erosion and sedimentation control plan for construction projects. Compliance with SCA HYD-1 and the Construction General Permit requires implementation of a SWPPP including BMPs to eliminate significant sediment and pollutant discharges to stormwater. Compliance with these requirements would ensure that any potential construction-phase water quality impacts are less than significant.

*Operation Period Water Quality – Stormwater Runoff.* Development under the Master Plan would result in new buildings which could increase the area of impervious surfaces at the project site. This would change drainage patterns in the project site and would have the potential to increase the volume of stormwater runoff. The Phase 1 project area currently contains approximately 29,040 square feet of impervious surfaces, which would increase to approximately 37,400 square feet as a result of Phase 1, an increase of approximately 8,360 square feet of impervious surface.<sup>30</sup>

Improvements would include landscaping and parking areas, which could introduce new sources of urban pollutants to the project site. These urban pollutants, from landscaping chemicals and vehicles,

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<sup>30</sup> Fyffe, Jeff, 2014. CLEO Construction Management. Personal communication with Theresa Wallace of LSA Associates, Inc. March 28.

could be entrained in stormwater runoff and be discharged to San Francisco Bay, listed as an impaired water body under the CWA.

Compliance with the stormwater requirements of the MRP and standard City conditions of approval would serve to ensure that these potential operational-phase stormwater impacts are less than significant. SCA HYD-2 requires compliance with the MRP and the preparation of a stormwater management plan to limit stormwater discharges and pollutants related to new development. SCA HYD-3 requires a maintenance agreement to ensure that the measures of the stormwater management plan are maintained throughout the life of the new development. SCA HYD-4 requires BMPs to reduce peak stormwater runoff and requires a project applicant to fund repairs and improvements to the existing storm and sanitary sewer system in the event that capacity may be exceeded. Compliance with these requirements would ensure that any potential operational-phase stormwater water quality impacts are less than significant.

*Operation Period Water Quality Stormwater System Maintenance.* Compliance with SCA HYD-4 would require annual inspections of bio-swales, sedimentation basins, drainage ditches, mechanical treatment systems, if any, and drainage inlets in compliance with the City's Stormwater Treatment Measures Maintenance Agreement. An annual report, documenting the inspection and any removal action must be submitted to the City's Department of Public Works for review. This would ensure that any potential water quality impacts related to improper maintenance of the stormwater system would be less than significant.

**Phase 2 Impacts.** The Phase 2 project area currently has approximately 325,400 square feet of impervious surfaces, which would increase by about 4,600 square feet as a result of Phase 2, for a total of 330,000 square feet of impervious surfaces.<sup>31</sup> Similar to the discussion above for Phase 1, implementation of Phase 2, which would cover a larger area, would also require the implementation of construction- and operation-period Standard Conditions of Approval to ensure that impacts to water quality would be less than significant. Specifically, SCAs GEO-1 and HYD-1 would be required during project construction. During the operation period, implementation of SCAs HYD-2, HYD-3, and HYD-4 would be required. Implementation of these Standard Conditions of Approval under Phase 2 would ensure that potential construction and operation period impacts to water quality would be less than significant.

**(2) Depletion of Groundwater Resources.** Potential impacts to groundwater resources for Phases 1 and 2 are described below.

**Phase 1 Impacts.** Although all design details for the Master Plan development are not finalized, construction of the OPC2 building would likely require excavation to the depth of groundwater (which may be encountered at about 8.5 feet bgs). No groundwater would be used during operation of the project, and the changes in locations and areas of impervious surfaces would not be expected to significantly affect existing groundwater recharge.

Dewatering could be necessary during construction activities below the groundwater elevation. Hazardous materials releases in excavations have the potential to directly affect groundwater quality.

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<sup>31</sup> Ibid.

These potential impacts to groundwater would occur only during the construction-phase of development and no effects to groundwater during the operation of Master Plan development would be anticipated. Implementation of SCA HYD-1 described above would ensure these impacts would be less than significant.

Any groundwater dewatering required during construction would be expected to be limited in volume and duration. Discharge of dewatered groundwater to the storm or sanitary sewer would be subject to permitting requirements from either RWQCB, for discharge to the storm sewer, or East Bay Municipal Utilities District (EBMUD), for discharge to the sanitary sewer. Implementation of the SWPPP, required under SCA HYD-1 and described above, would ensure that potential hazardous materials releases to groundwater as a result of dewatering during Phase 1 would be less than significant.

**Phase 2 Impacts.** Impacts to groundwater resources related to Phase 2 would be similar to Phase 1 development, as described above. The construction of large buildings on the site would likely require excavation to the depth of groundwater (which may be encountered at about 8.5 feet bgs), possibly requiring construction-period dewatering. Implementation of the SWPPP, required under SCA HYD-1 and described above, would ensure that potential hazardous materials releases to groundwater would be less than significant. As under Phase 1, no use of groundwater is proposed and changes in location and areas of impervious surfaces would not significantly affect groundwater recharge. Potential impacts related to groundwater during Phase 2 would be less than significant.

**(3) Erosion and Siltation.** Potential impacts associated with erosion and siltation for Phases 1 and 2 are described below.

**Phase 1 Impacts.** The project site is currently covered with buildings, landscaping, roadways, and other surfaces that prevent direct soil exposure to the elements and minimize the potential for erosion or siltation. During the demolition, clearing, grading and construction under the Master Plan, activities such as excavation, soil stockpiling, soil disturbance and construction operations may result in circumstances exposing soil to rainfall, running water due to dewatering operations, and/or soil wetting for the purpose of dust control. These conditions could result in mobilization of soil and sediment, and the resulting sediments could be carried to stormwater drains or off-site to public streets and sidewalks, or adjacent properties.

As discussed above, the City of Oakland Municipal Code Chapter 13.16 and Section 15.04.660 require that a project proponent prepare a Grading, Erosion and Sedimentation Control plan for a proposed project if, during project construction, the volume of the excavated fill material would exceed 50 cubic yards and involve depths of excavation that exceed 5 feet.

The required plans must include drainage, erosion, and sediment control measures and incorporate construction Best Management Practices (BMPs) to prevent pollutants from entering the storm sewer to the maximum extent practicable. The grading plan must address existing, temporary, and final drainage facilities. Erosion and sediment control must combine interim and permanent measures to minimize erosion, storm water runoff, and sedimentation. The plans must specify that, after construction is complete, the project applicant must ensure that the storm drain system be inspected and that the project applicant clears the system of any debris or sediment.

Compliance with SCA GEO-1, Erosion and Sedimentation Control Plan, and Grading Permit requirements would ensure less-than-significant erosion and siltation impacts.

**Phase 2 Impacts.** Impacts related to erosion and siltation would be similar to Phase 1 development, as described above. Compliance with SCA GEO-1, Erosion and Sedimentation Control Plan, and Grading Permit requirements would ensure less-than-significant erosion and siltation impacts.

**(4) Flood-Related Impacts.** The project site is not located within a FEMA-mapped flood hazard zone and would not be subject to flooding risks from a seiche, tsunami, or coastal flooding hazards. Although the project site is located within the mapped inundation area of Lake Temescal Dam, the dam safety is overseen by the East Bay Regional Park District, the owner of the dam, as well as the California DOSD. The City of Oakland General Plan Safety Element states that the City will “minimize further the relatively low risks from non-storm-related forms of flooding by requesting from DOSD a timeline for the maintenance inspection of all operating dams in the City and reviewing procedures adopted by the City pursuant to the Dam Safety Act for the emergency evacuation of areas located below major water storage facilities.”<sup>32</sup> DOSD inspects dams in California on an annual basis; roughly one third of these inspections include in-depth instrumentation reviews of dam surveillance network data.<sup>33</sup> Periodically, DOSD reviews the stability of dams in light of improved design approaches and new findings regarding earthquake hazards and hydrologic stability.<sup>34</sup> These regulatory safeguards would ensure that the potential for flood-related impacts would be less than significant.

**(5) Exceed Existing or Planned Stormwater Drainage Systems.** Potential impacts to existing and planned stormwater drainage systems are discussed below for Phase 1 and 2 development.

**Phase 1 Impacts.** As noted above, implementation of the Master Plan would result in an increase in the amounts of impervious surfaces at the project site. An increase in impervious cover is typically associated with increased runoff rates and velocities. If not properly managed, the increased runoff may exceed the capacity of the existing drainage network either locally or downstream. Alteration of drainage patterns could result in localized flooding if stormwater conveyance structures are undersized.

As described above, prior to approval of permits for development under the Master Plan, the applicant would be required to comply with requirements of the City’s Standard Stormwater and Sewer Condition of Approval (SCA HYD-4) to control or minimize any increases in infiltration or inflow to the stormwater and sanitary sewer system. Other City stormwater requirements, such as preparation of a Post-Construction Stormwater Pollution Management Plan (SCA HYD-2), require sizing of stormwater detention and treatment measures to ensure that runoff volumes are not increased over existing conditions. Requirements for a Maintenance Agreement for Stormwater Treatment Measures

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<sup>32</sup> Oakland, City of, 2004, op. cit.

<sup>33</sup> California Department of Water Resources, Division of Safety of Dams, 2014. Safety Information, Website: [www.water.ca.gov/damsafety/FAQAnswer/index.cfm#safety](http://www.water.ca.gov/damsafety/FAQAnswer/index.cfm#safety) (accessed May 15).

<sup>34</sup> Ibid.

(SCA HYD-3) would ensure that these measures are maintained throughout the life of the Master Plan improvement.

Under these requirements, drainage from the proposed Master Plan improvements would not exceed the capacity of the downstream drainage system. Grading and stormwater pollution management plans must be reviewed for compliance with these requirements by the City's Community and Economic Development Agency, Building Services Division, Engineering Permit Department. Any improvements to the storm drainage system deemed necessary by the City of Oakland, including construction of or improvements to stormwater conveyances, must be part of the conditions of approval for development under the Master Plan. These measures would require participation in the necessary stormwater and sanitary sewer infrastructure improvements to accommodate the proposed project and would ensure a less-than-significant impact to the stormwater system.

**Phase 2 Impacts.** Similar to the discussion above for Phase 1, new or modified stormwater structures may be required as part of Phase 2 development. During Phase 2, this would include the relocation of existing storm drains and 24-inch diameter stormwater lines within those portions of the SR 24 right-of-way proposed for Master Plan development. Implementation of SCAs HYD-3, HYD-4, and HYD-5 would be required for Phase 2 development. Compliance with these measures would ensure that impacts related to stormwater system would be less than significant.

**(6) Create or contribute substantial runoff which would be an additional source of polluted runoff.** As noted above under b.(1), implementation of SCAs GEO-1 and HYD-1 during project construction, and SCAs HYD-2, HYD-3, and HYD-4 during project operation would ensure that the potential impact from polluted runoff would be less than significant.

**(7) Other Water Quality Degradation Impacts.** Implementation of SCAs GEO-1 and HYD-2 during project construction, and SCAs HYD-2, HYD-3, and HYD-4 during project operation would ensure that the potential storm water impacts would be less than significant. No other potential water quality impacts would result from the project.

**(8) Flooding Impacts to Housing.** The project site is not included in a flood zone and therefore would not result in any impacts related to the placement of housing or other structures within a flood zone.

**(9) Impede or Redirect Flood Flows.** According to the most recent FEMA mapping, the project site is not located within the 100- or 500-year flood hazard zone, and therefore, no placement of structures in a flood hazard zone that could impede or redirect flood flows would occur.

**(10) Expose Persons or Structures to Flood Hazards.** As noted above, the project site is not located within a FEMA-mapped flood hazard zone. City policies and the existing dam safety regulatory framework would ensure that any potential dam inundation flooding hazard impacts to persons or structures would be less than significant.

**(11) Inundation by Seiche, Tsunami, or Mudflow.** Due to its location and elevation, the project site would not be subject to coastal hazards, including sea level rise, seiche, tsunami, or extreme high tide. Due to the level topography, the project site is not subject to mudflows, a type of landslide (additional information regarding landslides is contained in Section IV.H, Geology, Seismicity, and Soils).

**(12) Erosion, Siltation, or Flooding Due to Change in Drainage Patterns.** As noted above, drainage patterns at the project site would be locally modified and the amount of impervious cover is expected to increase. However, Temescal Creek is channelized in an underground culver near the project site and no other surface water bodies cross the project site. Therefore, the project would not alter the course of Temescal Creek or any other established stream or river.

**(13) Conflict with the City of Oakland Creek Protection Ordinance.** As Temescal Creek is channelized in an underground culvert near the project site, no potential conflicts with the City Creek Protection ordinance are anticipated, and no significant impacts would occur.

**c. Cumulative Hydrology and Water Quality Impacts.** The geographic area considered for the hydrology and water quality analysis is the East Bay Plain of the San Francisco Bay Basin. Stormwater discharged from past and existing projects within this area has contained pollutants that have contributed to impairment of the water quality of receiving waters, including San Francisco Bay. Stormwater regulations have become progressively more stringent since the passing of the federal CWA, and current requirements now require new developments to manage and treat all significant sources of stormwater pollutants, in particular stormwater runoff from past, present, and existing development is treated in accordance with NPDES requirements. As such, a reduction in overall pollutant loads in stormwater is anticipated over time. Therefore, no significant adverse impacts would be expected from cumulative water quality conditions as these conditions would be expected to cumulatively improve. No project effects were identified with the potential for any considerable contributions to cumulatively significant impacts related to groundwater resources; flooding; hydromodification; stream alteration; seiche, tsunami, or mudslide hazards; or conflicts with the City Creek Ordinance.



## J. HAZARDS AND HAZARDOUS MATERIALS

This section provides an overview of the potential presence of hazardous materials<sup>1</sup> and other public health hazards on and near the project site and assesses potential impacts to public health and safety and the environment that could result from the development of the project.

### 1. Setting

The following section describes the existing setting related to hazardous materials and aviation operations at and near the project site as well as the regulatory agency framework and local policies that address those hazards.

**a. Potential Sources of Hazardous Materials at and near the Project Site.** Potential hazardous materials issues in the project site were evaluated in a Phase I Environmental Site Assessment for the CHRCO campus, conducted in August 2008 (included in Appendix G).<sup>2</sup> The scope of the Phase I investigation included a site reconnaissance to visually check for hazardous materials use and contamination, and a review of historical land use information and regulatory agency files and databases regarding hazardous materials use and release.

Historical land use information reviewed for the Phase I indicated that the project site was developed with single-family residences since at least 1906. Around 1913, Children's Hospital of Oakland (then called the Baby Hospital) opened in one of those residences. The residence was demolished in 1928 and the current A/B and B/C hospital wings were constructed. Numerous additional buildings were constructed over the years, with major additions and renovations between the late 1950s and mid-1990s.

The Phase I investigation and a site reconnaissance performed for this analysis identified five potential sources of hazardous materials at and near the project site.

**(1) Hospital Hazardous Chemical Use and Hazardous Waste Disposal.** The Phase I site reconnaissance identified a biohazard storage area near the loading dock in the southwest corner of the main hospital building. Biohazardous wastes generated at the hospital are heated in an outdoor autoclave prior to disposal. Autoclaved needles are stored in a separate 55-gallon labeled trash bin and other autoclaved wastes are stored in the general refuse dumpster pending off-site disposal. A number of common hazardous materials were noted to be stored in storage vans near the loading dock and in hospital closets. These included janitorial and cleaning supplies, paint and other materials used for construction, and lubricants and other chemicals used for maintenance of on-site electrical generators. The generators are fueled using an 8,000-gallon diesel underground storage tank (UST),

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<sup>1</sup> The California Health and Safety Code defines a hazardous material as "...any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety, or to the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, radioactive materials, and any material which a handler or administering agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment." (Health and Safety Code Section 25501).

<sup>2</sup> The Source Group, Inc., 2008. *Draft Phase I Environmental Site Assessment, Children's Hospital and Research Center of Oakland, 747 52<sup>nd</sup> Street, Oakland, California*. August 22. To CHRCO's knowledge, no changes regarding the potential for hazardous materials issues at the project site have occurred since this analysis was conducted in 2008.

which is located near the hospital loading dock/dumpster area. No evidence of improper storage or disposal of hazardous materials was noted during the Phase I site reconnaissance.<sup>3</sup>

**(2) Petroleum Storage Tanks.** In addition to the permitted UST fueling the generator, the Phase I reported that a UST had formerly been located near the southern edge of the B/C Wing, and north of the existing large magnolia tree. The Phase I did not identify any UST removal records and CHRCO staff was unaware of the disposition and former contents of the UST.<sup>4</sup>

**(3) Hazardous Materials Storage, Use, Disposal, and Release Sites near the Project Site.** A regulatory database report was reviewed for the Phase I investigation to identify sites within one-quarter mile that could potentially affect soil and groundwater conditions at the project site. As part of this analysis, an updated regulatory database report<sup>5</sup> and regulatory files were reviewed to provide current information regarding sites identified in the Phase I ESA and to determine if any additional sites have been reported since the Phase I was completed.

The Phase I review identified six sites, including the CHRCO campus, a CHRCO-owned parcel southwest of the project site at 4701 Martin Luther King Jr. Way, a former PG&E substation located at the corner of 51<sup>st</sup> Street and Shattuck Avenue, two gasoline stations at 5131 Shattuck Avenue and 5101 Telegraph Avenue, and a former clothing dry cleaners at 5100 Telegraph Avenue.<sup>6</sup>

The CHRCO campus was listed as a registered small-quantity hazardous waste generator and for the registered, 8,000-gallon diesel UST (described above). No hazardous materials releases were reported at the CHRCO campus. With the exception of the 4701 Martin Luther King Jr. Way parcel, all reported hazardous materials release cases within one-quarter mile of the project site have been closed or are eligible for closure, indicating that remediation is complete or was not necessary.<sup>7</sup>

The 4701 Martin Luther King Jr. Way CHRCO-owned parcel, which is across Martin Luther King Jr. way from the main campus, is used for off-site vehicle parking and is listed due to a leaking underground storage tank. Three USTs, one containing gasoline and two containing heating oil, were removed from the site in 1989. Between 2000 and 2002, investigations identified total petroleum hydrocarbons (TPH) in the gasoline and diesel ranges and associated volatile organic compounds (VOCs) in soil and groundwater.<sup>8</sup> CHRCO has made a request that the case be classified as a “low threat” site and closed, but as of the time of preparation of this Draft EIR, the release case remains open.<sup>9</sup>

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<sup>3</sup> Ibid.

<sup>4</sup> Ibid.

<sup>5</sup> Environmental Data Resources, 2013. Radius Map Report, CHO Master Plan Area, 52<sup>nd</sup> Street/Dover Street, Oakland, CA 94609. September, 30.

<sup>6</sup> The Source Group, Inc., 2008, op. cit.

<sup>7</sup> Environmental Data Resources, 2013, op. cit.

<sup>8</sup> WEST Environmental Services and Technology, 2013. No Further Action Request, Regional Board Case No.: 01-1724, LOP Case No. RO0000028, 4701 Martin Luther King Jr. Way, Oakland, California. March.

<sup>9</sup> State Water Resources Control Board, 2013. Geotracker Database. Website: [geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T0600101595](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0600101595) (accessed October 1, 2013).

**(4) Asbestos, Lead, and other Hazardous Building Materials.** The project site includes a number of buildings constructed prior to 1980. Prior to 1978, lead compounds were commonly used in interior and exterior paints, while asbestos fibers were often used in building materials for its strength and fire resistant properties until at least 1980. If intact, lead-based paint and asbestos-containing materials do not present a health risk, but lead and asbestos can be released if these materials are not properly abated prior to building demolition.

In addition to lead and asbestos, other common items such as fluorescent lighting, thermostats, and electrical transformers can contain hazardous materials which may pose a health risk if not handled and disposed of properly prior to demolition. Fluorescent lighting tubes and ballasts and computer displays are regulated as “universal wastes” by the California Environmental Protection Agency (Cal/EPA).<sup>10</sup> Universal waste regulations allow common, low-hazard wastes to be managed under less stringent requirements than other hazardous wastes. Proper handling and disposal of other hazardous materials would be the responsibility of the owner of the project site, who would be considered the generator of the hazardous wastes that result from removal of these items.

**(5) Aerially-Deposited Lead.** In addition to hazardous materials at the CHRCO campus, there may be a potential for lead to be present in shallow soils in the SR 24 right-of-way portion of the project site. Lead alkyl compounds were first added to gasoline in the 1920s. Beginning in 1973, the U.S. Environmental Protection Authority (EPA) ordered a gradual phase out of lead from gasoline that significantly reduced the prevalence of lead by the mid-1980s.<sup>11</sup> Soils adjacent to major roadways often contain elevated concentrations of aerially-deposited lead. The lead deposition is the result of airborne particulates and surface water runoff associated with tailpipe emissions prior to the time lead was phased out of vehicle fuels. Although lead deposition patterns vary depending on local topography and wind patterns, hazardous concentrations of lead have commonly been found within 30 feet of the edge of highway pavement and within the top 6 inches of soil.<sup>12</sup>

**b. Aviation Setting.** The Children’s Hospital Oakland Helistop, located on the CHRCO campus, is a registered private helistop. There are two additional Federal Aviation Administration (FAA) registered private helistops located in Oakland; the rooftop Oakland Convention Center Helistop at 10<sup>th</sup> Street and Broadway approximately 2.4 miles to the southwest, and atop the Alameda County Parking Garage located at 165 13<sup>th</sup> Street, approximately 2.5 miles to the south.<sup>13</sup>

The project site is located approximately 9 miles north of the nearest active airport, the Oakland International Airport. According to the Oakland International Airport Land Use Compatibility Plan, the project site is not located within any noise or safety compatibility zones established for the

<sup>10</sup> Title 22, California Code of Regulations, Section 66273 contains standards for management of universal wastes.

<sup>11</sup> California Department of Toxic Substances Control, 2004. *Draft Lead Report*. August.

<sup>12</sup> California Department of Toxic Substances Control, 2000b. *Fact Sheet, Variance for Caltrans Districts 4,6,7,8,10,11,12 for Reuse of Lead-Contaminated Soils*.

<sup>13</sup> City-Data.com, 2013. *FAA Registered Airports, Heliports and Other Landing Facilities in California*. Website: [www.city-data.com](http://www.city-data.com) (accessed March 11, 2013).

airport.<sup>14</sup> The former Naval Air Station at Alameda is approximately 4 miles to the west; however, operations ceased and the base was closed in 1997.<sup>15</sup>

Aviation facilities and airspace in the United States is regulated by the FAA for the purpose of ensuring the safety of air transportation and the efficient use of navigable airspace by aircraft. The FAA's authority to promote the safe and efficient use of navigable airspace, whether concerning existing or proposed structures, is predominately derived from Title 14, United States Code, Section 44718. Helistop permitting and operations are regulated under FAA and state requirements. State helistop permit requirements are contained in the State Aeronautics Act (Public Utilities Code, Section 21001 et seq) and the California Code of Regulations Title 21, Sections 3525-3560.

**c. Hazardous Materials Regulatory Context.** The following section provides the federal, State, and local regulatory framework for hazardous materials and waste, hospital hazardous waste management, radioactive waste management, hazardous building materials (e.g., lead, asbestos), and worker health and safety.

The use, storage, and disposal of hazardous materials, including management of contaminated soils and groundwater, is regulated by numerous local, state, and federal laws and regulations. The EPA is the federal agency that administers hazardous materials and hazardous waste regulations. State agencies include the Cal/EPA, which includes the California Department of Toxic Substances Control (DTSC), the State Water Resources Control Board (SWRCB), the California Air Resources Board (ARB), and other agencies. The San Francisco Bay Regional Water Quality Control Board (Regional Water Board), the Bay Area Air Quality Management District (BAAQMD), Alameda County Department of Environmental Health (ACDEH), and Oakland Fire Services Agency (OFSA) have jurisdiction on a regional or local level.

A description of each agency jurisdiction and involvement in the management of hazardous materials and wastes is provided below.

**(1) Federal.** The EPA is the federal agency responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials and hazardous waste. The federal regulations are primarily codified in Title 40 of the Code of Federal Regulations (40 CFR). The legislation includes the Resource Conservation and Recovery Act of 1976 (RCRA), the Superfund Amendments and Reauthorization Acts of 1986 (SARA), and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The EPA provides oversight for site investigation and remediation projects, and has developed land disposal restrictions and treatment standards for the disposal of certain hazardous wastes.

**(2) State Agencies.** Three State agencies, described below, regulate non-medical hazardous materials and wastes applicable to the proposed project. Medical wastes in California have a separate regulatory framework, discussed under section c.(4), below.

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<sup>14</sup> Alameda County Community Development Agency, 2010. *Oakland International Airport, Airport Land Use Compatibility Plan*. December.

<sup>15</sup> Department of the Navy, 2009. *Base Realignment and Closure Plans, Former Naval Air Station Alameda*. Website: [www.bracpmo.navy.mil](http://www.bracpmo.navy.mil) (accessed March 12, 2013).

**Department of Toxic Substances Control.** In California, DTSC is authorized by the EPA to enforce and implement federal hazardous materials laws and regulations. California regulations pertaining to hazardous materials are equal to or exceed the federal regulation requirements. Most State hazardous materials regulations are contained in Title 22 of the California Code of Regulations (CCR). DTSC generally acts as the lead agency for soil and groundwater cleanup projects that affect public health, and establishes cleanup levels for subsurface contamination that are equal to, or more restrictive than, federal levels. DTSC has also developed land disposal restrictions and treatment standards for hazardous waste disposal in California.

**State Water Resources Control Board.** The SWRCB enforces regulations on how to implement UST programs. It also allocates monies to eligible parties who request reimbursement of funds to clean up soil and groundwater pollution from UST leaks. The SWRCB also enforces the Porter-Cologne Water Quality Act of 1969 through its nine regional boards, including the Regional Water Board, described below.

**California Air Resources Board.** This agency is responsible for coordination and oversight of state and local air pollution control programs in California, including implementation of the California Clean Air Act of 1988. The ARB has developed state air quality standards, and is responsible for monitoring air quality in conjunction with the local air districts.

**(3) Regional and Local Agencies.** The following regional and local agencies have regulatory authority over the proposed project's management of hazardous materials and wastes on the site.

**San Francisco Bay Regional Water Quality Control Board.** The project site is located within the jurisdiction of Regional Water Board. The Regional Water Board provides for protection of State waters in accordance with the Porter-Cologne Water Quality Act of 1969. Regional Water Board can act as lead agency to provide oversight for sites where the quality of groundwater or surface waters is threatened, and has the authority to require investigations and remedial actions.

**Bay Area Air Quality Management District.** The BAAQMD has primary responsibility for control of air pollution from sources other than motor vehicles and consumer products (which are the responsibility of the EPA and ARB). BAAQMD is responsible for preparing attainment plans for non-attainment criteria pollutants, control of stationary sources, and the issuing of permits for activities including asbestos demolition/renovation activities (District Regulation 11, Rule 2).

**Alameda County Department of Environmental Health and Oakland Fire Services Agency.** ACDEH and OFSA are the primary agencies responsible for local enforcement of state and federal laws pertaining to hazardous materials management and for oversight of hazardous materials investigations and remediation in Alameda County. In Oakland, OFSA has been granted responsibility for implementation and enforcement of many hazardous materials regulations under the Certified Unified Program Agency (CUPA) Program (California Health and Safety Code Chapter 6.11). The CUPA programs include the following:

- Hazardous Materials Business Plan (HMBP) Program
- Hazardous Waste Generator Program
- Underground Storage Tank Program

- Aboveground Storage Tank Program
- California Accidental Release Program/Risk Management Plan
- Redevelopment of Sites with Historical Contamination
- California Fire Code

OFSA also implements the City of Oakland Hazardous Materials Assessment and Reporting Program, pursuant to City Ordinance No. 12323, which requires notification of hazardous materials storage, use and handling, and an assessment as to whether this storage, use and handling would cause a public health hazard to nearby sensitive receptors including schools, hospitals or other sensitive receptors.

The Oakland Office of Emergency Services (part of OFSA), provides emergency response to fire emergencies and hazardous materials incidents within the City of Oakland, and conducts vegetation management inspections for wildfire reduction. Oakland has entered into agreements with adjoining jurisdictions for cooperative response to fires.<sup>16</sup>

Submittal of updated HMBP to the OFSA in accordance with changes to hazardous materials storage and disposal locations and volumes in association with implementation of the project and future operation of the hospital would be required. Potential removal or installation of USTs or ASTs under the project would also be subject to oversight by the OFSA.

**(4) Medical Waste Management.** Medical wastes are generated or produced as a result of diagnosis, treatment, or immunization of humans, the production or testing of biologicals,<sup>17</sup> and are classified as either biohazardous waste or sharps waste.<sup>18</sup> Cultures, blood and blood products, tissues, and body parts are considered medical wastes. The transportation and disposal of medical wastes at CHRCO are closely regulated under the California Medical Waste Management Program (CMWMP).<sup>19</sup> The California Department of Health Services (CDHS) is responsible for the CMWMP with local regulatory oversight provided by the Alameda County Solid/Medical Waste Management Department, the local enforcement agency. The CMWMP includes requirements for large quantity generators of medical waste,<sup>20</sup> waste haulers, containment and storage, and enforcement.

**(5) Radioactive Waste Management.** Use of radioisotopes for hospital diagnostic and therapeutic applications has the potential to generate low level radioactive wastes. Pursuant to the federal Atomic Energy Act requiring states to assume responsibility for the use, transportation, and disposal of low-level radioactive material and for the protection of the public from radiation hazards,

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<sup>16</sup> Oakland, City of, 2004. *General Plan, Safety Element, Fire Hazards (Chapter 4)*. Amended 2012.

<sup>17</sup> The term “biologicals” means medicinal preparations made from living organisms and their products, including but not limited to serums, vaccines, antigens and antitoxins. California Medical Waste Management Program, 2007, California Health and Safety Code Sections 117600 through 118360.

<sup>18</sup> The term “sharps waste” refers to any device having acute rigid corners, edges, or protuberances capable of cutting or piercing, including but not limited to hypodermic needles and broken glass items (such as pipettes and vials) contaminated with biohazardous waste. California Medical Waste Management Program, 2007.

<sup>19</sup> California Medical Waste Management Act, California Health and Safety Code Sections 117600-118360.

<sup>20</sup> A large quantity generator generates 200 or more pounds of medical waste in any month of a 12-month period.

the Radiological Health Branch (RHB) of the California Department of Health Services (CDHS) administers the Radiation Control Law, which governs the use, transportation, and disposal of radioactive material and radiation-producing equipment. Radioactive material regulations require registration of sources of ionizing radiation, licensing of radioactive material, and protection against radiation exposures. The RHB also regulates the transportation of radioactive materials and disposal of radioactive wastes.<sup>21</sup> The regulations specify appropriate use and disposal methods for radioactive substances, as well as worker safety precautions and health monitoring programs.

**(6) Worker Health and Safety.** Worker health and safety is regulated at the federal level by the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA). The federal Occupational Safety and Health Act of 1970 authorizes States (including California) to establish their own safety and health programs with OSHA approval; implementation of worker health and safety in California is regulated by the California Department of Industrial Relations (DIR). The DIR includes the Division of Occupational Safety and Health (DOSH), which acts to protect workers from safety hazards through its California OSHA (Cal/OSHA) program and provides consultative assistance to employers. California standards for workers dealing with hazardous materials are contained in CCR Title 8 and include practices for all industries (General Industrial Safety Orders), specific practices for construction, and other industries.

**(7) City of Oakland Policies.** Relevant policies and conditions from the City's General Plan, Municipal Code, and Standard Conditions of Approval are described below.

**Oakland General Plan.** The 2004 Safety Element of the Oakland General Plan<sup>22</sup> contains the following policy statements and action items relevant to hazards, hazardous materials, and emergency response that may apply to this project. Relevant policies from other General Plan elements are also described.

- **Policy HM-1:** Minimize the potential risks to human and environmental health and safety associated with past and present use, handling, storage and disposal of hazardous materials.
  - **Action HM-1.1:** Continue to exercise unified-program responsibilities, including the issuance of permits for and inspection of certain industrial facilities, monitoring the filing of disclosure forms and risk-management plans, hazardous-materials assessment reports and remediation plans, and closure plans by such facilities.
  - **Action HM-1.2:** Continue to enforce provisions under the zoning ordinance regulating the location of facilities which use or store hazardous materials.
  - **Action HM-1.3:** Consider adopting a health and safety protection overlay zone or set of procedures to ensure that new activities which use or store hazardous materials on a regular basis near residential zones do not endanger public health or the environment.
  - **Action HM-1.4:** Continue to participate in the Alameda County Waste Management Authority and, as a participant, continue to implement policies under the county's hazardous-waste management plan to minimize the generation of hazardous wastes.

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<sup>21</sup> Title 17, California Code of Regulations (CCR).

<sup>22</sup> Oakland, City of, 2004, amended 2012. *General Plan, Safety Element, Hazardous Materials (Chapter 5)*.

- Action HM-1.6: Through the Urban Land Redevelopment program, and along with other participating agencies, continue to assist developers in the environmental cleanup of contaminated properties.
- Policy HM-3: Seek to prevent industrial and transportation accidents involving hazardous materials, and enhance the city's capacity to respond to such incidents.
  - Action HM-3.4: Continue to rely on, and update, the City's hazardous materials area plan to respond to emergencies related to hazardous materials.

The following policy statement and action item from the Safety Element of the City of Oakland General Plan<sup>23</sup> addresses public safety and may be applicable to the proposed project.

- Policy PS-1: Maintain and enhance the City's capacity to prepare for, mitigate, respond to, and recover from disasters and emergencies.
  - Action PS-1.2: Maintain and update as necessary the Oakland Standardized Emergency Management System Plan.
  - Action PS-1.3: Work with hospitals and other appropriate private-sector entities and government agencies to prevent closure of emergency rooms and trauma centers in the City.

The following policy statement from the Open Space, Conservation and Recreation (OSCAR) Element of the General Plan<sup>24</sup> regarding hazards and hazardous materials may apply to the proposed project:

- Policy CO-1.2: Soil contamination and hazards. Minimize hazards associated with soil contamination through the appropriate storage and disposal of toxic substances, monitoring of dredging activities, and clean-up of contaminated sites. In this regard, require soil testing for development of any site (or dedication of any parkland or community garden) where contamination is suspected due to prior activities on the site.

**City of Oakland Municipal Code.** The City of Oakland Municipal Code includes regulations for the handling of hazardous materials in the City. Title 8, Chapter 8.12 of the Oakland Municipal Code adopts California Health and Safety Code laws (Health and Safety Code Section 25500 et seq.) related to hazardous materials. City Ordinance No. 12323 regarding hazardous materials reporting is described above.

**City of Oakland's Standard Conditions of Approval.** The City's standard Conditions of Approval relevant to this impact topic are listed below for reference. The Conditions of Approval will be adopted as requirements of the proposed project if the project is approved by the City. See also AIR-2, Asbestos Removal in Structures, which addresses asbestos removal in structures.

**SCA HAZ-1: Hazards Best Management Practices.** *Prior to commencement of demolition, grading, or construction.* The project applicant and construction contractor shall ensure that construction of Best Management Practices (BMPs) are implemented as part of construction to minimize the potential negative effects to groundwater and soils. These shall include the following:

<sup>23</sup> Oakland, City of, 2004. *General Plan, Safety Element, Public Safety (Chapter 2)*. Amended 2012.

<sup>24</sup> Oakland, City of, 2004. *General Plan, Open Space, Conservation and Recreation Element*.



- Follow manufacturer's recommendations on use, storage, and disposal of chemical products used in construction;
- Avoid overtopping construction equipment fuel gas tanks;
- During routine maintenance of construction equipment, properly contain and remove grease and oils;
- Properly dispose of discarded containers of fuels and other chemicals.
- Ensure that construction would not have a significant impact on the environment or pose a substantial health risk to construction workers and the occupants of the proposed development. Soil sampling and chemical analyses of samples shall be performed to determine the extent of potential contamination beneath all USTs, elevator shafts, clarifiers, and subsurface hydraulic lifts when on-site demolition, or construction activities would potentially affect a particular development or building.
- If soil, groundwater or other environmental medium with suspected contamination is encountered unexpectedly during construction activities (e.g., identified by odor or visual staining, or if any underground storage tanks, abandoned drums or other hazardous materials or wastes are encountered), the applicant shall cease work in the vicinity of the suspect material, the area shall be secured as necessary, and the applicant shall take all appropriate measures to protect human health and the environment. Appropriate measures shall include notification of regulatory agency(ies) and implementation of the actions described in Standard Conditions of Approval, as necessary, to identify the nature and extent of contamination. Work shall not resume in the area(s) affected until the measures have been implemented under the oversight of the City or regulatory agency, as appropriate.

**SCA HAZ-2: Conformance with Other Requirements.** Prior to the issuance of a demolition, grading, P-job, or other construction related permit.

- a) The project applicant shall comply with all other applicable federal, state, regional and/or local laws/codes, requirements, regulations, and guidelines, including but not limited to those imposed by the City's Building Services Division, the City's Fire Marshal, and the City's Public Works Agency. Compliance with other applicable requirements may require changes to the approved use and/or plans.
- b) The applicant shall submit approved building plans for project-specific needs related to fire protection to the Fire Services Division for review and approval, including, but not limited to automatic extinguishing systems, water supply improvements and hydrants, fire department access, and vegetation management for preventing fires and soil erosion.

**SCA HAZ-3: Phase I and/or Phase II Reports.** *Prior to issuance of a demolition, grading, or building permit.* Prior to issuance of demolition, grading, or building permits the project applicant shall submit to the Fire Prevention Bureau, Hazardous Materials Unit, a Phase I environmental site assessment report, and a Phase II report if warranted by the Phase I report for the project site. The reports shall make recommendations for remedial action, if appropriate, and should be signed by a Registered Environmental Assessor, Professional Geologist, or Professional Engineer. The applicant shall implement the approved recommendations.

**SCA HAZ-4: Lead-Based Paint/Coatings, Asbestos, or PCB Occurrence Assessment.** *Prior to issuance of any demolition, grading or building permit.* The project applicant shall submit a comprehensive assessment report to the Fire Prevention Bureau, Hazardous Materials Unit, signed by a qualified environmental professional, documenting the presence or lack thereof of asbestos-containing materials (ACM), lead-based paint, and any other building materials or stored materials classified as hazardous waste by state or federal law for review and approval.

**SCA HAZ-5: Environmental Site Assessment Reports Remediation.** *Prior to issuance of a demolition, grading, or building permit.* If the environmental site assessment reports recommend remedial action, the project applicant shall:

- Consult with the appropriate local, state, and federal environmental regulatory agencies to ensure sufficient minimization of risk to human health and environmental resources, both during and after construction, posed by soil contamination, groundwater contamination, or other surface hazards including, but not limited to, underground storage tanks, fuel distribution lines, waste pits and sumps.
- Obtain and submit written evidence of approval for any remedial action if required by a local, state, or federal environmental regulatory agency.
- Submit a copy of all applicable documentation required by local, state, and federal environmental regulatory agencies, including but not limited to: permit applications, Phase I and II environmental site assessments, human health and ecological risk assessments, remedial action plans, risk management plans, soil management plans, and groundwater management plans.

**SCA HAZ-6: Lead-based Paint Remediation.** *Prior to issuance of any demolition, grading or building permit.* If lead-based paint is present, the project applicant shall submit specifications to the Fire Prevention Bureau, Hazardous Materials Unit signed by a certified Lead Supervisor, Project Monitor, or Project Designer for the stabilization and/or removal of the identified lead paint in accordance with all applicable laws and regulations, including but not necessarily limited to: Cal/OSHA's Construction Lead Standard, 8 CCR1532.1 and DHS regulation 17 CCR Sections 35001 through 36100, as may be amended.

**SCA HAZ-7: Other Materials Classified as Hazardous Waste.** *Prior to issuance of any demolition, grading or building permit.* If other materials classified as hazardous waste by state or federal law are present, the project applicant shall submit written confirmation to Fire Prevention Bureau, Hazardous Materials Unit that all state and federal laws and regulations shall be followed when profiling, handling, treating, transporting and/or disposing of such materials.

**SCA HAZ-8: Health and Safety Plan per Assessment.** *Prior to issuance of any demolition, grading or building permit.* If the required lead-based paint/coatings, asbestos, or PCB assessment finds presence of such materials, the project applicant shall create and implement a health and safety plan to protect workers from risks associated with hazardous materials during demolition, renovation of affected structures, and transport and disposal. The applicant shall implement the approved plan.

**SCA HAZ-9: Best Management Practices for Soil and Groundwater Hazards.** *Ongoing throughout demolition, grading, and construction activities.* The project applicant shall implement all of the following Best Management Practices (BMPs) regarding potential soil and groundwater hazards.

- Soil generated by construction activities shall be stockpiled onsite in a secure and safe manner. All contaminated soils determined to be hazardous or non-hazardous waste must be adequately profiled (sampled) prior to acceptable reuse or disposal at an appropriate off-site facility. Specific sampling and handling and transport procedures for reuse or disposal shall be in accordance with applicable local, state and federal agencies laws, in particular, the Regional Water Quality Control Board (RWQCB) and/or the Alameda County Department of Environmental Health (ACDEH) and policies of the City of Oakland.
- Groundwater pumped from the subsurface shall be contained onsite in a secure and safe manner, prior to treatment and disposal, to ensure environmental and health issues are resolved pursuant to applicable laws and policies of the City of Oakland, the RWQCB and/or the ACDEH. Engineering controls shall be utilized, which include impermeable barriers to prohibit groundwater and vapor intrusion into the building (pursuant to the Standard Condition of Approval regarding Radon or Vapor Intrusion from Soil and Groundwater Sources).

- Prior to issuance of any demolition, grading, or building permit, the applicant shall submit for review and approval by the City of Oakland, written verification that the appropriate federal, state or county oversight authorities, including but not limited to the RWQCB and/or the ACDEH, have granted all required clearances and confirmed that the all applicable standards, regulations and conditions for all previous contamination at the site. The applicant also shall provide evidence from the City's Fire Department, Office of Emergency Services, indicating compliance with the Standard Condition of Approval requiring a Site Review by the Fire Services Division pursuant to City Ordinance No. 12323, and compliance with the Standard Condition of Approval requiring a Phase I and/or Phase II Reports.

**SCA HAZ-10: Radon or Vapor Intrusion from Soil or Groundwater Sources.** *Ongoing.* The project applicant shall submit documentation to determine whether radon or vapor intrusion from the groundwater and soil is located on-site as part of the Phase I documents. The Phase I analysis shall be submitted to the Fire Prevention Bureau, Hazardous Materials Unit, for review and approval, along with a Phase II report if warranted by the Phase I report for the project site. The reports shall make recommendations for remedial action, if appropriate, and should be signed by a Registered Environmental Assessor, Professional Geologist, or Professional Engineer. Applicant shall implement the approved recommendations.

**SCA HAZ-11: Hazardous Materials Business Plan.** *Prior to issuance of a business license.* The project applicant shall submit a Hazardous Materials Business Plan for review and approval by Fire Prevention Bureau, Hazardous Materials Unit. Once approved this plan shall be kept on file with the City and will be updated as applicable. The purpose of the Hazardous Materials Business Plan is to ensure that employees are adequately trained to handle the materials and provides information to the Fire Services Division should emergency response be required. The Hazardous Materials Business Plan shall include the following:

- The types of hazardous materials or chemicals stored and/or used on site, such as petroleum fuel products, lubricants, solvents, and cleaning fluids.
- The location of such hazardous materials.
- An emergency response plan including employee training information
- A plan that describes the manner in which these materials are handled, transported and disposed.

**SCA HAZ-12: Fire Safety Phase Plan.** *Prior to issuance of a demolition, grading, and/or construction and concurrent with any p-job submittal permit.* The project applicant shall submit a separate fire safety phasing plan to the Planning and Zoning Division and Fire Services Division for their review and approval. The fire safety plan shall include all of the fire safety features incorporated into the project and the schedule for implementation of the features. Fire Services Division may require changes to the plan or may reject the plan if it does not adequately address fire hazards associated with the project as a whole or the individual phase.

**SCA HAZ-13: Site Review by the Fire Services Division.** *Prior to the issuance of demolition, grading, or building permit.* The project applicant shall submit plans for site review and approval to the Fire Prevention Bureau Hazardous Materials Unit. Property owner may be required to obtain or perform a Phase II hazard assessment.

## **2. Impacts and Mitigation Measures**

This section discusses potential impacts to public health that could result from implementation of the proposed project. The section begins with the significance thresholds, which establish the thresholds

used to determine whether an impact is significant.<sup>25</sup> The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate.

**a. Thresholds of Significance.** A significant hazardous material or public health and safety impact would occur if the project would:

- (1) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- (2) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- (3) Create a significant hazard to the public through the storage or use of acutely hazardous materials near sensitive receptors;
- (4) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- (5) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 (i.e., the “Cortese List”) and, as a result, would create a significant hazard to the public or the environment;
- (6) Result in less than two emergency access routes for streets exceeding 600 feet in length unless otherwise determined to be acceptable by the Fire Chief, or his/her designee, in specific instances due to climatic, geographic, topographic, or other conditions;
- (7) Fundamentally impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;
- (8) Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and would result in a significant safety hazard for people residing or working in the project area;
- (9) Be located within the vicinity of a private airstrip, and would result in a significant safety hazard for people residing or working in the project area; or
- (10) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

**b. Project Impacts.** The following section describes the potential impacts of the project related to public health and hazards. Although impacts associated with Phase 1 and 2 are described separately below, impacts identified under Phases 1 and 2 would generally be similar and the analysis is primarily contained under the Phase 1 impact discussion. Where there would be no impact associated with the project, only a brief discussion is provided and the phases of development are not discussed separately.

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<sup>25</sup> Oakland, City of, 2013. *CEQA Thresholds of Significance Guidelines*. October 28.

**(1) Routine Transport, Use, or Disposal of Hazardous Materials.** Development occurring under the Master Plan could result in the transport, use, or disposal of hazardous materials, as described below for Phases 1 and 2.

**Phase 1 Impacts.** Construction and operation of the project would require the routine transport, use, and disposal of hazardous materials. The potential for impacts from releases of hazardous materials during construction is discussed further under Accidental Releases of Hazardous Materials, Section b.(2) below. During operation, new hospital facilities developed under the Master Plan would be expected to use and store hazardous materials, similar to existing conditions. Patient care facilities, such as the OPC2 building, may use small quantities of hazardous materials related to medical diagnostic and treatment, and may generate biohazardous and/or low level radioactive wastes.

The classes of hazardous materials used for project-related development would be similar to those currently used in the project site. As described in the regulatory framework section, above, these hazardous materials are highly regulated at the federal, State, and local level to ensure that they are handled and disposed of in a safe manner. In addition, SCA HAZ-11 requires a Hazardous Materials Business Plan be submitted and approved by the Fire Prevention Bureau. This plan includes information regarding hazardous material handling, transportation, and disposal; employee training; and emergency response. These existing laws, regulations, and policies would ensure the potential impact from routine transportation, use, or disposal of hazardous materials would be less than significant.

**Phase 2 Impacts.** Construction and operation impacts related to the use and transport of hazardous materials would be similar to Phase 1 development, as described above. Proposed new buildings such as the Administrative Services Building, Clinical Support Building, and Central Utility Plant would be expected to use small quantities of common hazardous materials (e.g., paint, lubricants, and cleaning supplies) that would be used for routine maintenance. As described above, patient care facilities may also use small quantities of hazardous materials related to medical diagnostic and treatment, and may generate biohazardous and/or low level radioactive wastes. Implementation of SCA HAZ-11 would be required for Phase 2 development. In addition, as described above under Phase 1, existing laws, regulations, and policies would ensure the potential impact from routine transportation, use, or disposal of hazardous materials would be less than significant.

**(2) Accidental Release of Hazardous Materials.** Construction and operation occurring under the Master Plan could result in the accidental release of hazardous materials, if not properly handled, as described below for Phases 1 and 2.

**Phase 1 Impacts.** There may be a potential for hazardous materials to be released during construction activities during development of the Master Plan. Although a Phase I ESA did not identify any significant soil or groundwater contamination sources at the CHRCO campus, based on their age, structures proposed for demolition likely contain lead, asbestos, and other hazardous materials. Absent precautions, these hazardous materials could be released into the air during project demolition activities, where they could pose a hazard to construction workers and nearby members of the general public.

During operation, there would be no disturbance of soil, groundwater, and building materials, and adherence to existing hazardous materials regulations would prevent accidental releases of hazardous materials, as described under Routine Transport, Use, or Disposal of Hazardous Materials, Section

b.(1) above. Therefore, no significant accidental hazardous materials releases would be anticipated during operation of the facilities developed under the Master Plan.

City of Oakland Standard Conditions of Approval require the investigation of hazardous materials conditions and remediation, if required, prior to construction. SCA HAZ-3 requires preparation and review of Phase I and Phase II environmental site assessments, as required, prior to issuance of demolition, grading, or building permits. SCA HAZ-5 requires that contamination identified in these reports be remediated in accordance with regulatory agency guidance prior to construction.

SCAs HAZ-2 and AIR-2 requires asbestos removal in structures prior to demolition. SCA HAZ-6 requires remediation of lead-based paint in structures. SCAs HAZ-4 and HAZ-7 require certification that lead-based paint, asbestos, PCBs, and other hazardous materials have been identified and will be disposed of properly. SCA HAZ-8 requires a health and safety plan be prepared for any site where lead, asbestos, and/or PCBs are identified.

Additional conditions of approval would address the potential release of hazardous materials during construction. SCA HAZ-1 requires best management practices during construction to prevent releases of fuels and other chemicals. It also requires that any previously unknown contamination that is discovered during construction be investigated and remediated, as required. SCA AIR-1, discussed further in Section IV.E, Air Quality, requires dust and emissions control measures, and other precautions during construction in order to protect sensitive receptors, such as medical facilities, and within 1,000 feet of particulate sources such as highways. SCA HAZ-9 requires that potentially-contaminated soil and groundwater generated during construction be handled and disposed of in a safe and secure manner.

Compliance with the above described City of Oakland Standard Conditions of Approval would ensure that the potential hazards associated with releases of hazardous materials into the environment would be less than significant.

**Phase 2 Impacts.** Impacts related to the accidental release of hazardous materials would be similar to Phase 1 development, as described above. There may be the potential for a former petroleum UST south of the B/C wing to be encountered during development. The Phase I indicated that the UST was believed to have been removed, but no closure records for the UST were found. In addition, aerially deposited lead in the adjoining SR 24 right-of-way may potentially contain affected soils that may be excavated during development in the project site as part of Phase 2 construction. Similar to Phase 1, implementation of SCAs HAZ-1, HAZ-2, HAZ-3, HAZ-4, HAZ-5, HAZ-6, HAZ-7, HAZ-8, HAZ-9, and AIR-1 would be required for Phase 2 development. Compliance with these Standard Conditions of Approval would ensure that the potential hazards associated with releases of hazardous materials into the environment related to the UST south of the B/C wing, aerially deposited lead, or any other sources of hazardous materials would be less than significant.

**(3) Hazardous Materials Storage.** As discussed above, the proposed project may use small quantities of hazardous materials related to medical diagnostic and treatment, and may generate biohazardous and/or low level radioactive wastes. Implementation of SCA HAZ-11 and compliance with existing laws, regulations, and policies would ensure the potential impact from routine handling and storage of hazardous materials would be less than significant.

**(4) School Sites and other Sensitive Receptors.** The project is not located within ¼ mile of any existing or proposed school, and thus the project would not result in impacts related to hazardous emissions or materials to schools. Construction and operation occurring under the Master Plan could result in the accidental release of hazardous materials to sensitive receptors, if not properly handled, as described below for Phases 1 and 2.

**Phase 1 Impacts.** Children, the elderly, and the infirm are considered sensitive receptors, as these populations are often more susceptible to the health effects of hazardous materials than healthy adults. Sensitive receptors potentially affected by project development include future CHRCO patients, children and elderly in adjoining residential neighborhoods, and students at schools in the project vicinity. Nearby schools include Emerson Elementary, a public school located approximately ½ mile east of the project at 4803 Lawton Avenue, and Hillview Christian Academy, a small private school located at 4844 Telegraph Avenue, slightly more than ¼ mile east of the project.

Existing regulatory programs and standard City conditions of approval described above (SCAs HAZ-3, HAZ-4, HAZ-5, HAZ-6, HAZ-7, HAZ-8, HAZ-9 and HAZ-11) would serve to prevent hazardous materials within the project site from being released and affecting nearby sensitive receptors. Therefore, this impact would be less than significant.

**Phase 2 Impacts.** Impacts related to the accidental release of hazardous materials would be similar to Phase 1 development, as described above. Existing regulatory programs and Standard Conditions of Approval described above (SCAs HAZ-3, HAZ-4, HAZ-5, HAZ-6, HAZ-7, HAZ-8, HAZ-9 and HAZ-11) would serve to prevent hazardous materials within the project site from being released and affecting nearby sensitive receptors. Therefore, this impact would be less than significant.

**(5) Hazardous Materials Sites.** As determined by the Phase I ESA and a regulatory database report reviewed for this analysis, the project site is not located on the Cortese list of hazardous materials release sites; therefore, no impacts would occur related to listing on a hazardous materials site. The CHRCO-owned parking lot at 4701 Martin Luther King Jr. Way, is on the Cortese list due to a former leaking underground storage tank; proposed remedial activities at this site have been completed and case closure has been requested. This site would not create an impact for the proposed project.

**(6) Emergency Access.** Potential impacts to emergency response and emergency evacuation routes are described below for Phase 1 and 2 development.

**Phase 1 Impacts.** Operation of the hospital during Phase 1 would not significantly affect the City street grid system and would therefore not impede an emergency access route or interfere with an emergency response or evacuation plan. The existing street plan would remain, and there would be multiple emergency access routes possible via 52<sup>nd</sup> Street, Martin Luther King Jr. Way, Dover Street, 53<sup>rd</sup> Street, and Shattuck Avenue. Temporary, construction-related closures of streets would require traffic control plans to ensure emergency vehicle access, as required by SCA TRA-2, described further in Section IV.D, Transportation and Circulation. Compliance with this City of Oakland Standard Condition of Approval would ensure that any potential construction-related impacts associated with emergency access, response, or evacuation would be less than significant.

**Phase 2 Impacts.** Operation and construction impacts of Phase 2 development would be similar to those described above for Phase 1. Implementation of SCA TRA-2 would ensure that any potential construction-related impacts associated with emergency access, response, or evacuation would be less than significant.

**(7) Emergency Evacuation Routes.** As discussed above, construction and operation of Phases 1 and 2 would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan and this impact would be less than significant.

**(8) Aviation Hazards, Proximity to Public Use Airports.** Potential impacts associated with aviation hazards are described below for Phase 1 and 2 development.

**Phase 1 Impacts.** The project site is located approximately 9 miles north of the nearest active airport, Oakland International Airport, and is not located within safety compatibility zones of the airport land use plan. Therefore, no potential safety impacts would be expected related to airport activities. However, safety hazards within the site are associated with helicopter air ambulance service used to transport trauma patients to CHRCO and for transfers to and from other hospitals. No changes to the existing helistop are proposed with implementation of Phase 1. Adherence to existing FAA and State permitting and safety requirements would ensure that these arrivals and departures on the existing helistop meet strict safety standards. Therefore, no significant impacts associated with aviation hazards would occur.

**Phase 2 Impacts.** As under Phase 1, safety hazards could potentially result from helicopter air ambulance service used to transport trauma patients to CHRCO and for transfers to and from other hospitals. The current CHRCO Helistop structure would be replaced as part of Phase 2 development. As noted in the Aviation Setting section above, development of the replacement helistop would be subject to FAA and State safety requirements. The FAA provides design standards for hospital helistops in Chapter 4 of its Advisory Circular (AC) 150/5390-2C. This includes requirements for layout, minimum dimensions, building clearance, and guidance lighting and markings. Section 410 of AC 150/5390-2C includes standards for implementation and maintenance of a “Helistop Protection Zone” to provide safe, unobstructed helicopter approaches and departures. Compliance with existing safety standards would ensure that potential impacts from current and proposed replacement helistop operations would be less than significant.

**(9) Aviation Hazards, Proximity to Private Airstrips.** The project site is not located within the vicinity of a private airstrip. Therefore, the project would not result in a significant safety hazard for people residing or working in the project area related to proximity of a private airstrip.

**(10) Wildland Fire Hazards.** The project site is not located in or adjacent to an area mapped as containing a wildland fire hazard.<sup>26</sup> Therefore, impacts associated with fire hazards would be less than significant.

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<sup>26</sup> California Department of Forestry and Fire Protection, 2000. *Alameda County Natural Hazards Disclosure (Fire)*, Map ID NHD-01, January 6.



**c. Cumulative Impacts.** Potential cumulative public health and hazards impacts do not extend far beyond a project's boundaries, since such impacts are typically confined to specific locations and site-specific hazards and do not generally combine to create a cumulative impact.

Development activities in the vicinity of the proposed project could increase the exposure of persons to hazardous materials. However, the use, storage, and disposal of hazardous materials has been increasingly regulated by local, state, and federal law and regulation. Many past projects have been, all present projects are, and all future projects (including the proposed project) will be subject to these more rigorous controls for site remediation and development. The current and future handling of hazardous materials will be subject to these escalating regulations and the City's SCAs, and as a result, the cumulative hazardous materials risk will not be significant. Additionally, compliance with the strict regulatory requirements associated with handling of hazardous materials would reduce the potential for the project to result in a considerable contribution to potential significant hazardous materials cumulative impact. Therefore, implementation of the project together with the impact of past, present, pending and reasonably foreseeable development would not result in any cumulatively significant hazardous material impacts.

Only one helistop would be operational at the proposed project. The nearest other heliports from the project site are more than two miles away. Should additional heliports be constructed in the project vicinity in the future, the construction and operation would be subject to extensive FAA and State safety regulations. Compliance with the strict heliport regulatory requirements would reduce the potential for any cumulatively considerable contribution from the project to any potential cumulative impact. Therefore, implementation of the project together with the impact of past, present, pending and reasonably foreseeable development would not result in any cumulatively significant aviation hazard impacts.

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## K. UTILITIES

This section describes major utilities and infrastructure serving the project area and evaluates the effects of the proposed project on utilities and infrastructure. Potential impacts to infrastructure and utilities that would result from implementation of the proposed project are identified, and mitigation measures are recommended, as appropriate.

### 1. Setting

This analysis examines the following infrastructure and utility systems: water supply; wastewater treatment and collection; solid waste; natural gas and electricity; and telecommunications. Stormwater is discussed in Section IV.I, Hydrology and Water Quality.

**a. Water.** The following discussion provides background information on the City's water supplies, treatment facilities and distribution system.

**(1) Water Supply.** Potable water is provided to the project site, the City of Oakland, and approximately 1.3 million customers throughout portions of Alameda and Contra Costa Counties by the East Bay Municipal Utility District (EBMUD). EBMUD's service area includes 332-square-miles, and the City of Oakland comprises approximately 30 percent of its customers.

The EBMUD water supply system consists of a network of reservoirs, aqueducts, water treatment plants, pumping plants, and other distribution facilities that collect, transmit, treat, and distribute water from its primary water source, the Mokelumne River. Approximately 90 percent of the water used by EBMUD comes from the Mokelumne River watershed, located in the Sierra Nevada. Water is conveyed from the Pardee Reservoir, located approximately 38 miles northeast of Stockton and transported approximately 91 miles to EBMUD water treatment plants and terminal reservoirs through the Pardee Tunnel, the Mokelumne Aqueducts, and the Lafayette Aqueducts.<sup>1</sup>

EBMUD has water rights that allow for delivery of up to 325 million gallons per day (mgd); however, this allocation may be constrained by: upstream water use by prior water right holders; downstream water use and other downstream obligations, including protection of public trust resources; drought, or less-than normal rainfall for more than a year; and emergency outage. EBMUD's secondary water supply source is local runoff from the East Bay area watersheds that is stored in the terminal reservoirs located within service area boundaries. The availability of water from local runoff is dependent on hydrologic conditions and terminal reservoir storage availability.<sup>2</sup>

In fiscal year 2010, EBMUD's system demand was on average 174 mgd.<sup>3</sup> By 2040, EBMUD projects that water demand will increase to approximately 312 mgd within its service area, although with successful completion of water recycling and conservation programs, this demand could be reduced

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<sup>1</sup> East Bay Municipal Utility District, 2013a. Water Resources Planning Division. *Urban Water Management Plan 2010*. August.

<sup>2</sup> Ibid.

<sup>3</sup> Ibid.

to approximately 230 mgd.<sup>4</sup> In normal water years, EBMUD has sufficient water rights to meet demand through 2040; however, EBMUD's current water supply is insufficient to meet water demand during single- and multi-year droughts despite EBMUD's aggressive water conservation and recycled water programs.<sup>5</sup>

EBMUD has also developed mitigation and adaptation strategies to deal with the changing climate and its effects on water resources. In 2008, EBMUD incorporated climate change into its strategic plan, and has developed and implemented a climate change monitoring and response plan to inform future water supply, water quality, and infrastructure planning.<sup>6</sup>

To meet projected water needs and address deficient supply during severe droughts, EBMUD is working to identify supplemental water supplies and recycled water programs. New water supplies will come from water transfers, groundwater storage and regional supply projects.<sup>7</sup>

In addition, recycled water treatment facilities have been constructed at EBMUD's wastewater treatment plant, located at the foot of the Bay Bridge. EBMUD stores the recycled water in a 1.5 million gallon storage tank on the site and uses another 2.4 mgd at the wastewater treatment plant for various industrial processes and for landscape irrigation. EBMUD's Policy 73 requires that when non-potable water is available, customers use it for non-domestic purposes including landscape irrigation and industrial uses. One of the programs under this policy, launched in 2008, is the East Bayshore Recycled Water Project. It currently supplies recycled water for landscape irrigation in areas of Oakland and Emeryville where recycled water pipelines have been installed. A recycled water transmission pipeline along 4.4 miles of the Eastshore Freeway is largely complete, and 2 miles of transmission pipeline have been installed in Oakland, though the pipelines do not currently extend to the project site.<sup>8</sup>

**(2) Water Treatment Facilities.** There are six water treatment plants within the EBMUD water supply and distribution system. Combined, the six plants have a treatment capacity of over 375 mgd. The Orinda Water Treatment Plant, which serves Oakland and the project site, has the largest output with a maximum capacity of 200 mgd. All water delivered to customers is filtered through

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<sup>4</sup> The planning level of demand (312 mgd) does not include the short-term reduction and rebound in demand caused by the multi-year drought (2007-2010) and the downturn in the economy. The planning level of demand is used to assess demands as dictated by community policies. The EBMUD's 2040 Demand Study projected, on average, less than a one percent growth each year in customer demand through 2030 followed by a much lower increase thereafter to a 2040 planning level of demand of 230 mgd after applying reductions from conservation and recycled water savings.

<sup>5</sup> East Bay Municipal Utility District, 2013a, op. cit.

<sup>6</sup> East Bay Municipal Utility District, 2013b. *Water Supply: Project and Long-Term Planning*. Website: [www.ebmud.com/our-water/water-supply](http://www.ebmud.com/our-water/water-supply) (accessed December 20, 2013).

<sup>7</sup> East Bay Municipal Utility District, 2012a. *Water Supply Management Program 2040*. Website: [www.ebmud.com/our-water/water-supply/long-term-planning/water-supply-management-program-2040](http://www.ebmud.com/our-water/water-supply/long-term-planning/water-supply-management-program-2040) (accessed December 20, 2013). April.

<sup>8</sup> East Bay Municipal Utility District, 2013c. *East Bayshore Recycled Water Project*. Website: [www.ebmud.com/resource-center/publications/fact-sheets](http://www.ebmud.com/resource-center/publications/fact-sheets) (accessed December 20, 2013). June.

sand and anthracite, or carbon treatment and plants provide disinfection, fluoridation and corrosion control.<sup>9</sup>

**(3) Water Distribution System.** From the water treatment plants, water is distributed throughout EBMUD's service area, which is divided into more than 120 pressure zones ranging in elevation from sea level to 1,450 feet. The EBMUD water distribution network includes 4,100 miles of pipe, 140 pumping plants and 170 neighborhood reservoirs (tanks storing treated drinking water) generating a total capacity of 830 million gallons.<sup>10</sup> The project site is located within EBMUD's Central Pressure Zone, which provides water service to customers within an elevation range of 0 to 100 feet. Water pressure is generally adequate throughout the City, but pressure may be reduced in some locations with older water mains if they are not sized based on current standards or have lost capacity due to deterioration. EBMUD owns and operates distribution pipelines under all of the streets within the vicinity of the project area. Typically, required pipeline relocations and extensions, in addition to other water distribution infrastructure improvements, are made at the expense of the project applicant in consultation with EBMUD's New Business Office.

The project site is served by 6-inch water lines along Martin Luther King Jr. Way, 52<sup>nd</sup> Street, and Dover Street as shown on **Figure IV.K-1**.

**b. Wastewater System.** The City of Oakland provides citywide sanitary sewer collection services to the project area and EBMUD provides sewage transport, treatment, and discharge services. These services and existing infrastructure are described below.

**(1) Wastewater Collection System.** Sewer discharge from buildings within Oakland flows through lateral lines to the City's sewer network, which is mostly gravity-fed. Currently, the City operates and maintains approximately 1,000 miles of sewer lines and seven pump stations. The sewer network is connected directly to trunk lines that convey flows to EBMUD wastewater interceptors and finally to the Main Waste Water Treatment Plant (MWWTP) located in West Oakland. EBMUD wastewater interceptors consist of 29 miles of reinforced concrete pipes ranging from 1 to 9 feet in diameter. Most of the City's wastewater collection system is 50 years old and some of the existing infrastructure is as old as 100 years.

Existing sewer lines in the project vicinity consist of 8-inch sanitary sewer lines along Martin Luther King Jr. Way and Dover Street, and a 10-inch line along 53<sup>rd</sup> Street as shown on **Figure IV.K-1**.

**(2) Wastewater Treatment System.** Wastewater treatment is provided by EBMUD's wastewater service district (known as Special District No. 1 or SD-1).<sup>11</sup> EBMUD owns and operates a network of 15 wastewater pumping stations, (with 0.5 to 54.7 mgd capacity) and 8 miles of force mains that convey wastewater to the MWWTP.<sup>12</sup> The City's collection system connects with

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<sup>9</sup> East Bay Municipal Utility District, 2013c. *Water Treatment*. Website: [www.ebmud.com/our-water/water-quality/water-treatment-plants](http://www.ebmud.com/our-water/water-quality/water-treatment-plants) (accessed August 27, 2013).

<sup>10</sup> Ibid.

<sup>11</sup> East Bay Municipal Utility District, 2013c, op. cit.

<sup>12</sup> Ibid.

EBMUD's sewer interceptor system and transports sewage to the EBMUD MWWTP. The MWWTP provides both primary and secondary treatment of wastewater.

The MWWTP provides primary treatment for up to a peak flow of 320 mgd and secondary treatment for a maximum flow of 168 mgd.<sup>13</sup> In 2010, EBMUD treated domestic, commercial and industrial wastewater for 650,000 customers in the East Bay, and the average flow into the plant was 70 mgd.<sup>14</sup> Projected average dry weather flows of collected and treated wastewater discharged from the SD-1 service area is 74 mgd up to the year 2040.<sup>15</sup> Flows are treated, disinfected, dechlorinated, and discharged through a deep-water outfall (102-inch pipeline) one mile off the Easy Bay shore into the San Francisco Bay.<sup>16</sup> Currently, there are no planned improvements to the wastewater treatment plant that would affect treatment capacity.

**(3) Inflow/Infiltration.** EBMUD's system is currently unable to handle storm drainage from the communities where sewer pipes leak heavily during rainstorms. The issue of inadequate wet weather capacity has been particularly critical since 2009, when the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) issued an order prohibiting further discharges from EBMUD's wet weather facilities. EBMUD is currently conducting extensive flow modeling and hydraulic monitoring to determine the level of flow reduction that will be needed to comply with the Regional Water Board order. In the meantime, EBMUD is instructing lead agencies in the process of reviewing development projects to require such projects to implement the following improvements: 1) replace or rehabilitate existing sanitary sewer collection systems, including lateral sewer lines, to reduce infiltration and inflow, and 2) ensure that any new wastewater collection systems, including lateral sewer lines, are constructed to prevent infiltration and inflow to the maximum extent feasible. In 2011, EBMUD began working with State, federal and local agencies to focus on wet weather flows at the source, where City and EBMUD pipes would be inspected, cleaned and monitored.<sup>17</sup>

The City of Oakland's infiltration/inflow correction program consists of a 25-year capital improvement program to rehabilitate the existing system in cost-effective areas and add capacity where needed. This program anticipates a 20 percent growth rate throughout Oakland. Mitigation fees are assessed to all new development or redevelopment in sub-basins that have a growth rate greater than 20 percent. This fee represents the development's pro-rata share of the improvements identified by the 25-year plan in anticipation of the greater-than-20 percent development. The project site is located within sub-basins 50-03 and 50-08.

**c. Solid Waste and Recycling.** Waste Management of Alameda County (WMAC) collects non-hazardous waste within the City of Oakland and provides curbside pick-up for residential, commercial, and industrial non-hazardous waste. WMAC also offers debris box service for construction and demolition activities.

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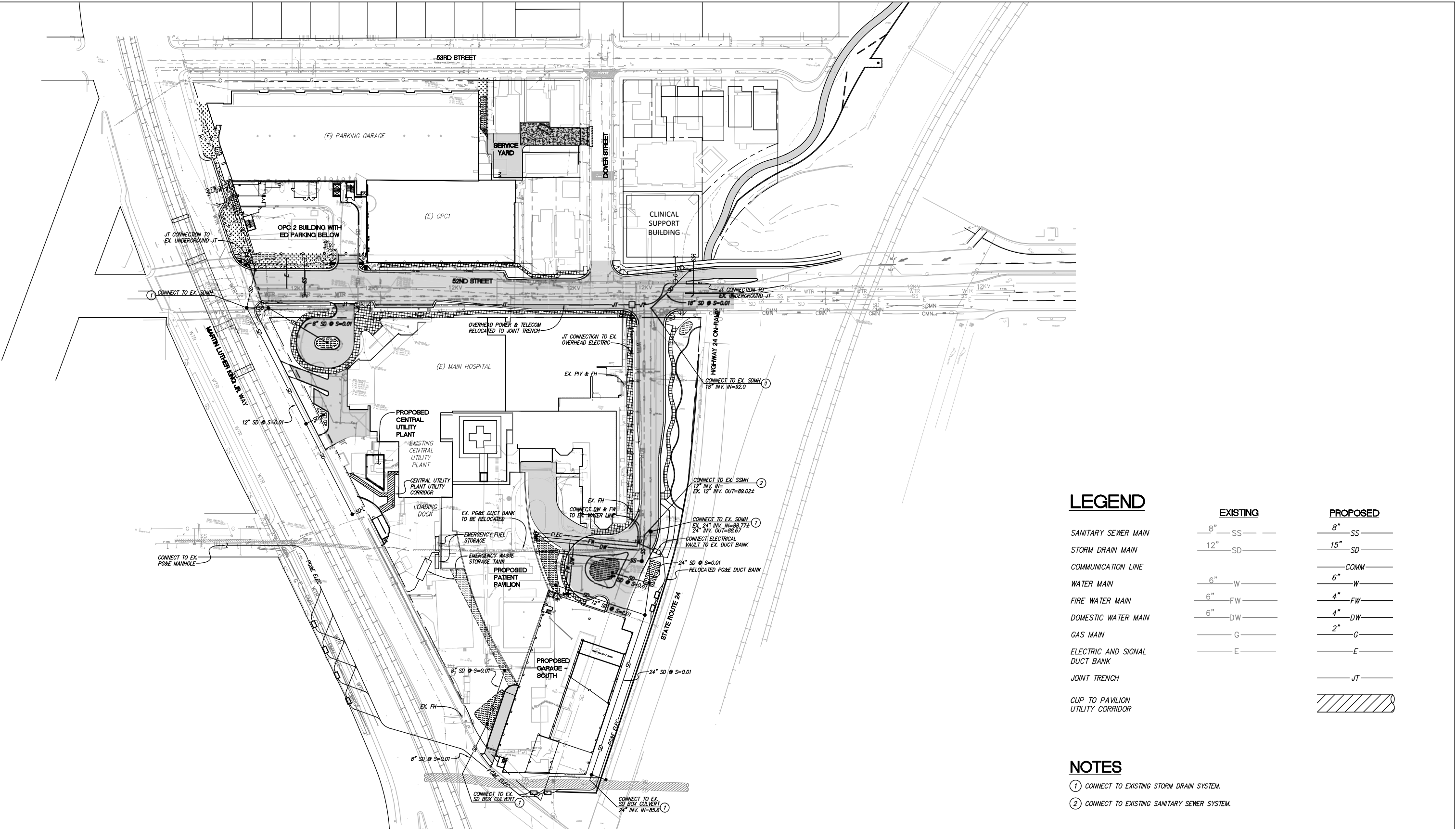
<sup>13</sup> Ibid.

<sup>14</sup> East Bay Municipal Utility District, 2013d. *All About EBMUD*. Website: [www.ebmud.com/resource-center/publications/fact-sheets](http://www.ebmud.com/resource-center/publications/fact-sheets) (accessed December 26, 2013).

<sup>15</sup> Ibid.

<sup>16</sup> Ibid.

<sup>17</sup> East Bay Municipal Utility District, 2013d, op. cit.



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FIGURE IV.K-1

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Non-hazardous solid waste is taken to the Davis Street Resource and Recovery Complex in San Leandro for processing, and then hauled to the Altamont Landfill and Resource Facility near the City of Livermore. The Davis Street facility has a permitted maximum daily throughput of 5,600 tons.<sup>18</sup> Demolition and construction debris is generally hauled by construction contractors to recycling facilities or the Vasco Road Landfill.

The Altamont Landfill facility has a total estimated capacity of 62 million cubic yards. As of 2000, it is estimated that approximately 16.3 million cubic yards, or 26 percent of the landfill's total capacity, was filled. The landfill has a permitted throughput of 11,500 tons per day<sup>19</sup> and is anticipated to have sufficient capacity until 2025, its expected closure date.<sup>20</sup>

The Vasco Road Landfill facility has a total estimated capacity of 33 million cubic yards. As of 2000, it is estimated that approximately 23 million cubic yards, or 70 percent of the landfill's total capacity, was filled. The landfill has a permitted throughput of 2,250 tons per day and is anticipated to have sufficient capacity until 2019, its expected closure date.<sup>21</sup>

In 2011, the City of Oakland disposed of approximately 292,298 tons (4.1 lbs/day per person, 10.0 lbs/day per employee) of solid waste at various disposal facilities, thereby meeting the recommended daily per-capita targets of 5.8 lbs/day per person, 15.3 lbs/day per employee established by California Department of Resources Recycling and Recovery (CalRecycle), formerly known as the California Integrated Waste Management Board.<sup>22</sup>

Recycling service at the project site is provided by Norcal Waste Services of Alameda, in compliance with the 2012 Mandatory Recycling Ordinance of Alameda County.<sup>23</sup> Recycling includes the following materials: glass, aluminum and tin, motor oil, cardboard, magazines and newsprint, and plastic. Recyclable materials are delivered to the Davis Street Transfer Center where they are processed. CHRCO currently recycles approximately 88 tons of mixed recyclable materials through the recycling and waste management program that it operates. About 44 tons of food waste, 1.1 tons of batteries, and 1 ton of fluorescent bulbs, are also recycled in addition to electronic waste and shredded paper materials.<sup>24</sup>

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<sup>18</sup> California Department of Resources Recycling and Recovery, 2014a. *Solid Waste Information System, Facility/Site Search*. Website: [www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx](http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx) (accessed September 19, 2013).

<sup>19</sup> Permitted throughput is the maximum permitted amount of waste a landfill can handle and dispose of in one day. This figure is established in the current solid waste facilities permit issued by CalRecycle.

<sup>20</sup> California Department of Resources Recycling and Recovery, 2014a. op. cit.

<sup>21</sup> Ibid.

<sup>22</sup> California Department of Resources Recycling and Recovery, 2014b. *Countywide, Regionwide, and Statewide Jurisdiction Diversion/Disposal Progress Report*. Website: [www.calrecycle.ca.gov/LGCentral/Reports/jurisdiction/diversiondisposal.aspx](http://www.calrecycle.ca.gov/LGCentral/Reports/jurisdiction/diversiondisposal.aspx) (accessed February 7, 2014).

<sup>23</sup> Recycling Rules Alameda County, 2012. *Mandatory Recycling Ordinance of Alameda County- Ordinance 2012-1*. Website: [www.recyclingrulesac.org/docs/ordinance\\_2012-1\\_mandatory\\_recycling-executed.pdf](http://www.recyclingrulesac.org/docs/ordinance_2012-1_mandatory_recycling-executed.pdf) (accessed February 12, 2014).

<sup>24</sup> Children's Hospital and Research Center Oakland, 2013. *Annual Recycling Report, January – December 2013*.

The California Department of Health Services (CDHS) is responsible for the licensing of the new acute care facility in addition to overseeing compliance with the Medical Waste Management Program (California Health and Safety Code Sections 117600-118360), which ensures the proper handling and disposal of medical waste. Medical waste generated at the existing CHRCO campus is disposed of and removed from the site in accordance with existing regulations and is collected by Stericycle and transported to the Autoclave Waste Landfill at Keller Canyon Landfill in Pittsburg.

**d. Electricity and Natural Gas.** The Pacific Gas & Electric Company (PG&E) provides electricity and natural gas service to the City of Oakland. PG&E charges connection and user fees for all new development, in addition to sliding rates for electrical and natural gas service based on use.

Gas supplies in northern California come primarily from gas fields in the Sacramento Valley.<sup>25</sup> The PG&E gas transmission pipeline system serves approximately 4.2 million gas customers in northern and central California. However, PG&E produces much of its energy from renewable sources and has plans in place to increase reliance on renewable energy sources. Of the energy provided to PG&E customers in 2010, approximately 16 percent came from renewable resources. In 2010, 24 percent of energy provided to PG&E customers came from nuclear generation; 23 percent was from unspecified sources; 20 percent was from natural gas; 16 percent was from large hydroelectric facilities; and 16 percent was from renewable resources (e.g., wind, geothermal, biomass, small hydroelectric sources, and solar); and less than 2 percent came from coal and other fossil fuels.<sup>26</sup> Because many agencies in California have adopted policies seeking increased use of renewable resources (and have established minimum standards for the provision of energy generated by renewable resources), it is expected that PG&E will continue to meet future demand for energy via an increasing reliance on renewable resources, including small-scale sources such as photovoltaic panels and wind turbines, in addition to larger-scale facilities, such as wind farms.

Regulatory requirements for efficient use of electricity and gas are contained in Title 24, Part 6, of the California Code of Regulations, entitled “Energy Efficiency Standards for Residential and Nonresidential Buildings.” These regulations specify the State’s minimum energy efficiency standards and apply to new construction of both residential and nonresidential buildings. The standards regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. Compliance with these standards is verified and enforced through the local building permit process.

HVAC (heating, ventilating and air conditioning) systems are currently housed in a central utility plant at the southwest corner of the main hospital. Included in the central utility plant is a chiller plant that is nearing the end of its useful life. Steam generators and two standby diesel generators are also located within this facility. A PG&E underground duct bank currently bisects the CHRCO campus, east to west, in the vicinity of 51<sup>st</sup> Street. Overhead utility lines are also present within the vicinity of the site.

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<sup>25</sup> Pacific Gas & Electric Company, 2012a. *2012 California Gas Report*. Website: [www.pge.com/pipeline/library/regulatory/cgr\\_index.shtml](http://www.pge.com/pipeline/library/regulatory/cgr_index.shtml) (accessed September 21, 2013). July.

<sup>26</sup> Pacific Gas & Electric Company, 2012b. *Clean Energy Solutions*. Website: [www.pge.com/mybusiness/environment/pge/cleanenergy/index.shtml](http://www.pge.com/mybusiness/environment/pge/cleanenergy/index.shtml) (accessed September 21, 2013)

**e. Telecommunications.** AT&T provides telephone services within the project area. AT&T also provides or hosts a variety of other telecommunication services, including Digital Subscriber Line (DSL), Internet Service Provider (ISP), web hosting, virtual private networking, U-verse, Multi-protocol Label Switching (MPLS), and wireless/cellular paging services.

The California Public Utilities Commission requires that AT&T anticipate and serve new growth. To meet this requirement, AT&T continually upgrades its facilities and infrastructure, adding new facilities and technology to remain in conformance with California Public Utilities Commission tariffs and regulations and to serve customer demand in the City.

Additions to the City's infrastructure and proposals for development would result in a need for expansion or changes to AT&T's infrastructure, which would involve suitable siting for equipment placement. Suitable sites must meet requirements for the physical transmission of telecommunication services and conform to the City's guidelines. AT&T also works with the City to ensure that construction of new facilities does not interfere with any new or newly paved streets.

**f. Regulatory Setting.** The following describes the State and local regulatory setting as it relates to utilities and infrastructure.

**(1) State Regulations.** The following State regulations apply to water supply and conservation; wastewater collection; solid waste disposal; and energy conservation and are applicable to the proposed project.

**Water Conservation in Landscaping Act (Assembly Bill 1881, 2006).** The Water Conservation in Landscaping Act of 2006 (Assembly Bill 1881, Laird) requires cities, counties, and charter cities and charter counties, to adopt landscape water conservation ordinances by January 1, 2010. Pursuant to this law, the Department of Water Resources (DWR) has prepared a Model Water Efficient Landscape Ordinance (Model Ordinance) for use by local agencies. Most new and rehabilitated landscapes are subject to a water efficient landscape ordinance. Public landscapes and private development projects including developer installed single family and multi-family residential landscapes with at least 2,500 square feet of landscape area are subject to the Model Ordinance. Homeowner provided landscaping at single-family and multi-family homes is subject to the Model Ordinance if the landscape area is at least 5,000 square feet. However, the ordinance does not apply to registered local, State or federal historic sites; ecological restoration projects; mined-land reclamation projects; or plant collections.

**Water Supply Consultation (Senate Bills 610/221).** Senate Bill (SB) 610, codified as Sections 10910-10915 of the California Public Resources Code, requires local water providers to conduct a water supply assessment for projects proposing over 500 housing units, 250,000 square feet of commercial office space (or more than 1,000 employees), a shopping center or business establishment with over 500,000 square feet (or more than 1,000 employees), or equivalent usage. Local water suppliers must also prepare or have already prepared an Urban Water Management Plan (UWMP) to guide planning and development in the water supplier's service area, and specifically pursue efficient use of water resources. Issuance of a water supply assessment determination by the local water supplier for a proposed project verifies that the supplier has previously considered a proposed project in its UWMP and has adequate capacity to serve a project in addition to its existing service commitments, or alternatively, measures that would be required to adequately serve the proposed project.

**Office of Statewide Health Planning and Development.** The Office of Statewide Health Planning and Development (OSHPD) is a department of the California Health and Human Services Agency. It serves as the building agency for hospitals and nursing homes in California, monitors the design and construction of inpatient facilities and assures code compliance in facility maintenance. OSHPD's primary goal in this regard is to ensure that patients in these facilities are safe in the event of an earthquake or other disaster, and that the facilities remain functional after such an event in order to meet the needs of the community affected by the disaster. OSHPD has no current regulations relative to sanitary sewer wastes. However starting in 2030, providing 72-hour service for both domestic water and sanitary sewer will be required for medical facilities under its purview. Phase 1 of the proposed project would not be subject to these requirements. Medical facilities developed as part of Phase 2 would be subject to and would conform to these requirements, including development of the Patient Pavilion, Link Building, and interior renovations.

**California Integrated Waste Management Act (AB 939).** In 1989, the California Legislature enacted the California Integrated Waste Management Act (AB 939), which requires the diversion of waste materials from landfills in order to preserve landfill capacity and natural resources. Cities and counties in California were required to divert 25 percent of solid waste by 1995, and 50 percent of solid waste by the year 2000. The City of Oakland met this requirement by diverting 52 percent of its waste in 2000.<sup>27</sup> AB 939 further requires every city and county to prepare two documents demonstrating how the mandated rates of diversion will be achieved. The Source Reduction and Recycling Element (SRRE) must describe the chief source of the jurisdiction's waste, the existing diversion programs, and current rates of waste diversion and new or expanded diversion programs. The Household Hazardous Waste Element (HHWE) must describe each jurisdiction's responsibility in ensuring that household hazardous wastes are not mixed with non-hazardous solid wastes and subsequently deposited at a landfill. Oakland's SRRE and its HHWE were approved in 1995 by CalRecycle.

**California Solid Waste Reuse and Recycling Access Act of 1991.** Public Resources Code Section 42900-42901, also known as the California Solid Waste Reuse and Recycling Access Act is part of the California Integrated Waste Management Act. In addition to the solid waste diversion requirements of AB 939, this legislation required the California Integrated Waste Management Board, on or before March 1, 1993, to adopt a model ordinance for adoption by a local agency, relating to adequate areas for collecting and loading recyclable materials in development projects, as defined. A local agency is required to adopt and enforce that model ordinance, if the local agency did not adopt an ordinance providing for that collection and loading, by September 1, 1994.

**Title 24 (California Building Standards) of the California Code of Regulations 2010 (CALGreen).** CALGreen is a Statewide regulatory code for all residential, commercial, hospital, and school buildings. The regulations are intended to encourage more sustainable and environmentally-friendly building practices, require low-pollution emitting substances that cause less harm to the environment, conserve natural resources, and promote the use of energy-efficient materials and equipment. Title 24 standards require that all new residential and non-residential development

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<sup>27</sup> California Department of Resources Recycling and Recovery, 2012a. *Jurisdiction Diversion/Disposal Rate Summary (1995 - 2006)*. Website: [www.calrecycle.ca.gov/LGCentral/reports/diversionprogram/JurisdictionDiversion.aspx](http://www.calrecycle.ca.gov/LGCentral/reports/diversionprogram/JurisdictionDiversion.aspx) (accessed December 28, 2013).

complies with several energy conservation standards through the implementation of various energy conservation measures, including ceiling, wall, and concrete slab insulation; vapor barriers; weather stripping on doors and windows; closeable doors on fireplaces; insulated heating and cooling ducts; water heater insulation blankets; and certified energy efficient appliances. CALGreen became mandatory on January 1, 2011, for new residential and commercial construction. Please refer to the regulatory framework subsection of Section IV.F, Greenhouse Gas Emissions, for a detailed discussion of Assembly Bill 32, and other energy-related State regulations.

**(2) City of Oakland Regulations.** The following City of Oakland regulations apply to utilities and service systems and are applicable to the proposed project.

**Oakland General Plan.** The Oakland General Plan contains the following policies that are relevant to the proposed project.

- Policy CO-4.1: Emphasize water conservation and recycling strategies in efforts to meet future demand.
- Policy CO-4.2: Require use of drought-tolerant plants to the greatest extent possible and encourage the use of irrigation systems which minimize water consumption.
- Policy CO-4.3: Promote the use of reclaimed wastewater for irrigating landscape medians, cemeteries, parks, golf courses, and other areas requiring large volumes of non-potable water.
- Policy N.12.4: Electrical, telephone, and related distribution lines should be underground in commercial and residential areas, except where special local conditions such as limited visibility of the poles and wires make this unneeded. They should also be underground in appropriate institutional, industrial, and other areas, and generally along freeways, scenic routes, and heavily traveled streets. Programs should lead systematically toward the eventual undergrounding of all existing lines in such places. Where significant utility extensions are taking place in these areas, such as in new subdivisions, utilities should be installed underground at the start.
- Policy CO-13.1: Promote a reliable local energy network which meets future needs and long-term economic development objectives at the lowest practical cost.
- Policy CO-13.3: Encourage the use of energy-efficient construction and building materials. Encourage site plans for new development which maximize energy efficiency.
- Policy CO-13.4: Accommodate the development and use of alternative energy resources, including solar energy and technologies which convert waste or industrial byproducts to energy, provided that such activities are compatible with surrounding land uses and regional air and water quality requirements.

**City of Oakland Zero Waste Strategic Plan.** The City of Oakland adopted a Zero Waste Goal in March 2004, and developed the Zero Waste Strategic Plan in November 2006. The main strategies outlined in the plan include: 1) expand and improve local and regional recycling and composting; 2) develop and adopt new rules and incentives to reduce waste disposal; 3) preserve land for sustainable development and green industry infrastructure; 4) advocate for manufacturer responsibility for produce waste, ban problem materials; and 5) educate, promote, and advocate a Zero Waste Sustainability Agenda.

**City of Oakland Construction and Demolition Debris Waste Reduction and Recycling Requirements.** The City of Oakland's construction and demolition debris waste reduction and recycling requirements (Municipal Code Chapter 15.34) are intended to further the goals of AB 939

and require a project applicant to prepare and submit a Construction and Demolition Debris Waste Reduction and Recycling Plan (WRRP) to divert at least 50 percent of all construction and demolition debris generated by project construction from landfill disposal. The WRRP is required to document the ways that the applicant will reduce the quantity of construction and demolition debris disposed at landfills by 50 percent or more. The City will not approve a building permit for a project until the WRRP is approved.

**City of Oakland Recycling Space Allocation Requirements (Planning Code Section 17.118).** Planning Code Section 17.118 prescribes standards to ensure consistency with the requirements of the California Solid Waste Reuse and Recycling Access Act of 1991, and to ensure the provision of adequate accessible, and convenient locations for the collection and storage of recyclable materials within containers and enclosures which are compatible with surrounding land uses and structures. Space allocated for recycling collection and storage areas within affected projects, such as the proposed project, is required to be provided in the amount of two cubic feet of storage and collection space per 1,000 square feet, or a portion thereof, of the total gross building square footage, with a minimum requirement that not less than 10 cubic feet be provided.

**g. City of Oakland's Standard Conditions of Approval.** The City's Standard Conditions of Approval relevant to utilities and infrastructure are listed below. The Conditions of Approval will be adopted as requirements of the proposed project if the project is approved by the City. SCA HYD-2, SCA HYD-3, SCA HYD-4, SCA GHG-1a, and GHG-1b also address storm drainage and sewer, and energy impacts and are listed in Sections IV.I, Hydrology and Water Quality and IV.F, Greenhouse Gas Emissions, respectively.

**SCA UTL-1: Waste Reduction and Recycling.** The project applicant will submit a Construction & Demolition Waste Reduction and Recycling Plan (WRRP) and an Operational Diversion Plan (ODP) for review and approval by the Public Works Agency.

*Prior to issuance of demolition, grading, or building permit*

Chapter 15.34 of the Oakland Municipal Code outlines requirements for reducing waste and optimizing construction and demolition (C&D) recycling. Affected projects include all new construction, renovations/alterations/modifications with construction values of \$50,000 or more (except R-3), and all demolition (including soft demo). The WRRP must specify the methods by which the development will divert C&D debris waste generated by the proposed project from landfill disposal in accordance with current City requirements. Current standards, FAQs, and forms are available at [www.oaklandpw.com/Page39.aspx](http://www.oaklandpw.com/Page39.aspx) or in the Green Building Resource Center. After approval of the plan, the project applicant shall implement the plan.

*Ongoing*

The ODP will identify how the project complies with the Recycling Space Allocation Ordinance, (Chapter 17.118 of the Oakland Municipal Code), including capacity calculations, and specify the methods by which the development will meet the current diversion of solid waste generated by operation of the proposed project from landfill disposal in accordance with current City requirements. The proposed program shall be implemented and maintained for the duration of the proposed activity or facility. Changes to the plan may be re-submitted to the Environmental Services Division of the Public Works Agency for review and approval. Any incentive programs shall remain fully operational as long as residents and businesses exist at the project site.

**SCA UTL-2: Underground Utilities.** *Prior to issuance of a building permit*

The project applicant shall submit plans for review and approval by the Building Services Division and the Public Works Agency, and other relevant agencies as appropriate, that show all new electric and telephone facilities; fire alarm conduits; street light wiring; and other wiring, conduits, and similar facilities placed underground. The new facilities shall be placed underground along the project applicant's street frontage and from the project applicant's structures to the point of service. The plans shall show all electric, telephone, water service, fire water service, cable, and fire alarm facilities installed in accordance with standard specifications of the serving utilities.

**SCA UTL-3: Improvements in the Public Right-of-Way (General).** *Approved prior to the issuance of a P-job or building permit*

- a) The project applicant shall submit Public Improvement Plans to Building Services Division for adjacent public rights-of-way (ROW) showing all proposed improvements and compliance with the conditions and/or mitigations and City requirements including but not limited to curbs, gutters, sewer laterals, storm drains, street trees, paving details, locations of transformers and other above ground utility structures, the design specifications and locations of facilities required by the East Bay Municipal Utility District (EBMUD), street lighting, on-street parking and accessibility improvements compliant with applicable standards and any other improvements or requirements for the project as provided for in this Approval. Encroachment permits shall be obtained as necessary for any applicable improvements- located within the public ROW.
- b) Review and confirmation of the street trees by the City's Tree Services Division is required as part of this condition and/or mitigations.
- c) The Planning and Zoning Division and the Public Works Agency will review and approve designs and specifications for the improvements. Improvements shall be completed prior to the issuance of the final building permit.
- d) The Fire Services Division will review and approve fire crew and apparatus access, water supply availability and distribution to current codes and standards. New flow tests or hydraulic simulations will be conducted by EBMUD to verify availability of adequate water supplies and distribution infrastructure to maintain minimum fire flow standards and to serve the new structures (which may require more than the minimum due to the size of the proposed buildings). In addition, the Fire Services Division will review the final site plans and fire flow testing to be conducted at the site to confirm that adequate firefighting infrastructure is installed at the site prior to approval of final construction plans.

**SCA UTL-4: Improvements in the Public Right-of Way (Specific).** *Approved prior to the issuance of a grading or building permit*

Final building and public improvement plans submitted to the Building Services Division shall include the following components: Examples include:

- a) Install additional standard City of Oakland streetlights.
- b) Remove and replace any existing driveway that will not be used for access to the property with new concrete sidewalk, curb and gutter.
- c) Reconstruct drainage facility to current City standard.
- d) Provide separation between sanitary sewer and water lines to comply with current City of Oakland and Alameda Health Department standards.
- e) Construct wheelchair ramps that comply with Americans with Disability Act requirements and current City Standards.

- f) Remove and replace deficient concrete sidewalk, curb and gutter within property frontage.
- g) Provide adequate fire department access and water supply, including, but not limited to currently adopted fire codes and standards.

**SCA UTL-5: Payment for Public Improvements.** *Prior to issuance of a final inspection of the building permit*

The project applicant shall pay for and install public improvements made necessary by the project including damage caused by construction activity.

## **2. Impacts and Mitigation Measures**

This section discusses potential impacts to utilities and infrastructure that could result from implementation of the proposed project. The section begins with the significance thresholds, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate.

**a. Thresholds of Significance.** Implementation of the proposed project would have a significant effect on utilities and infrastructure if it would:

- (1) Exceed water supplies available to serve the project from existing entitlements and resources, and require or result in construction of water facilities or expansion of existing facilities, construction of which could cause significant environmental effects;
- (2) Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the providers' existing commitments and require or result in construction of new wastewater treatment facilities or expansion of existing facilities, construction of which could cause significant environmental effects;
- (3) Exceed wastewater treatment requirements of the San Francisco Bay Regional Water Quality Control Board;
- (4) Require or result in construction of new storm water drainage facilities or expansion of existing facilities, construction of which could cause significant environmental effects;
- (5) Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs and require or result in construction of landfill facilities or expansion of existing facilities, construction of which could cause significant environmental effects;
- (6) Violate applicable federal, State, and local statutes and regulations related to solid waste;
- (7) Result in a determination by the energy provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the providers' existing commitments and require or result in construction of new energy facilities or expansion of existing facilities, construction of which could cause significant environmental effects; or
- (8) Violate applicable federal, State and local statutes and regulations relating to energy standards.



**b. Project Impacts.** The following discussion describes the potential impacts to utilities and infrastructure that would result from implementation of the proposed project. Although impacts associated with Phase 1 and 2 are described separately below, less than significant impacts identified under both phases would generally be similar, although the increase in demand for utility services associated with project build out (completion of Phase 2) would be somewhat greater. The impact discussion below therefore primarily focuses on build out of the proposed project and the analysis is primarily contained under the Phase 2 impact discussion.

**(1) Water Supply and Infrastructure.** Potential impacts to water supply, distribution and treatment for Phase 1 and Phase 2 development are described below. The analysis is however primarily contained under the Phase 2 impact discussion.

**Phase 1 Impacts.** Based upon anticipated uses within the project site, new construction completed as part of Phase 1 would generate a net increase in demand of 28,187 gpd of water. (The detailed calculations for Phase 1 and Phase 2 water demand are included in Appendix H). However, the analysis of water supply generally focuses on build out of the proposed project. As discussed below, new construction completed as part of Phase 2 is expected to generate a net increase in demand of 129,512 gpd of water. Refer to the Phase 2 impact discussion below for a complete discussion of this impact. The total net increase in demand generated by the project would be 157,700 gpd. As such, implementation of Phase 1 would generate only about 18 percent of the total net increase in demand at build out. As discussed below, adequate water supplies are available to serve the proposed project at build out; therefore, adequate water supplies are available to serve Phase 1 of the proposed project. Thus, water supply impacts related to Phase 1 would be less than significant. In addition, as discussed below, project build out would not require expansion of the existing water treatment system, thus this impact is also less than significant for Phase 1 development.

The Oakland Fire Department maintains a minimum fire flow standard of 1,500 gallons per minute (gpm). It is expected that for Phase 1, minimum water flow would be available within the project site without a major upgrade of water lines. As discussed in more detail below under Phase 2, the project would be subject to SCA UTL-2, UTL-3, UTL-4 and UTL-5 regarding improvements to existing water infrastructure, improvements within the public right-of-way and payment for public improvements.

The draft landscape plan for Phase 1 includes bio-filtration planting areas and the planting of native ornamental shrubs and ground cover around OPC2 and along 52<sup>nd</sup> Street in front of OPC1. The combined draft landscape plan for Phases 1 and 2 is shown in Figure III-20 in Chapter III, Project Description. Implementation of water conserving fixtures and drought-tolerant landscaping would further ensure Phase 1's water impacts would be less than significant.

**Phase 2 Impacts.** As previously discussed, California Senate Bill 610 (SB 610) requires that water retailers demonstrate whether their water supplies are sufficient to meet the projected demand of certain large development projects. Build out of the project would result in the demolition of a total of 66,582 square feet of existing uses and construction of a total of 399,200 square feet of new building area, for a total of 332,618 square feet of net new building area. Therefore, the proposed project meets the threshold requirement for an assessment of water supply availability based on the

projected increase in demand for water and increase in floor space, which is over the 250,000-square-foot threshold. As such, at the City of Oakland's request, EBMUD has provided a Water Supply Assessment (WSA)<sup>28, 29</sup> for the proposed project (see Appendix H).

Current water consumption at the existing CHRCO campus is approximately 227,395 gallons per day (gpd). New construction completed as part of Phase 2 (i.e., at build out) is expected to generate a net increase in demand of 129,512 gpd. (The detailed calculations for Phase 1 and Phase 2 water demand are included in Appendix H). The total net increase in demand generated by the proposed project at build out would be 157,700 gpd.

Per the WSA prepared for the project, the anticipated daily water demand that would result from the proposed project is accounted for in EBMUD's water demand projections as published in EBMUD's 2010 Urban Water Management Plan.<sup>30</sup> EBMUD's water demand projections account for anticipated future water demands within EBMUD's service boundaries and for variations in demand-attributed changes in development patterns and is consistent with EBMUD's demand projections that indicate increased densities associated with these types of land uses.<sup>31</sup> Therefore, adequate water supplies are available to serve the proposed project at buildout and impacts to the water supply would be less than significant.

Existing water treatment capacity at the Orinda Water Treatment Plant is 200 mgd, and the anticipated daily water demand that would result from implementation of the proposed project at build out represents less than 0.001 percent of the treatment capacity of the facility. Sufficient water treatment capacity exists within the EBMUD system to accommodate water demand generated by the proposed project. Therefore, implementation of the proposed project would not require expansion of the existing water treatment system.

The Oakland Fire Department maintains a minimum fire flow standard of 1,500 gallons per minute (gpm). As part of Phase 2, a private roadway would extend from Dover Street south of 52<sup>nd</sup> Street to provide access to the proposed Patient Pavilion entrance and drop-off, and the parking structure. The Oakland Fire Department's preliminary review of the project indicated that an existing on-site fire hydrant (Hydrant 2777) located within 200 feet of the terminus of Dover Street is not currently

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<sup>28</sup> Kirkpatrick, William, 2013. Manager of Water Distribution Planning Division, East Bay Municipal Utilities District. Written communication to Heather Klein, Planner III, Department of Planning and Building, City of Oakland. *Water Supply Assessment - Children's Hospital and Research Center Oakland Master Plan Project*. October 8.

<sup>29</sup> Kirkpatrick, William, 2014. Manager of Water Distribution Planning Division, East Bay Municipal Utilities District. Written communication to Heather Klein, Planner III, Department of Planning and Building, City of Oakland. *Satisfaction of Water Supply Assessment for the Children's Hospital and Research Center Oakland Campus Master Plan Project*. April 4.

<sup>30</sup> The letter requesting the WSA was sent on July 31, 2013 and EBMUD completed the WSA on October 8, 2013; the water demand calculations were based on the April 2013 proposed project. As noted in Chapter I., Introduction, the project was revised in October 2013 and revisions to the project included a larger Link Building to accommodate the helistop and the removal of improvements on the CHORI campus. The October 2013 project would demand approximately 5,700 gpd more than the April 2013 project (an approximately 3.75 percent increase over the April 2013 water demand). EBMUD has confirmed in their letter dated April 4, 2014 that, similar to the April 2013 project, the October 2013 project would be served by existing water supplies.

<sup>31</sup> Kirkpatrick, William, 2013. op. cit.

sufficiently served by adequate fire flows necessary to serve the new development.<sup>32</sup> In addition, EBMUD Map 1888-B-490 shows that the existing water supply does not currently provide the minimum required fire flow to the area.<sup>33</sup> New flow tests or hydraulic simulations would be required to be conducted by EBMUD to verify availability of adequate water supplies and distribution infrastructure to maintain minimum fire flow standards and to serve the new structures (which may require more than the minimum due to the size of the proposed buildings). Per SCA UTL-3, the City's Fire Department will review the final site plans and fire flow testing conducted at the site to confirm that adequate fire-fighting infrastructure is installed at the site prior approval of final construction plans.

The City's master planning for the distribution system that conveys potable water to customers takes into account future demand projected in the *Urban Water Management Plan*. As per SCAs UTL-2 and UTL-3, adequate capacity of existing water mains to accommodate increased demand generated by the proposed project would be assessed prior to approval of final construction plans. Additionally, minimum fire flow requirements (for the purposes of fighting fires) would be more fully assessed at the time of project construction (per SCA UTL-3). If line improvements are required due to the age and condition of the existing lines, infrastructure upgrades would be made during the project construction period and would not be anticipated to result in significant environmental impacts. Increased water deliveries to the project site are not anticipated to require additional storage or pumping capacity within the greater water delivery system and are expected to be contained on-site. As such, the proposed project would have a less-than-significant impact on water distribution infrastructure.

Since the proposed project's additional water demand would be served by EBMUD and would not exceed EBMUD treatment capacity or the capacity of the greater water supply distribution system, the project would have a less-than-significant impact on water services. The project would be subject to SCA UTL-2, UTL-3, UTL-4 and UTL-5 regarding improvements to existing water infrastructure, improvements within the public right-of-way and payment for public improvements.

All work permitted by the City of Oakland would be designed to meet the City's Green Building Ordinance as well as the State CalGreen requirements; buildings constructed under Phase 2 subject to these standards would include: Family Residence Building (Green Point Rated) and the Clinical Support Building (LEED Silver certification). All inpatient services permitted by OSHPD would follow State CalGreen requirements; buildings under Phase 2 subject to these standards would include the Link Building and the Patient Pavilion. The proposed project would be outfitted with water-conserving fixtures, such as low-flow faucets, toilets and urinals, and showerheads, as required by the Uniform Building Code and CalGreen. In addition, Bay-friendly and native landscaping planted at the site would reduce water use for irrigation; water efficient irrigation systems would be utilized. The project site is located outside the service boundaries of any of EBMUD's currently planned water recycling projects. As such, EBMUD has no plans to serve recycled water to the project area in the

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<sup>32</sup> Basada, Philip, 2013. Engineer, Oakland Fire Department, Fire Prevention Bureau. Written communication to Heather Klein, Planner III, Department of Planning and Building, City of Oakland. 744 Martin Luther King Jr. Way-Children's Hospital and Research Center-Entitlements Zoning Pre Application, Predevelopment Plans- Fire truck access and water supply. May 12.

<sup>33</sup> Ibid.

near future.<sup>34</sup> The draft landscape plan for Phase 2 includes planting of native ornamental shrubs and ground cover around much of the site. Streetscape planting and street trees are proposed in areas along Dover Street and along 52<sup>nd</sup> Street. Bio-filtration planting areas are also proposed along Dover Street and throughout the CHRCO campus. The combined draft landscape plan for Phases 1 and 2 is shown in Figure III-20 in Chapter III, Project Description. Installation of these water conserving fixtures and drought-tolerant landscaping, and compliance with Model Water Efficient Landscape Ordinance, would further ensure that the project's water impacts would be less than significant.

**(2) Wastewater Collection and Infrastructure.** Potential impacts related wastewater generation and collection for Phase 1 and Phase 2 development are described below.

**Phase 1 Impacts.** The City of Oakland has an infiltration/inflow correction program that consists of a 25-year capital improvement program to rehabilitate the existing sanitary sewer line system, which will size the City's wastewater collection system to accommodate an anticipated 20 percent growth rate throughout Oakland. The project is located in the City's sewer sub-basins 50-03 and 50-08. Each sub-basin has a projected allocation for base flow increase based on an anticipated growth rate during the period of the inflow and infiltration collection maintenance and rehabilitation program. Growth (base flow increase) within each sub-basin must not exceed projections. If exceeded, the impact of the additional growth must be analyzed within the entire City collection and trunk system and additional system improvements could be required. If redirection of allocation from other sub-basins is needed to accommodate a development project, further review and approval from the City would be required in order to determine locations and the amount of potential reallocation. If growth does not exceed projections within each sub-basin, then impact analysis may be limited to the study of local mains serving the development site.

Currently, the CHRCO campus generates approximately 193,916 gpd of wastewater. Based on wastewater generation numbers provided by the City of Oakland *Sanitary Sewer Design Guidelines*, new construction completed as part of Phase 1 would generate a net increase in wastewater of 24,092 gpd. (The detailed calculations for Phase 1 and Phase 2 wastewater generation are included in Appendix H). This increase would bring the total wastewater generated at the site after completion of Phase 1 to 218,008 gpd, for an approximately 12.5 percent increase over existing conditions. Because Phase 1 would not exceed the 20 percent growth rate, it can be assumed that sufficient system-wide conveyance and treatment capacity is available to accommodate the increased wastewater generated by Phase 1.

The existing sanitary sewer lines located under existing streets would continue to serve the CHRCO campus. New sanitary sewer infrastructure would be designed in accordance with the City's *Sanitary Sewer Design Guidelines*, and would adhere to accepted engineering principals. New sanitary sewer connections at build out are shown in **Figure IV.K-1**. The proposed project does not propose any major replacement of or improvements to existing sanitary sewer lines. The City has confirmed that there is available capacity to serve Phase 1 development.<sup>35</sup> Therefore, Phase 1 impacts to wastewater infrastructure would be less than significant.

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<sup>34</sup> Ibid.

<sup>35</sup> Santoso, Gunawan 2014. Civil Engineer, Bureau of Engineering and Construction, City of Oakland, Oakland Public Works. Written communication to Heather Klein, Planner III, Bureau of Planning, City of Oakland. May 2.

**Phase 2 Impacts.** Currently, the CHRCO campus generates approximately 193,916 gpd of wastewater. New construction completed as part of Phase 2 would generate a net increase of 110,694 gpd. (The detailed calculations for Phase 1 and Phase 2 wastewater generation are included in Appendix H). The total net increase in wastewater generated by the proposed project (i.e., at build out) would be 134,786 gpd. This increase would bring the total wastewater generated at the site at build out to 328,702 gpd, or about a 70 percent increase over existing conditions. There is currently not enough capacity within the sub basin to serve Phase 2 development.<sup>36</sup> SCA HYD-4 requires that the project applicant evaluate the capacity needs of the sewer basin and construct the necessary sewer infrastructure improvements required to serve the project. Implementation of SCA HYD-4 would be required to ensure that the proposed project does not exceed the capacity of the system and that this impact would be less than significant.

Similar to the discussion above under Phase 1 impacts, compliance with the City's *Sanitary Sewer Design Guidelines* and implementation of SCA HYD-4 would ensure that potential impacts to the wastewater collection system at project build out would be less than significant. Therefore, impacts related to wastewater generation, collection and treatment would be less than significant.

**(3) Wastewater Treatment.** Potential impacts related wastewater treatment capacity for Phase 1 and Phase 2 development are described below.

**Phase 1 Impacts.** As previously discussed, new construction completed as part of Phase 1 would generate a net increase in wastewater of 24,092 gpd. Wastewater generated by Phase 1 development would represent less than 0.001 percent of the WWTP's primary treatment capacity and would be accommodated by the existing MWWTP, which is currently operating at 21 percent of its primary treatment capacity and 48 percent of the total secondary treatment capacity. Therefore, wastewater generated by the proposed project would be subject to both primary and secondary treatment and would not violate the wastewater treatment requirements of the Regional Water Board.

**Phase 2 Impacts.** As previously discussed, new construction completed as part of Phase 2 would generate a net increase in wastewater of 110,694 gpd. The total net increase in wastewater generated by the proposed project (i.e., at build out) would be 134,786 gpd. Wastewater generated by the proposed project would represent less than 0.001 percent of the WWTP's primary treatment capacity and would be accommodated by the existing MWWTP, which is currently operating at 21 percent of its primary treatment capacity and 48 percent of the total secondary treatment capacity. Therefore, wastewater generated by the proposed project would be subject to both primary and secondary treatment and would not violate the wastewater treatment requirements of the Regional Water Board.

**(4) Stormwater Drainage Infrastructure.** Please refer to Section IV.I, Hydrology and Water Quality for a discussion of potential impacts to the City's storm drain system. As discussed, the applicant would be required to comply with requirements of the City's Standard Stormwater and Sewer Condition of Approval (SCA HYD-4) to control or minimize any increases in infiltration or inflow to the stormwater and sanitary sewer system. Other City stormwater requirements, such as

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<sup>36</sup> Ibid.

preparation of a Post-Construction Stormwater Pollution Management Plan (SCA HYD-2), require sizing of stormwater detention and treatment measures to ensure that runoff volumes are not increased over existing conditions. Requirements for a Maintenance Agreement for Stormwater Treatment Measures (SCA HYD-3) would ensure that these measures are maintained throughout the life of the proposed project.

Under these requirements, drainage from the proposed improvements would not exceed the capacity of the downstream drainage system. Grading and stormwater pollution management plans must be reviewed for compliance with these requirements by the City's Community and Economic Development Agency, Building Services Division, Engineering Permit Department. Any improvements to the storm drainage system deemed necessary by the City of Oakland, including construction of or improvements to stormwater conveyances, must be part of the conditions of approval for development. These measures would require participation in the necessary stormwater and sanitary sewer infrastructure improvements to accommodate the proposed project. Therefore, the proposed project is not anticipated to require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; this impact would be less than significant.

**(5) Landfill Capacity.** Potential impacts related to landfill capacity for Phase 1 and Phase 2 development are described below. The analysis is however primarily contained under the Phase 2 impact discussion.

**Phase 1 Impacts.** The accommodation of an additional 43 patients and outpatient visitors and 25 employees and the temporary reduction in the number of hospital beds with Phase 1 development would not result in significant amounts of waste generation that could not be accommodated by existing landfill capacity and this impact would be less than significant. See discussion of Phase 2 below for a complete evaluation of solid waste impacts at project build out.

**Phase 2 Impacts.** According to the CalRecycle, the average employee generates 9.6 pounds of waste per day.<sup>37</sup> In addition, the average hospital generates about 16 pounds per bed per day.<sup>38, 39</sup> Although solid waste generation rates can vary substantially by geographic locality or type of industry, these City-wide average waste generation rates can be used to approximate the amount of waste that would be generated by the proposed project.

Based on the above waste generation rates, it is estimated that with an existing total of 2,166 employees and 170 on-site beds, existing CHRCO facilities generate approximately 23,515 pounds per day (20,795 pounds per day for employees and 2,720 pounds per day for hospital beds), or 11.75 tons per day (4,289 tons per year) of waste that is transported to the landfill. This does not include the approximate 88 tons per year of recyclable materials that CHRCO diverts as part of its recycling program.

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<sup>37</sup> CalRecycle, 2013. *Profile for City of Oakland*. Website: [www.calrecycle.ca.gov/LGCentral/Reports/OnLineDisposalRateCalc.aspx?ReportingEntityID=1344&ReportYear=2012&Mode=View](http://www.calrecycle.ca.gov/LGCentral/Reports/OnLineDisposalRateCalc.aspx?ReportingEntityID=1344&ReportYear=2012&Mode=View) (accessed September 10, 2013).

<sup>38</sup> CalRecycle, 2013. *Public Sector and Institutions: Estimated Solid Waste Generation Rates*. January 14.

<sup>39</sup> This rate is assumed to be inclusive of associated visitors and in- and out-patients.

With development of Phase 2 (i.e., project build out), the total number of employees would increase by 205 persons for a total of 2,371 employees. The total number of beds would increase by 40 beds to a total of 210 beds (with a resulting increase of 113 patients and outpatient visitors and 157 outpatient visitors). Based on the above waste generation rates, it is assumed that build out of the proposed project would result in an increase of approximately 2,608 pounds per day (1,968 pounds per day per employee and 640 pounds per day per bed), or 1.3 tons per day (474.5 tons per year) of waste transported to the landfill, for an overall 11 percent increase over existing conditions.<sup>40</sup>

As previously discussed, the Davis Street Transfer Center has a maximum capacity of 5,600 tons of waste per day. The 1.3-ton per day increase in waste generation resulting from the proposed project represents less than 0.02 percent of the total capacity of the Davis Street Transfer Center. In addition, the Altamont Landfill has a permitted daily throughput of 11,500 tons per day and the projected increase in waste generated by the project would be less than 0.01 percent of this landfill's permitted daily capacity. The anticipated life of the Altamont landfill would not be significantly reduced by implementation of the proposed project. In addition, the Vasco Road Landfill is currently expected to close in 2019; however, if this landfill is still operating with sufficient capacity at project build out, it is not expected that the project would contribute to reduced landfill capacity. Therefore, the proposed project would be adequately served by existing landfill capacity and this impact would be less than significant.

**(6) Solid Waste Regulations.** Development of both Phase 1 and Phase 2 would be subject to applicable solid waste disposal and recycling regulations. Specifically, demolition activities associated with the removal of existing structures, paved asphalt areas, and utilities would be subject to City of Oakland waste reduction and recycling requirements. Compliance with the City's Waste Reduction and Recycling Standard Condition of Approval (see SCA UTL-1) and the Oakland Municipal Code Chapter 15.34, which requires implementation of a Recycling and Waste Reduction Plan for construction and demolition activities, would reduce the amount of waste generated during the construction phase of the proposed project. As such, demolition and construction activities associated with the project would not substantially affect the remaining capacity of the Davis Street Transfer Station or the Altamont Landfill (the capacity of these facilities is discussed above). Therefore, the proposed project would comply with existing regulations that apply to demolition and construction waste and would be served by landfills with the capacity to handle solid wastes generated by these activities.

Norcal Waste Service of Alameda currently provides recycling and green waste services to the project site. CHRCO currently diverts approximately 88 tons per year (or 0.24 tons per day) of recyclable materials and other waste (e.g., food waste) from the landfill. Implementation of SCA UTL-1 would ensure that the project provides adequate space for recycling facilities, pursuant to the City's Recycling Space Allocation Ordinance. The Alameda County Waste Management Authority passed the Alameda County Landfill Ban in 2009 which prohibits the disposal of plant debris in county landfills. Plant debris includes grass, leaves, shrubbery, vines and tree branches. These materials are collected by Norcal Waste and are converted to compost.

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<sup>40</sup> This number does not account for recyclable materials diverted as part of CHRCO's recycling program.

Medical waste generated at the existing CHRCO campus is removed from the site and disposed of in accordance with existing regulations; it is collected by Stericycle and transported to the Autoclave Waste Landfill at Keller Canyon Landfill in Pittsburg. The proposed project and new medical facilities would continue to comply with regulations that govern the disposal of medical waste.

Project compliance with applicable construction and operation period recycling and waste reduction regulations and solid waste disposal requirements would ensure that proposed project would not violate any federal, State, or local statutes and regulations related to solid waste and this impact would be less than significant.

**(7) Energy Demand.** Potential impacts related to energy and telecommunications for Phase 1 and Phase 2 development are described below.

**Phase 1 Impacts.** While implementation of Phase 1 would result in an incremental increase in demand for gas and electrical energy, the proposed project includes improvements to reduce energy consumption as further addressed in Section IV.F, Greenhouse Gas Emissions. These measures and new utility connections are summarized below.

In general, as part of Phase 1 development, new normal power service for OPC2 would be provided via a PG&E transformer located on the ground floor, with the transformer primary tied into PG&E's underground line on Martin Luther King Jr. Way. A new 600kW standby diesel generator would be located within a generator room on the ground floor of OPC2, to serve OPC2 emergency loads. OPC2 would be designed to meet LEED (Leadership in Energy and Environmental Design) Silver certification levels for LEED Healthcare, 2009. The existing high temperature water boilers located in the Central Utility Plant would be retained and would continue to serve all of the existing buildings and initial Phase 1 renovation projects. Additionally, two condensing water boilers (N+1), 4 million btu/hr output each, would be added in the existing chiller plant providing a total of 12 million btu/hr heating plant capacity for space heating (2 existing boilers at 4 million Btu/hr each and 1 new boiler at 4 million Btu/hr). The heating water system would be configured as primary and variable secondary configuration and would have new distribution pumps. The existing high temperature water boilers would be retrofitted and would operate as low temperature heating water boilers to reduce energy consumption. Phased construction would need to be designed and planned to allow conversion of the high temperature boilers to low temperature heating water loop due to lower pressure rating components. New heating water boilers would be forced draft gas and fuel oil fired and comply with Bay Area Air Quality Management District (BAAQMD) requirements and energy efficiency standards.

As noted in SCA UTL-2, all new electric and telephone facilities, fire alarm conduits, street light wiring, and other wiring shall be placed underground along the project applicant's street frontage and from the project applicant's structures to the point of service. Final utility plans would be required to show all electric, telephone, water service, fire water service, cable, and fire alarm facilities installed in accordance with standard specifications of the serving utilities.

Overall, the level of public energy required to serve the proposed project would not be expected to violate applicable federal, State, or local statutes and regulations relating to energy standards or exceed PG&E's service capacity or require new or expanded facilities. The proposed project would be required to comply with all standards established by OSHPD for hospital buildings, and all other buildings would be subject to the standards of Title 24 of the California Code of Regulations. In addition, improvements to and extensions of existing PG&E infrastructure required to accommodate



the proposed project would be determined in consultation with PG&E prior to installation. In addition, the California Public Utilities Commission requires that AT&T anticipate and serve new growth. To meet this requirement, AT&T continually upgrades its facilities and infrastructure, adding new facilities and technology to remain in conformance with California Public Utilities Commission tariffs and regulations and to serve customer demand in the City. As a result, the proposed project would result in a less than significant impact related to energy and telecommunications.

**Phase 2 Impacts.** While implementation of Phase 2 would result in an incremental increase in demand for gas and electrical energy, the proposed project includes improvements to reduce energy consumption as further addressed in Section IV.F, Greenhouse Gas Emissions. These measures and new utility connections are summarized below.

Phase 2 development would include a new 3,800 square foot Central Utility Plant which would serve the new Link Building and Patient Pavilion. Normal power service for the Phase 2 Patient Pavilion would be derived from the existing primary PG&E service at the existing central utility plant. A 4-inch, 12kV feeder would be extended via underground concrete-encased ductbank from existing switchgear HV to a new unit substation to serve the Patient Pavilion. Existing CHRCO facilities currently utilize four standby emergency generators on-site. A new 1,500 kW standby diesel generator would be provided to serve the HVAC loads and the Patient Pavilion essential loads. The existing 131 kW standby diesel generator outside of the Bruce Lyon Memorial Research Building would be removed. All new generators would be permitted by the BAAQMD and would comply with energy efficiency standards.

In addition, a PG&E underground duct bank currently bisects the campus, east to west, in the vicinity of 51<sup>st</sup> Street. As part of Phase 2, this duct bank would be relocated to the campus boundary. On the southeastern side of the campus, it would parallel State Route 24 to the south then extend west to Martin Luther King Jr. Way where it would connect to the existing PG&E manhole at 51<sup>st</sup> Street. Existing PG&E duct banks located within the existing Caltrans right-of-way would also be relocated to the new edge of the CHRCO property if this property is acquired.

Similar to the discussion provided above under Phase 1, implementation of SCA UTL-2 would be required to ensure that impacts related to electric, telephone, water service, fire water service, cable, and fire alarm facilities would be installed in accordance with standard specifications of the serving utilities. In addition, the level of public energy required to serve the proposed project would not be expected to exceed PG&E's service capacity or require new or expanded facilities. The project would include energy reduction measures where feasible, including the possible use of solar panels. As a result, the proposed project would result in a less than significant impact related to energy and telecommunications.

**(8) Energy Regulations.** The proposed project would be subject to Title 24, California's Energy Efficiency Standards for Commercial development and would comply with all standards established by OSHPD for hospital buildings. The level of public energy required to serve the proposed project would not be expected to violate applicable federal, State, or local statutes and regulations relating to energy standards or exceed PG&E's service capacity or require new or expanded facilities. Therefore this impact would be less than significant.

**c. Cumulative Impacts.** Cumulative impacts related to water supply and distribution, wastewater, solid waste, and energy and telecommunications are discussed below. A description of the geographic area applicable to cumulative utility and infrastructure is also provided.

**(1) Water Supply and Distribution.** The geographic area considered for cumulative water supply impacts is the planning area for EBMUD as it is the water district that serves the City of Oakland and many other East Bay cities. EBMUD accounted for water demands associated with the project within the 2010 Urban Water Management Plan (UWMP) and has verified through a Water Supply Assessment that adequate supplies are available to serve the project. The UWMP includes an analysis of past, present, pending, and reasonably foreseeable future development projects based on the Association of Bay Area Government's (ABAG's) Projections 2009. Based on the ABAG Projections, the UWMP acknowledges that Oakland is continuing to see revitalization throughout the City and additional redevelopment is forecasted, with the City of Oakland accounting for the largest share of Alameda County's household growth. The UWMP assumes that over 100,000 persons will be added to Oakland between 2000 and 2035 and plans to supply water for such growth. The proposed project would not result in a considerable contribution to a cumulatively significant impact related to water supply or distribution.

**(2) Wastewater.** The geographic area considered for the wastewater treatment cumulative analysis is the City of Oakland as the City owns, operates, and maintains the wastewater collection system. The project site is located within Sub-basins 50-03 and 50-08. The City of Oakland has an infiltration/inflow correction program that consists of a 25-year capital improvement program to rehabilitate the existing sanitary sewer line system, which will size the City's wastewater collection system to accommodate an anticipated 20 percent growth rate throughout Oakland. Per SCA HYD-4, the project applicant would be required to ensure that the project can be served by existing wastewater infrastructure and that the sub-basin has sufficient system-wide conveyance to accommodate the increased wastewater generated by the proposed project and other cumulative future development projects. Furthermore, the City's implementation of SCA HYD-4 and adherence to the provisions of the infiltration/inflow correction program would help decrease the amount of inflow and infiltration into the existing wastewater transport system. As a result, cumulative development projects are not anticipated to require or result in the construction of new wastewater treatment facilities or the expansion of existing facilities. The proposed project would not result in a considerable contribution to a cumulatively significant impact related to wastewater collection or treatment.

**(3) Stormwater.** The geographic area considered for the stormwater cumulative analysis is the City of Oakland as the City owns, operates, and maintains the stormwater collection system. All development projects are required to control or minimize any increases in infiltration or inflow to the stormwater and sanitary sewer system (SCA HYD-4), size stormwater detention and treatment measures to ensure that runoff volumes are not increased over existing conditions (SCA HYD-2), and ensure that these measures are maintained throughout the life of the project (SCA HYD-3). As a result, cumulative development projects are not anticipated to require or result in the construction of new stormwater collection and conveyance facilities or the expansion of existing facilities. The proposed project would not result in a considerable contribution to a cumulatively significant impact related to stormwater infrastructure.

**(4) Solid Waste.** The proposed project, together with past, present, pending, and reasonably foreseeable future development projects would result in a net increase of solid waste. As discussed above, the waste generated by the proposed project would amount to an estimated addition of 2,608

pounds of waste per day (1.3 tons), or 474.5 tons per year. This represents less than 0.1 percent of the total daily permitted throughput for the Davis Street Transfer Station and the Altamont Landfill (which has an estimated remaining capacity of about 74 percent). The amount of solid waste generated by operation of the proposed project together with cumulative development projects would not exceed the capacity of the Davis Street Transfer Station or the Altamont Landfill and would therefore not require the construction or expansion of landfill facilities. The Altamont and Vasco Road landfills are projected to have sufficient capacity to operate until their projected closure dates (per existing permits) and may have the capacity to continue operation past these dates under future permits, depending on waste flows and reduction measures implemented in the communities within their service areas. Additionally, demolition activities associated with the removal of existing structures, paved asphalt areas, and utilities for development projects would be subject to City of Oakland waste reduction and recycling requirements, which would help reduce the amount of waste generated during construction of all new development projects. The proposed project would not result in a considerable contribution to a cumulatively significant impact related to solid waste disposal.

**(5) Energy and Telecommunications.** The proposed project together with past, present, pending and reasonably foreseeable future development projects would increase demand for electricity and telecommunications services as land uses intensify and convert to high density uses within the City of Oakland, but not to the extent that energy providers have identified a significant adverse cumulative impact. As discussed above, the project would be required to meet current State and local codes concerning energy consumption, including Title 24 of the California Code of Regulations enforced by the City's Department of Building Inspection. The project therefore would not violate applicable statutes and regulation related to energy standards. The proposed project would not result in a considerable contribution to a cumulatively significant impact related to energy and telecommunications.

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## V. ALTERNATIVES

The *CEQA Guidelines* require the analysis of a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the project's basic objectives and avoid or substantially lessen any of the significant effects of the project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice.<sup>1</sup> An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

The primary purpose of this chapter is to ascertain whether there are alternatives of design, scale, land use, or location that would feasibly attain most of the project's basic objectives and avoid or substantially lessen the project's significant impacts, even if those alternatives "impede to some degree the attainment of the project objectives, or would be more costly."<sup>2</sup> The following discussion is intended to inform the public and decision-makers of the relative impacts of four potentially feasible alternatives to the proposed project that were studied in detail. A discussion of the environmentally superior alternative is also provided.

The first section of this chapter provides a brief discussion of alternatives that were considered but rejected from further detailed analysis. The second section briefly restates that objectives and impacts of the proposed project and summarizes each alternative considered (i.e., the No Project alternative, the Dover Street Closure alternative, the No Caltrans Property Acquisition alternative, and the No General Plan Amendment and Rezoning alternative). The last section discusses the environmentally-superior alternative.

### A. ALTERNATIVES CONSIDERED BUT REJECTED FROM FURTHER STUDY

During the Notice of Preparation comment period, numerous suggestions for the identification and evaluation of alternatives were received in writing and orally at the scoping hearings (see Appendix A of this EIR). These comments and suggestions were considered in developing the alternatives to the proposed project that are identified and evaluated in detail in this chapter. As described above, CEQA does not require consideration of every conceivable alternative to a project, rather a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation should be considered. The following provides a description of various potential alternatives that were identified and considered, and the reasons why they were rejected for further evaluation in this EIR.

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<sup>1</sup> *CEQA Guidelines*, 2013. Section 15126.6.

<sup>2</sup> *CEQA Guidelines*, 2013. Section 15126.6(b)

## **1. Expansion of Campus Uses to the Existing Parking Lot Annex Alternative**

A potential alternative suggested during the scoping period included expansion of some hospital facilities to the existing annex parking lot located across from the main CHRCO campus at 4701 Martin Luther King Jr. Way, which currently provides approximately 182 parking spaces for employee use only.<sup>3</sup> Development of the new parking garage at this location was also suggested. This site is not currently accessed by patients or visitors to the CHRCO campus. Commenters suggested that such an alternative could reduce the intensity of new development within the CHRCO main campus by transferring some uses, including possibly the proposed parking garage, to this location. Some commenters also suggested that this is a more appropriate location for institutional uses, given its location along an arterial roadway and that development of CHRCO facilities on the site could reduce impacts to nearby residences north of 53<sup>rd</sup> Street, eliminate the need to reconfigure existing circulation within the campus, reduce or eliminate the need to demolish residential structures, and/or reduce or eliminate the removal of landscape features on the site. This potential alternative is rejected from further analysis for a number of reasons, as discussed below.

Development of new hospital facilities at the parking lot site would possibly create new conflicts between adjacent residential uses that do not currently exist at the CHRCO campus and, as described in Section IV.A, Land Use and Planning, would not occur with the proposed project. Specifically, with the proposed project, new facilities would be concentrated within the existing campus boundaries or would be directly adjacent to existing facilities. Existing residential land uses are generally separated from the campus by 53<sup>rd</sup> Street and, where existing residential uses exist within the campus boundary, these uses are already adjacent to existing hospital uses. Proposed buildings would be consistent with the existing scale and massing of existing structures. The parking lot site is located immediately adjacent to existing 1- and 2-story single-family residential uses to the west and south (and is not separated on the west by a roadway) and is not a more appropriate location for the development of institutional uses.

The CHRCO-owned parking lot across Martin Luther King Jr. Way is on the Cortese list due to a former leaking underground storage tank; proposed remedial activities at this site have been completed and case closure has been requested. This site would not create an impact for the proposed project.

The surface lot provides employee parking for approximately 182 vehicles and there would be no alternate option for parking if the lot was used for other purposes. Even assuming that adding capacity to the new Phase 2 parking structure would be financially viable, this structure would not be built for many years after the loss of the Martin Luther King Jr. Way spaces. This would cause employees to search for parking in surrounding neighborhoods, which would not meet the project sponsor's objectives to ensure efficient hospital operation and work in partnership with the community. In addition, location of the proposed parking garage at this location would result in the loss of 182 existing parking spaces, which could not be replaced without increasing the height of the proposed parking structure, which would be greatly out of scale with the adjacent neighborhood.

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<sup>3</sup> This site is located on the Cortese List due to a former leaking underground storage tank; remedial activities at this site have been completed and case closure has been requested. Depending on the type of development that would be located at this site under such an alternative, additional site investigations and/or remedial activities could be required.

In addition, adding clinical space to the west of Martin Luther King Jr. Way would introduce a number of adverse operational issues for patients and their families. Expansion of the campus boundaries to the west, across Martin Luther King Jr. Way, would result in the separation of acute care and related services by a busy arterial street. The proposed project consists of construction of the new OPC2 Building directly adjacent to the existing OPC1 Building, and both of these facilities would be located immediately across from the main hospital facilities south of 52<sup>nd</sup> Street. Patients, visitors, and staff frequently access several different facilities on any given day (e.g., a physician or surgeon may treat or perform surgery on a patient in the main hospital and within a few hours see the same patient in the OPC1 or OPC2 Buildings). 52<sup>nd</sup> Street is a two-lane roadway and, unlike Martin Luther King Jr. Way, is not a major arterial street. Although the campus is currently bisected by 52<sup>nd</sup> Street, access between facilities to the north and south of this roadway is fairly easy, whereas access between the main hospital, OPC1, and new acute care facilities across Martin Luther King Jr. Way would present safety and circulation issues and increase the time spent travelling between buildings. Furthermore, the main hospital and OPC1 are connected by an elevated pedestrian walkway, which facilitates access across 52<sup>nd</sup> Street. Based on current project site constraints, no such structure could be built across Martin Luther King Jr. Way due to the presence of the elevated BART tracks and, patients, visitors, and staff that need to access multiple facilities or that must park east of Martin Luther King Jr. Way would be required to cross Martin Luther King Jr. Way at 52<sup>nd</sup> Street and then walk a block south to 51<sup>st</sup> Street, as installation of a mid-block crossing would not be appropriate on this busy roadway. In addition, location of the new parking garage at this site would present the same issues, as some patients and visitors would be required to park across from the campus and cross a main arterial street. Alternatively, ambulances or shuttles would likely be needed to transport patients who are unable to walk between the facilities. For example, if a patient undergoing a routine outpatient procedure experiences a medical emergency, that patient could be quickly and more efficiently moved to adjacent inpatient services that could respond to such an emergency. In addition, adjacency between inpatient and outpatient services encourages collaboration by inpatient and outpatient service providers to diagnosis or treat medical conditions. Bifurcating programs would nullify this benefit. Accordingly, facility expansion across Martin Luther King Jr. Way and the loss of surface parking would not meet CHRCO's operational demands.

Finally, CHRCO's operations also do not lend themselves to implementing stringent requirements to use mass transit or commute by biking, which would likely be needed if a substantial number of parking spaces were lost. Hospital employees often work irregular hours, including late night hours, that are not well-served by mass transit, which typically operates with more frequency during the day. Further, staff and doctors may consider cycling home in the dark to be unsafe. In addition, CHRCO's patients are often too sick to walk to mass transit stations, wait for the bus or train, stand on the bus or train, and then walk to the hospital. Similarly, many patients are too ill to bicycle to the hospital. Thus, patients typically arrive by car or emergency vehicles. Given these operational characteristics, parking demand likely will remain high. Thus, removing the surface lot to accommodate facility expansion or locating the proposed parking garage at this location (resulting in the loss of parking) would result in patients and employees seeking parking in the surrounding residential neighborhoods. This result would not meet the project objective of providing adequate on-site parking for hospital operations or the objective to create a campus compatible with surrounding residential uses.

## **2. Reduction in the Number of Parking Spaces Alternative**

A potential alternative suggested would be to reduce the number of parking spaces planned for the campus as part of Phase 2 (ultimately an increase of approximately 287 net new spaces) in order to

provide more room for campus facilities, ultimately reducing building heights or moving new construction of hospital facilities to the location currently planned for the new parking garage. Such an alternative is rejected from further analysis for a number of reasons, as specified above under the Expansion of Campus Uses to the Existing Parking Lot Annex alternative. Generally, new parking on the campus is required to adequately serve the proposed development.

### **3. Increased Building Heights Alternative**

Some commenters suggested that proposed building heights should be increased to allow concentration and intensification of hospital facilities away from the existing neighborhood to the north or to avoid the demolition of residential buildings. Such an alternative is rejected from further analysis because the construction of taller buildings on the site would not reduce any of the impacts identified in the EIR. In addition, current uses within the main campus of the hospital (i.e., the portion of the hospital located south of 52<sup>nd</sup> Street) are a mixture of both inpatient services and outpatient clinics. To satisfy the seismic safety requirements of SB 1953, the hospital must create new seismically compliant acute care inpatient facilities. Given the project site's configuration and use, the creation of these new facilities requires the relocation of the existing outpatient clinics. The proposed construction of a second OPC is intended to accommodate those outpatient clinics. The use of space vacated by the outpatient clinics and created by the demolition of the seismically non-compliant B/C Wing is sufficient to create the seismically compliant acute care facilities required under SB 1953. An increase in building heights would not further and could conflict with the hospital's project objective of relocating, replacing, or renovating existing acute care and other hospital operational functions in accordance with SB 1953.

### **4. Relocated Helistop Location Alternative**

Some commenters suggested that the existing helistop could be relocated to reduce noise impacts to the surrounding community. Both off-site and on-site (i.e., a location somewhere other than the proposed location on top of the proposed Link Building) helistop relocation alternatives were rejected from further analysis, as discussed below.

Relocating the helistop off-site, including locations in other cities, was rejected from further analysis because in order for CHRCO to provide adequate care, the helicopter landing location needs to be as close as possible to emergency facilities as patients arriving by helicopter are typically in critical conditions. Any location for the helicopter pad that is not on the same site as the emergency care facilities would add additional ground transport time and increase the risks to the patient. In addition, CHRCO is the Bay Area's only California State-designated Level 1 pediatric trauma center. Removal of the helistop from the existing campus would result in the inability of this facility to operate in this capacity. Such an alternative would not further and would instead conflict with many of the main project objectives, including the objectives to retain a helistop use on the campus to provide 24-hour emergency services.

Relocating the helistop on-site (i.e., a location somewhere other than the proposed location on top of the proposed Link Building) was also rejected from further analysis because of project phasing requirements, current site constraints, and concerns related to increased noise impacts to the community.

CHRCO initially evaluated a site design that would have temporarily relocated the helistop to the roof of the proposed OPC2 Building while the Patient Pavilion was under construction on the south end of



the CHRCO campus. CHRCO rejected this design primarily based on concerns raised by neighbors north of 52nd Street regarding potential noise impacts. In addition, this design was rejected because of the additional distance and travel time associated with transporting patients from the rooftop of the OPC2 Building to a care area within the hospital. In particular, the route from the rooftop of OPC2 to a care area within the hospital would be too circuitous and time consuming for patients that need critical care. Patients that need emergency care would have to be transported down an elevator to the third floor of OPC2, where they would then be transported through the OPC1 and to the pedestrian bridge spanning 52nd Street. After being transported through the pedestrian bridge into the hospital, the patient then would be transported to the appropriate care area within the hospital.

CHRCO also evaluated a site design that would have relocated the helistop to the top of the proposed parking structure at the south end of the CHRCO campus. CHRCO rejected this option because the parking structure could not be built while the existing helistop was active, given that the footprints of the proposed parking structure and the existing helistop overlap. In addition, locating the helistop on top of the proposed parking structure would require emergency care providers to transport patients from the helistop through congested public areas such as the interior of the parking structure and the hospital's main entrance. Further, this design would require longer patient transport distances and times, as compared to a design that locates the helistop to the top of the Link Building.

Finally, CHRCO evaluated a site design that would have relocated the helistop to the south end of the Patient Pavilion and close to the helistop's current location. CHRCO rejected this option because the Patient Pavilion could not be built while the existing helistop was active, given that the footprints of the proposed Patient Pavilion and the existing helistop overlap. Although this design would avoid patient transports through congested public areas, it also would require longer patient transport distances and times, as compared to a design that locates the helistop to the top of the Link Building.

## **5. Off-Site Alternative**

A few potential alternatives were suggested that identified an off-site location for continued operation and expansion of hospital facilities. These suggestions included potential expansion or relocation of wards/patient rooms to UCSF Benioff Children's Hospital/Mission Bay site, with conversion of CHRCO wards needing seismic upgrade to office uses or relocation of CHRCO facilities to Mandela Parkway in Downtown Oakland.

An off-site alternative is rejected from further analysis for a number of reasons. Specifically, relocation to UCSF's Mission Bay site would not meet the objective of conveniently serving the needs of patients in the East Bay. In addition, CHRCO does not own or have land use control over the Mission Bay site or land located on Mandela Parkway. Finally, the Mission Bay site does not have adequate space to accommodate CHRCO's program.

## **B. PROJECT OBJECTIVES AND IMPACTS**

To determine what range of alternatives should be considered, the impacts identified for the proposed project were considered along with the project objectives. The proposed project is described in detail in Chapter III, Project Description, and the potential environmental effects of the proposed project are analyzed in Chapter IV, Setting, Impacts, Standard Conditions of Approval, and Mitigation Measures. The project objectives and impacts are provided below.

## 1. Project Objectives

The objectives of the proposed project include the following:

- Relocate, replace, and renovate existing acute care and other hospital operational functions at the existing campus in accordance with SB 1953:
  - Re-organize and re-allocate space at the CHRCO campus to improve the efficiency of in-patient and out-patient uses, and provide the maximum number of single-family rooms for patients currently in shared rooms or multi-bed wards on the CHRCO campus.
- Create new seismically compliant acute care facilities for the community that meet the seismic safety requirements of SB 1953 at the earliest practicable date and within mandated state deadlines.
- Construct new and replacement hospital facilities and associated infrastructure with minimal disruption to the community and existing hospital operations.
- Maintain designation as the Bay Area's Level 1 pediatric center with inclusion of emergency helicopters to provide 24-hour emergency service.
- Redesign campus access points and the internal street layout to improve and better organize site access, intermodal circulation, and pedestrian safety within the CHRCO campus and on abutting City streets, and establish additional parking as necessary in a manner that creates safe and efficient pedestrian circulation within the CHRCO campus area.
- Design a project that:
  - Provides an environment that promotes patient-centered care and safety;
  - Ensures efficient operation of the hospital in a cost effective manner;
  - Provides state of the art energy efficiency, and contributes to Oakland's commitment to environmental stewardship by complying with LEED for Healthcare, CalGreen, Bay-Friendly Landscaping and other sustainable performance standards as appropriate, and to use best practices where compliance is not specifically mandated;
  - Creates a fresh, inviting gateway to a high quality-designed facility which expresses the unique nature of a children's hospital, and recognizes its place in the overall community fabric of Oakland; and
  - Integrates with the existing hospital massing and is sensitive to the lower scales surrounding neighborhood.
- Create better integration of hospital campus facilities to make hospital services more efficient, and to modernize hospital facilities to ensure the Hospital maintains its position as Oakland's pre-eminent children's hospital.
- Develop a Master Plan in partnership with our community. Working with neighbors, staff, physicians and patients of CHRCO, the Master Plan is shaped by direct input through community outreach. Listed below are a few of many design considerations agreed upon during interactive community visioning sessions:
  - Calming garden and quiet spaces;
  - Escape and play spaces;
  - Spaces for families, to enhance family-centered care; and

- Use of environmental resources in an effort to create a sustainable facility for Oakland's families.

## 2. Project Impacts

As discussed in Section IV, Setting, Impacts, Standard Conditions of Approval and Mitigation Measures, with implementation of the City's standard conditions of approval, all of the potential impacts of the proposed project would be less than significant.

## 3. Project Alternatives

Using the project objectives and significant impacts presented above, the City selected a reasonable range of project alternatives to be analyzed in detail within the EIR. The four alternatives to the proposed project discussed in this chapter include the following:

- The **No Project alternative**, which assumes that no demolition or construction activities would occur on the campus, existing acute care functions would be relocated on- or off-site and that existing non-seismically compliant buildings would be backfilled with non-acute care uses in compliance with SB 1953.
- The **Dover Street Closure alternative**, which assumes the closure of Dover Street to through traffic between 53<sup>rd</sup> and 52<sup>nd</sup> Streets.
- The **No Caltrans Property Acquisition alternative**, which assumes that the existing 1.5-acre Caltrans right-of-way would not be acquired or developed as part of the proposed project.
- The **Existing General Plan and Zoning alternative**, which assumes that the existing General Plan and zoning designations that apply to the site would not be changed and that development of the site would be regulated by existing land use controls.

**Table V-1** provides a summary of the major components of each of the project alternatives, as compared to development of the proposed project. The following sections include a discussion of each alternative and an analysis of anticipated environmental impacts. The emphasis of the analysis is on the comparison of the anticipated impacts of each alternative to the impacts associated with the proposed project. The discussion includes a determination as to whether the alternative would or would not reduce, eliminate, or create new significant impacts.

**Table V-1: Project Alternatives Buildout Summary**

|   | Existing | Proposed Project           |              | No Project Alternative     |              | Dover Street Closure Alternative |              | No Caltrans Property Acquisition Alternative |              | Existing General Plan and Zoning Alternative |              |
|---|----------|----------------------------|--------------|----------------------------|--------------|----------------------------------|--------------|--|--------------|--|--------------|
|   |          | Proposed Increase/Decrease | Campus Total | Proposed Increase/Decrease | Campus Total | Proposed Increase/Decrease       | Campus Total | Proposed Increase/Decrease                   | Campus Total | Proposed Increase/Decrease                   | Campus Total |
| Site Acres  | 11.0     | 0                          | 12.5         | 0                          | 11.0         | 1.5                              | 12.5         | 0  | 11.0         | 1.5  | 12.5         |
| Demolished Building Area                              |          | (66,582)                   |              | 0                          |              | (66,582)                         |              | (68,496)                                     |              | (65,696)                                     |              |
| New Building Area                                     |          | 399,200                    |              | 0                          |              | 399,200                          |              | 354,925                                      |              | 349,900                                      |              |
| Net Building Area (sq. ft.)                           | 692,416  | 332,618                    | 1,025,034    | 692,416                    | 692,416      | 332,618                          | 1,025,034    | 286,429                                      | 978,845      | 284,204                                      | 976,620      |
| Removed Parking Spaces                                |          | (67)                       |              | 0                          |              | (67)                             |              | (67)   |              | (67)   |              |
| New Parking Spaces                                    |          | 349                        |              | 0                          |              | 349                              |              | 285  |              | 285  |              |
| Net Parking Spaces                                    | 1,107    | 284                        | 1,391        | 0                          | 1,107        | 284                              | 1,391        | 220  | 1,306        | 220  | 1,306        |
| On-Site Hospital Beds (#)                             | 170      | 40                         | 210          | (9)                        | 161          | 40                               | 210          | 48   | 218          | 40   | 210          |
| Off-Site Hospital Beds (#)                            | 20       | (20)                       | 0            | 9                          | 29           | (20)                             | 0            | 0  |              | 0  |              |
| Patients and Outpatient Visitors <sup>a</sup> (daily) | 875      | 113                        | 988          | (27)                       | 848          | 113                              | 988          | 110  | 985          | 110  | 985          |
| Hospital (Inpatient) Visitors <sup>b</sup> (daily)    | 604      | 157                        | 761          | (19)                       | 585          | 157                              | 761          | 150  | 754          | 150  | 754          |
| Total Staff <sup>c</sup> (daily)                      | 2,166    | 205                        | 2,371        | (65)                       | 2,101        | 205                              | 2,371        | 197  | 2,363        | 196  | 2,362        |
| Total Existing/Removed Trees <sup>d</sup>             | 151      | (109)                      | 42           | 0                          | 99           | (109)                            | 42           | (57)   | 94           | (104)  | 47           |

<sup>a</sup> Includes inpatient census, emergency department patients, and outpatient visitors.<sup>b</sup> Includes visitors (parents, siblings, vendors, and contractors).<sup>c</sup> Staff includes Outpatient staff, hospital staff, physicians, scientists and “lease” employees.<sup>d</sup> The number of trees indicated includes existing CHRCO (99 trees) and Caltrans property (52 trees) trees, which currently total 151 trees. New trees to be planted as part of the proposed landscape plan are not accounted for as the exact number of new trees to be planted is currently unknown.

Source: HDR, May 2014.

The topical issues discussed in Chapter VI, Other CEQA Considerations (e.g., Agricultural and Forestry Resources; Mineral Resources; Population and Housing; Public Services and Recreation) are only briefly addressed in the analysis below, as identified impacts would be less than significant and similar to those associated with the proposed project. However, because several standard conditions of approval are required to be implemented to reduce the impact to biological resources, and because the number of trees to be removed would vary between implementation of the proposed project and the alternatives described in this analysis, the topic of Biological Resources is more fully discussed in this chapter.

**Table V-5** (at the end of this section) shows both the project impacts and impacts associated with each project alternative for each environmental topic.

## C. NO PROJECT ALTERNATIVE

CEQA requires that a “No Project Alternative” be evaluated in an EIR, and when the project is a change in ongoing operations, the No Project alternative is the continuation of those operations into the future. By describing and analyzing the No Project Alternative, decision-makers are able to compare the impacts of the proposed project against impacts that might occur without implementation of the project. According to Section 15126.6(e) of the CEQA Guidelines, “the no project alternative analysis is not the baseline for determining whether the proposed project’s environmental impacts may be significant, unless it is identical to the existing environmental setting analysis, which does establish the baseline.” The no project alternative analysis is required to discuss the existing conditions at the time of the publishing of the NOP and the initiation of the environmental analysis, as well as discuss what would be reasonably expected to occur in the foreseeable future, if the proposed project were not approved, based on current plans and consistent with available infrastructure and community services.

### 1. Principal Characteristics

The No Project alternative assumes that no demolition or construction activities would occur at the CHRCO campus to accommodate seismically-compliant acute care facilities on the CHRCO campus pursuant to SB 1953, although some interior renovations and internal utility re-routing would likely occur. In addition, the 1.5-acre Caltrans property would not be acquired or redeveloped and the existing campus boundaries and circulation would remain the same, as further described below. As described below, some existing acute care functions would be relocated on- or off-site.

The No Project Alternative evaluated in this EIR would involve the continued ongoing operation of the Hospital without implementation of the Master Plan, and, more specifically, without construction of new acute care facilities on the CHRCO campus. In order to achieve compliance with SB1953, CHRCO still would be required to relocate the acute care services in the existing A/B and B/C Wings to seismically compliant buildings. The continued ongoing operations of the Hospital without implementation of the Master Plan would not maintain the existing environmental setting, and therefore the No Project Alternative would not be a “no build” alternative as described in Section 15126.6(e)(3)(B) of the CEQA Guidelines. As such, this No Project Alternative discusses the existing conditions at the time of publishing the NOP and the initiation of the environmental analysis, and it discusses what would be reasonably expected to occur in the foreseeable future if the Master Plan were not approved based on current plans and consistent with available infrastructure and community services.

Under the No Project alternative, the new OPC2 Building and expansion of the Central Utility Plant proposed as part of Phase 1 development would not be constructed; therefore, no new seismically-compliant acute care facilities would be developed on the campus. As a result, the existing acute care services in the existing A/B and B/C Wings would be relocated to seismically-compliant buildings by December 31, 2019. The new OPC2 building would not be constructed to accommodate non-acute care services that would be re-located from existing seismically-compliant buildings in order to provide space for existing acute care services currently located in the A/B and B/C Wings. As such, interior renovations on floors 1 through 4 of the inpatient floors of the hospital (consisting of the D&T Building and 1982 Tower), would not occur to address acute care needs per SB1953.

The relocation of existing departments and services to allow for demolition and construction activities as part of Phase 2 also would not occur and existing services would need to be relocated into other compliant hospital buildings. The new Clinical Support Building, Family Residence Building, Link Building, Patient Pavilion, Central Utility Plant, and Parking Structure proposed as part of Phase 2 would not be constructed. None of the existing structures on the site, including the B/C Wing, Bruce Lyon Memorial Research Center, HemOnc Administration Building, or trailers would be demolished. None of the existing single-family residences that currently function as office space would be demolished or relocated.

Neither the A/B Wing (45,177 square feet) nor the B/C Wing (33,510 square feet) would be seismically compliant as of January 2, 2020, resulting in a total of 78,686 square feet of hospital space that could not be used for general acute care services, out of a total of 257,727 square feet. The A/B and B/C Wings constitute over 30 percent of the total hospital square footage. General acute care service, including the Inpatient Pharmacy, Morgue, Central Sterile Processing Department, portions of Inpatient Rehabilitation, NICU lockers, Rehabilitation School Program, and nine medical/surgical beds would be relocated to compliant buildings within the hospital. However, no available space exists within compliant buildings for any of those departments. To keep these acute care services at the hospital, the out-patient clinics and support space for those clinics, and clinical lab functions immediately within compliant hospital space would have to be relocated off-site or eliminated. The NICU and PICU would remain as wards, rather than converted to single-patient or shared-patient rooms. The Post Anesthesia Care Unit (surgery recovery) could not be renovated, and the recovery bedcount would stay as-is, rather than improving throughput of inpatient surgery. Uses that could remain within the existing B/C Wing include: engineering, mailroom, family gathering spaces, and other non-acute care services.

All utilities that traverse through a non-compliant building to a compliant building would be re-routed internally to avoid the non-compliant building. New exit pathways would also be established to avoid exiting the hospital through non-compliant buildings.

The existing vehicular circulation pattern in and around the campus would remain, and access to the existing parking garage would continue to be provided at 52<sup>nd</sup> Street. The new driveway south of Dover Street would not be constructed and improvements to the existing courtyard and pedestrian walkways would not occur. The existing helistop would remain in its current location and, per CHRCO's projected growth model, the number of helicopter trips would increase by about 1 percent per year through the year 2025 under the No Project alternative (as described in the Existing Conditions subsection of Chapter III, Project Description). Helicopter transports are typically routed to either the Emergency Department or the Intensive Care Units (NICU and PICU) upon arrival; however, the capacity of these units would not change with implementation of this alternative.

Finally, the General Plan Amendment, Rezoning, Vesting Tentative Map, Planned Unit Development Permit or other entitlements requested as part of the proposed project would not be required as part of the No Project alternative. Conditional Use Permits would still be required to allow the continued operation of office uses within existing former residential buildings.

## **2. Analysis of the No Project Alternative**

The No Project alternative is evaluated for each environmental topic below. **Table V-5** provides a comparison of the potential impacts of the No Project alternative with those of the proposed project.

If the No Project alternative were implemented, none of the impacts associated with the proposed project would occur. However, none of the project's objectives would be met by this alternative. Specifically, it would not provide seismically compliant acute care facilities for the community that meet the seismic safety requirements of SB 1953 by the mandated State deadline.

**a. Land Use and Planning.** Under the No Project alternative, existing land use conditions at the project site would not change. No existing structures would be demolished or relocated and no new buildings would be constructed. Interior renovations to some hospital facilities and internal utility re-routing would occur to accommodate the relocation of acute care functions from the existing A/B and B/C Wings into seismically-compliant buildings. Similar to the less than significant land use and planning policy impacts identified for the proposed project, the No Project alternative would not divide an established community or result in conflicts between adjacent or nearby uses. Potential policy conflicts would also be less than significant.

Unlike the proposed project, this alternative would not include a General Plan Amendment, Rezoning, Vesting Tentative Map, or Planned Unit Development Permit, Conditional Use Permits would however be required to allow the continued operation of office uses within former residential buildings. The proposed project is intended to conform to the underlying General Plan and zoning designation at the site, once these approvals are granted. The existing CHRCO-owned residential structures on the campus would however likely continue to operate as office space and medical support facilities, which require a Conditional Use Permit in the RM-2 zoning district.

**b. Aesthetics and Shadow.** Under the No Project alternative, no existing structures would be demolished and no new structures would be constructed. Existing building heights on the campus would be maintained and existing landscaping, including the southern magnolia tree, would be retained. Some interior renovations to existing structures would occur; however, remodeling activities would not be visible from outside of the facilities. Existing conditions related to visual character and quality, scenic views, light and glare, and shade and shadow would not change under the No Project alternative and there would be no impact related to aesthetics or shadow. However, although the proposed project would change existing aesthetic and shadow conditions at the project site, similar to the No Project alternative, associated impacts would be less than significant with implementation of SCAs AES-1 and BIO-3.

**c. Cultural and Historic Resources.** Under the No Project alternative, none of the existing structures on the site would be demolished. The three residential structures that contribute to the 55<sup>th</sup> and Dover Residential District's setting would not be demolished or altered and would continue to function as office uses. Similar to the proposed project, the A/B Wing would not be altered. Similar to the less-than-significant impacts identified for the proposed project with implementation of SCAs CUL-1 through CUL-4, impacts to historic resources, archaeological resources, paleontological resources and human remains interred outside of formal cemeteries would also be less than significant.

**d. Transportation and Circulation.** Under the No Project alternative no changes would be made to the existing circulation system within or in the immediate vicinity of the project site. Specifically, access to the existing parking garage would continue to be provided at 52<sup>nd</sup> Street. The new driveway south of Dover Street would not be constructed and improvements to the existing courtyard and pedestrian walkways would not occur. Improvements intended to better facilitate pedestrian and bicycle access through the campus, including proposed bike lanes on 52<sup>nd</sup> Street, would not be constructed. Vehicle trips to and from the CHRCO campus would also not increase, and would likely decrease compared to existing conditions as acute care services at the hospital would be relocated to spaces currently occupied by non-acute care services, such as the out-patient clinics and clinical labs, which would result in off-site relocation or elimination of those services. Similar to the proposed project with implementation of SCAs TRA-1 and TRA-2, the No Project alternative would not result in any impacts related to traffic loads and capacity on surrounding roadways, would not exceed established thresholds for traffic safety, or conflict with transportation related policies or plans.

**e. Air Quality.** Under the No Project alternative, no changes to existing CHRCO campus facilities would occur, and no new structures or associated medical support facilities would be built. Existing generators, boilers and utility plants would continue to operate and no new generators or boilers would be installed and expansion of the existing Central Utility Plant would not occur. Some interior renovations could occur on the campus; however, these activities would be unlikely to result in substantial construction emissions. In addition, rerouting of some utilities would be required, although these modifications would be minor compared to the construction activities that would occur with the proposed project. Similar to the proposed project, implementation of SCA AIR-1, which regulates construction emissions, would likely be implemented for these activities. No new vehicle trips would be generated; however, helicopter trips would increase by about 1 percent per year through 2025 compared to existing conditions. Therefore, implementation of SCAs AIR-2 and AIR-3, which regulate operational emissions, would be required to ensure that potential air quality impacts are less-than-significant. Similar to the proposed project with implementation of SCAs AIR-2 and AIR-3, average daily construction and operation emissions thresholds would not be exceeded; carbon monoxide (CO) concentrations thresholds would not be exceeded; Toxic Air Contaminants (TACs) emitted from the site would not result in the exposure of sensitive receptors to unacceptable concentrations; and objectionable odors would not be emitted.

**f. Greenhouse Gas Emissions.** Under the No Project alternative, no changes to existing CHRCO campus facilities would occur, and no new structures or associated medical support facilities would be built. Existing generators, boilers and utility plants would continue to operate and no new generators or boilers would be installed and expansion of the existing Central Utility Plant would not occur. Some interior renovations could occur on the campus which would improve building efficiencies over existing conditions. Similar to the proposed project with implementation of SCAs GHG-1 and GHG-2, total greenhouse gas emissions would not exceed established thresholds or conflict with applicable



plan's policies, or regulations adopted for the purposes of reducing greenhouse gas emissions. However, implementation of the No Project alternative would not reduce GHG emissions on the campus to the same extent as the proposed project as new energy efficient buildings would not be constructed to replace existing facilities.

**g. Noise.** Under the No Project alternative, no changes to existing CHRCO campus facilities would occur, and no new structures or associated medical support facilities would be built. Vehicle trips to and from the CHRCO campus would not increase; however, helicopter operations would increase by about 1 percent per year through 2025 as compared to existing conditions. Overall, noise levels at the campus would increase when compared to existing conditions and, similar to the proposed project, implementation of SCAs NOI-1 through NOI-7 would be required. Similar to the proposed project's less-than-significant impacts related to noise, under the No Project alternative, no impacts related to construction-period noise levels would occur. Specifically, noise generated by the CHRCO campus would not exceed the thresholds established by the City's Noise Ordinance, result in a conflict with the land use compatibility guidelines of the General Plan, or result in a substantial increase in ambient noise levels. In addition, groundborne vibration would not exceed established standards.

**h. Geology and Soils.** Under the No Project alternative, no construction, excavation, or demolition activities would occur on the CHRCO campus. Providing the existing acute care functions within the A/B and B/C Wings would not meet the requirements of SB 1953. These functions would be removed from these buildings and would be relocated to seismically-compliant spaces on the campus. While some interior renovations to other existing buildings could occur, in general, existing buildings within the campus would not be seismically upgraded; however, these buildings could continue to function in their current capacity. No soil disturbance would occur, with the exception of some minor improvements to existing utilities that would need to be rerouted between non-compliant buildings. Similar to the less-than-significant impacts identified for the proposed project with implementation of SCAs GEO-1 through GEO-3, implementation of the No Project alternative would not expose people or structures to substantial risks associated with seismic activity; cause substantial soil erosion; or result in construction impacts associated with unstable soil conditions.

**i. Hydrology and Water Quality.** Under the No Project alternative, no construction, excavation, or demolition activities would occur on the CHRCO campus. Permeable and impermeable surface conditions would generally remain the same as existing conditions and stormwater runoff would also remain the same. No soil disturbance or increase in impermeable surface area would occur, with the exception of some minor improvements to existing utilities that would need to be rerouted. Similar to the less-than-significant impacts identified for the proposed project with implementation of SCAs HYD-1 through HYD-4, implementation of the No Project alternative would not violate any water quality standards or discharge requirements; substantially deplete groundwater supplies; result in substantial soil erosion or siltation; result in substantial on- or off-site flooding; create substantial sources of polluted runoff; be located within a 100-year flood zone; substantially alter the existing drainage pattern of the site; or conflict with the City's Creek Protection Ordinance.

**j. Hazards and Hazardous Materials.** Under the No Project alternative, no construction, excavation, or demolition activities would occur on the CHRCO campus, with the exception that some existing utilities would be rerouted to change connections between existing buildings. No changes would be made to the existing circulation pattern or emergency access routes. Handling of hazardous materials within the campus would be the same as current conditions. No modifications to existing structures or demolition of existing structures would occur, and no excavation of site soils

would be required, with the exception of some minor improvements to existing utilities that would need to be rerouted. Similar to the less-than-significant impacts identified for the proposed project with implementation of SCAs HAZ-1 through HAZ-13, implementation of the No Project alternative would not result in exposure of the public to hazardous materials or hazardous conditions or alter emergency access routes or interfere with an emergency response plan.

**k. Utilities.** Under the No Project alternative, no construction, excavation, or demolition activities would occur on the CHRCO campus, with the exception that some existing utilities would be rerouted to change connections between existing buildings. Water demand, wastewater generation, solid waste generation, and electricity demand would generally be the same as existing conditions on the campus, although demand for these services could be slightly reduced if acute care functions are transferred off site and new or renovated uses do not generate the same demand. Similar to the less-than-significant impacts identified for the proposed project with implementation of SCAs UTL-1 through UTL-5, implementation of the No Project alternative would not result in an increase in water demand that would exceed existing supplies; exceed the capacity of existing water or wastewater collection infrastructure or treatment systems, result in the construction of new storm drainage facilities that would result in environmental effects; be served by a landfill with inadequate capacity; or result in increased energy demands that cannot be met.

**l. Other CEQA Considerations/Biological Resources.** Similar to the proposed project, under the No Project alternative, there would be no impact to agricultural and forestry resources; mineral resources; population and housing; public services and recreation.

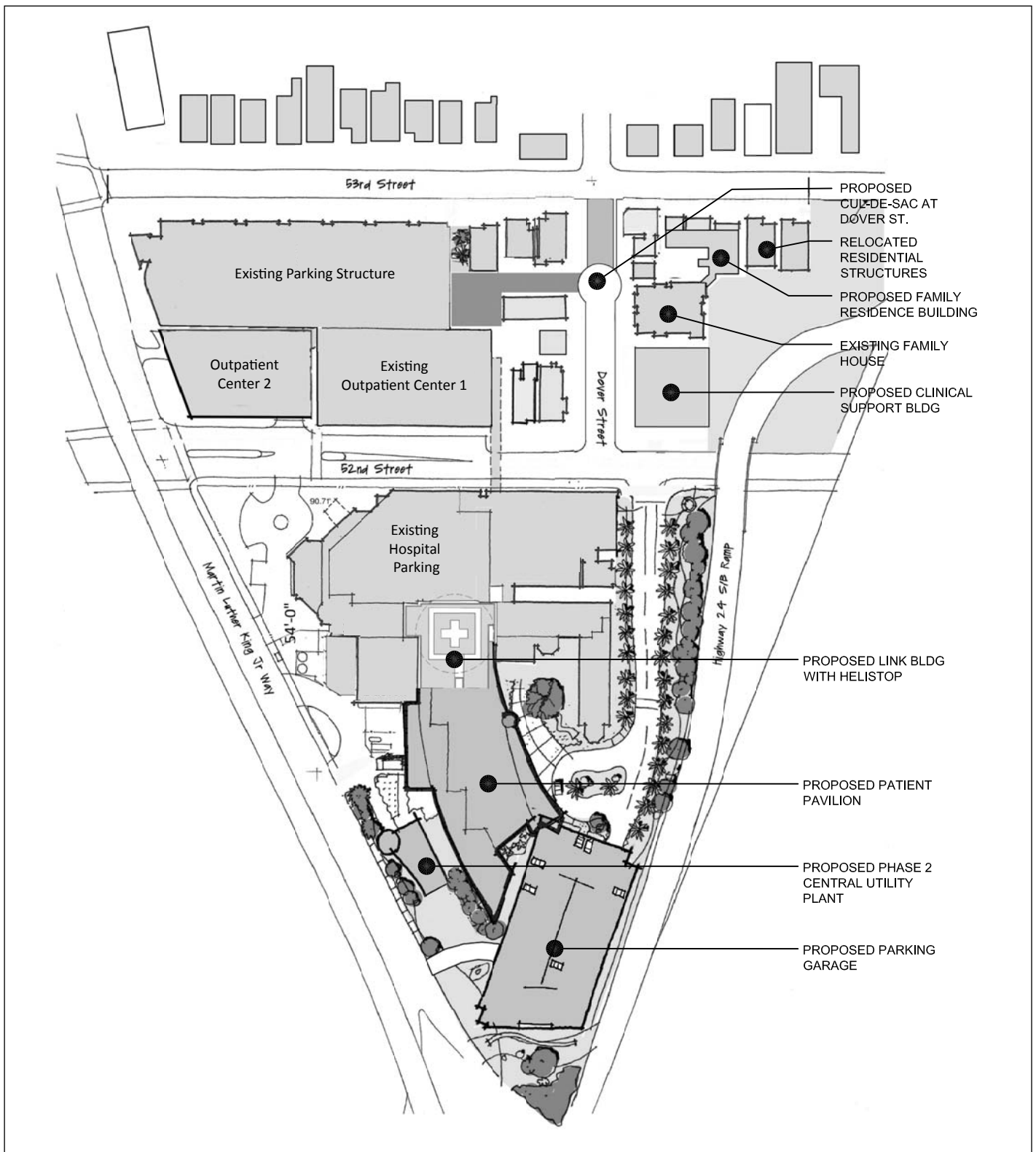
Under the No Project alternative, none of the existing trees on the site would be removed, including the large southern magnolia tree, as no substantial demolition or construction activities would take place. All of the existing 99 trees on the CHRCO campus and 52 trees on the Caltrans site would be retained and no new trees would be planted. Similar to the less-than-significant impacts identified for the proposed project with implementation of SCAs BIO-1 through BIO-4, implementation of the No Project alternative would result in a less-than-significant impact to biological resources.

## **D. DOVER STREET CLOSURE ALTERNATIVE**

The Dover Street Closure alternative would involve the closure of the northern portion of Dover Street between 53<sup>rd</sup> and 52<sup>nd</sup> Streets, as described below.

### **1. Principal Characteristics**

The Dover Street Closure alternative would consist of the closure of Dover Street to through traffic just south of 53<sup>rd</sup> Street. The northern segment of Dover Street, between 53<sup>rd</sup> and 52<sup>nd</sup> Streets, could be vacated or closed by the City and barricaded or reconfigured into a cul-de-sac (this option is shown in **Figure V-1**, which depicts this alternative at project build out). With street closure, the City would maintain this portion of the roadway as public property, with limited vehicle access. With vacation of the City street, the public right to use the street would be terminated and the street would be under private ownership. Each of these potential options would be subject to City approval and the appropriate findings would need to be made. Closure of City streets to through traffic is subject to City of



LSA

FIGURE V-1

NOT TO SCALE

SOURCE: HDR/TAYLOR, JUNE 2014.

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CHRCO Campus Master Plan Project EIR  
Dover Street Closure (Phase 2 Buildout) Alternative

Oakland's City Council Resolution Number 71056 C.M.S, adopted May 1994, which is consistent with California Vehicle Code (Section 21101). The City of Oakland requires that the following be satisfied to close a street to through traffic:

1. The street is classified as a local street.
2. Unwarranted through traffic is using the street instead of collector and/or arterial streets.
3. 67 percent or more of the residents of the street have petitioned the City to close the street to through traffic.
4. Closure of the street would not adversely affect the health and safety of the residents of the street and neighboring streets.

Existing on-street parking spaces in this area would likely be removed to accommodate fire and emergency access. All other elements of the proposed project as described in Chapter III, Project Description, would occur under this alternative. In particular, the new access driveway to the existing maintenance area behind OPC1 would be constructed in the same location and would be accessed via Dover Street, prior to its closure. Maintenance vehicles leaving this area would only be able to make a right turn onto Dover Street under this alternative and no direct access from 53<sup>rd</sup> Street would be provided. The closure of Dover Street would only occur with implementation of Phase 2, as discussed below.<sup>1</sup>

## **2. Analysis of the Dover Street Closure Alternative**

The Dover Street Closure alternative is evaluated for each environmental topic below. **Table V-5** provides a comparison of the potential impacts of the Dover Street Closure alternative with those of the proposed project.

Given that development activities associated with the Dover Street Closure alternative would only differ from the proposed project with the closure of Dover Street, most of the less-than-significant impacts of the proposed project would be identical to those identified for the Dover Street Closure alternative. This alternative would not substantially reduce any of the impacts identified for the project, nor would it create new or more severe impacts. With respect to traffic and transportation impacts, the Dover Street Closure alternative would result in a very slight decrease in the already less-than-significant impact identified for this topic because operation of one of the study intersections would slightly improve compared to project conditions. In addition, the Dover Street Closure alternative would meet all of the project objectives.

**a. Land Use and Planning.** Under the Dover Street Closure alternative, demolition and relocation of existing buildings and construction of new buildings would be the same as the proposed project described as part of Phase 2 buildout. Dover Street would be closed as part of Phase 2 development; however, similar to the proposed project, closure of this street in conjunction with project buildout would result in less than significant impacts related to division of an established community and conflicts with adjacent land uses, and conflicts with existing planning policies. Pedestrian and bicycle access between 53<sup>rd</sup> and 52<sup>nd</sup> Streets via Dover Street would continue to be available under this alternative. Although through vehicular access would be terminated, vehicles

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<sup>1</sup> Closure of Dover Street would not be financially feasible in Phase 1 of the development; therefore, closure of Dover Street would occur in Phase 2 of the development. As such, the description and analysis of this alternative focuses on the impacts associated with closure at project build out, which would occur in Phase 2.

would still have access to existing campus facilities and the surrounding residential neighborhoods to the north and commercial areas to the east via Martin Luther King Jr. Way and 52<sup>nd</sup> Street. Under this alternative, Dover Street would also be closed at about the same location as the new maintenance driveway, preventing direct access of maintenance vehicles through to 53<sup>rd</sup> Street. Similar to the proposed project, this alternative would include a General Plan Amendment, Rezoning, Vesting Tentative Map, Planned Unit Development Permit, Conditional Use Permits, and other entitlements. In addition, an agreement between the City and the adjoining property owners would be required for street closure or vacation, and certain findings would need to be made to allow this improvement to an existing City street. Similar to the proposed project, less than significant impacts related to land use and planning would generally be the same with development of the Dover Street Closure alternative.

**b. Aesthetics and Shadow.** Implementation of the Dover Street Closure alternative would result in the same demolition or relocation of existing buildings and construction of new buildings as proposed by the project. Proposed changes to the existing landscaping on the campus would also be similar to the proposed project. Changes related to visual character and quality, scenic views, light and glare, and shade and shadow would be nearly identical to the proposed project as the road would need to be available for emergency vehicle use. Similar to the proposed project, implementation of SCA AES-1 and SCA BIO-3 would be required. The less than significant impacts related to aesthetics and shadow identified for the proposed project would generally be the same with development of the Dover Street Closure alternative.

**c. Cultural and Historic Resources.** Implementation of the Dover Street Closure alternative would result in the same demolition or relocation of existing buildings and construction of new buildings as proposed by the project. The three residential structures that contribute to the 55<sup>th</sup> and Dover Residential District's setting would be demolished as part of Phase 2 and the existing façades would be incorporated into the new Family Residence Building. In addition, this portion of Dover Street also contributes to the 55<sup>th</sup> and Dover Residential District's pattern of development; although closure of the street would not reduce the integrity of the District such that a significant impact would occur, its contribution to the District would be slightly reduced with closure to through public access. Although a change to this one block of the district has been found to have a less-than-significant impact on the historic district, the Historic Resource Evaluation Report prepared for the project<sup>2</sup> recommends that the Dover Street Closure alternative not be implemented and that the existing street grid and block configuration in the district should be retained.

Similar to the proposed project, impacts to the A/B Wing would be less than significant. Implementation of SCAs CUL-1 through CUL-4, which are intended to reduce impacts to cultural and historic resources to a less-than-significant level, would be required under this alternative. Impacts to historic resources, archaeological resources, paleontological resources and human remains interred outside of formal cemeteries, would be identical to the proposed project and, similar to the proposed project, implementation of the Dover Street Closure alternative would result in less-than-significant impacts to cultural and historic resources.

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<sup>2</sup> Page & Turnbull, 2014. *Oakland Children's Hospital and Research Center Historic Resource Evaluation Part II: Proposed Project Analysis*. July 16.

**d. Transportation and Circulation.** Circulation improvements proposed as part of the proposed project would generally be the same under the Dover Street Closure alternative, with the exception that Dover Street would be closed to through motor vehicle traffic between 53<sup>rd</sup> and 52<sup>nd</sup> Streets. The closure of Dover Street would continue to allow pedestrian and bicycle access, as well as emergency vehicle access. Thus, the Dover Street Closure alternative would not affect access or circulation for pedestrians, bicyclists, or emergency vehicles.

As stated in Section IV.D, Transportation and Circulation, the closure of Dover Street, between 53<sup>rd</sup> and 52<sup>nd</sup> Streets, is recommended as part of the proposed project (see Recommendation TRA-2). The Dover Street closure would only occur under Phase 2 (project buildout) with implementation of this alternative. Therefore, traffic operations for this alternative are analyzed at the study intersection under the Phase 2 buildout scenarios analyzed for the proposed project. This analysis assumes no other modifications to the project or surrounding roadway network. Traffic operations that would occur under the Dover Street Closure alternative, under each scenario, are described below. Similar to the proposed project, the Dover Street Closure alternative would not result in any impacts related to traffic loads and capacity on surrounding roadways, would not exceed established thresholds for traffic safety, or conflict with transportation related policies or plans.

**(1) Existing Plus Phase 2 Plus Dover Street Closure Alternative Intersection Analysis.**

**Figure V-2** shows the traffic volumes for the Existing Plus Phase 2 Plus Dover Street Closure alternative. **Table V-2** summarizes intersection operations under this scenario. All study intersections would operate at the same LOS as without the Dover Street Closure alternative with minor changes in intersection average delays. Similar to the proposed project, the Dover Street Closure alternative would not cause a significant impact on traffic operations at the study intersections under Existing Plus Phase 2 conditions.

**(2) 2020 Plus Phase 2 Plus Dover Street Closure Alternative Intersection Analysis.**

**Figure V-3** shows the traffic volumes for the 2020 Plus Phase 2 Plus Dover Street Closure alternative. **Table V-3** summarizes intersection operations under this scenario. All study intersections would operate at the same LOS as without the Dover Street Closure alternative with minor changes in intersection average delays. Similar to the proposed project, the Dover Street Closure alternative would not cause a significant impact on traffic operations at the study intersections under 2020 Plus Phase 2 conditions.

**(3) 2035 Plus Phase 2 Plus Dover Street Closure Alternative Intersection Analysis.**

**Figure V-4** shows the traffic volumes for the 2035 Plus Phase 2 Plus Dover Street Closure alternative. **Table V-4** summarizes intersection operations under this scenario. All study intersections, except one, would operate at the same LOS as without the Dover Street Closure alternative. When compared to conditions that would occur with the proposed project, the Shattuck Avenue/52<sup>nd</sup> Street intersection (#14) would improve from LOS E to LOS D during both AM and PM peak hours with the closure of Dover Street under 2035 Plus Phase 2 conditions. Similar to the proposed project, the Dover Street Closure alternative would not cause a significant impact on traffic operations at the study intersections under 2035 Plus Phase 2 conditions, but instead would represent an improvement over proposed project conditions.

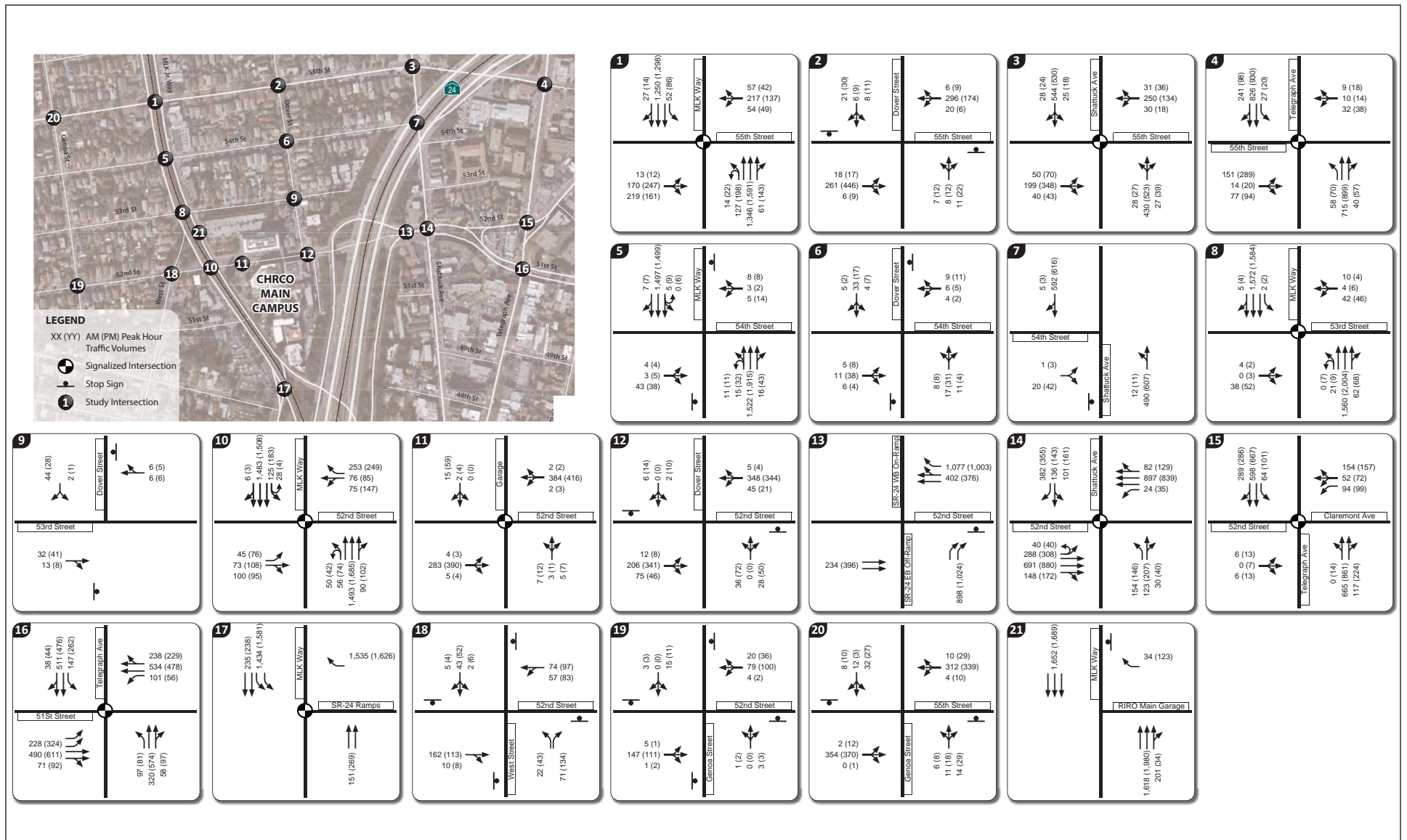


FIGURE V-2

LSA

NOT TO SCALE



CHRCO Campus Master Plan Project EIR  
Existing Plus Phase 2 Plus Dover Street Closure Alternative  
Peak Hour Traffic Volumes, Lane Configurations, and Intersection Controls

SOURCE: FEHR & PEERS, MAY 2014.

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**Table V-2: Existing Plus Project Plus Dover Street Closure Alternative Intersection LOS Summary**

|     | Intersection  | Traffic Control <sup>a</sup> | Peak Hour | Existing Conditions          |              | Existing Plus Phase 2 Plus Dover St. Closure |              |
|-----|---|------------------------------|-----------|------------------------------|--------------|--|--------------|
|     |   |                              |           | Delay <sup>b</sup> (seconds) | LOS          | Delay <sup>b</sup> (seconds)                 | LOS          |
| 1   | Martin Luther King Jr. Way/55 <sup>th</sup> Street        | Signal                       | AM        | 18.9                         | B            | 18.8   | B            |
|     |   |                              | PM        | 22.3                         | C            | 22.7   | C            |
| 2   | Dover Street/55 <sup>th</sup> Street                      | SSSC                         | AM        | 1.8 (13.3)                   | A (B)        | 1.7 (13.4)                                   | A (B)        |
|     |   |                              | PM        | 2.1 (13.8)                   | A (B)        | 2.1 (14.5)                                   | A (B)        |
| 3   | Shattuck Avenue/55 <sup>th</sup> Street                   | Signal                       | AM        | 17.0                         | B            | 17.3   | B            |
|     |   |                              | PM        | 18.6                         | B            | 19.9   | B            |
| 4   | Telegraph Avenue/55 <sup>th</sup> Street                  | Signal                       | AM        | 9.4                          | A            | 9.9  | A            |
|     |   |                              | PM        | 15.3                         | B            | 18.4   | B            |
| 5   | Martin Luther King Jr. Way/54 <sup>th</sup> Street        | SSSC                         | AM        | 0.5 (21.8)                   | A (C)        | 0.5 (23.1)                                   | A (C)        |
|     |   |                              | PM        | 0.6 (23.1)                   | A (C)        | <b>0.6 (26.3)</b>                            | <b>A (E)</b> |
| 6   | Dover Street/54 <sup>th</sup> Street                      | SSSC                         | AM        | 3.6 (9.2)                    | A (A)        | 4 (9.4)                                      | A (A)        |
|     |   |                              | PM        | 4.4 (9.5)                    | A (A)        | 5.6 (9.8)                                    | A (A)        |
| 7   | Shattuck Avenue/54 <sup>th</sup> Street                   | SSSC                         | AM        | 0.3 (12.7)                   | A (B)        | 0.4 (12.6)                                   | A (B)        |
|     |   |                              | PM        | 0.4 (14.4)                   | A (B)        | 0.6 (13.8)                                   | A (B)        |
| 8   | Martin Luther King Jr. Way/53 <sup>rd</sup> Street        | Signal                       | AM        | 3.7                          | A            | 4.4  | A            |
|     |   |                              | PM        | 3.7                          | A            | 4.2  | A            |
| 9   | Dover Street/53 <sup>rd</sup> Street                      | SSSC                         | AM        | 3.8 (9.3)                    | A (A)        | 5.3 (9.4)                                    | A (A)        |
|     |   |                              | PM        | 4.1 (9.2)                    | A (A)        | 6.3 (9.3)                                    | A (A)        |
| 10  | Martin Luther King Jr. Way/ 52 <sup>nd</sup> Street       | Signal                       | AM        | 18.0                         | B            | 19.7   | B            |
|     |   |                              | PM        | 22.1                         | C            | 23.6   | C            |
| 11  | CHRCO Garage Driveways/52 <sup>nd</sup> Street            | Signal                       | AM        | 12.3                         | B            | 11.9   | B            |
|     |   |                              | PM        | 14.1                         | B            | 15.8   | B            |
| 12  | Dover Street-Hospital Driveway/52 <sup>nd</sup> Street    | SSSC                         | AM        | 1.8 (13.1)                   | A (B)        | 2 (12.7)                                     | A (B)        |
|     |   |                              | PM        | 1.5 (14.7)                   | A (B)        | 2.9 (16.3)                                   | A (C)        |
| 13  | SR 24 Ramps/52 <sup>nd</sup> Street                       | SSSC                         | AM        | 4.8 (13.6)                   | A (B)        | 4.7 (13.7)                                   | A (B)        |
|     |   |                              | PM        | <b>** (**)</b>               | <b>F (F)</b> | <b>** (**)</b>                               | <b>F (F)</b> |
| 14  | Shattuck Avenue/52 <sup>nd</sup> Street                   | Signal                       | AM        | 29.2                         | C            | 30.1   | C            |
|     |   |                              | PM        | 36.0                         | D            | 38.9   | D            |
| 15* | Telegraph Avenue-Claremont Avenue/52 <sup>nd</sup> Street | Signal                       | AM        | 14.3                         | B            | 14.3   | B            |
|     |   |                              | PM        | 17.2                         | B            | 17.2   | B            |
| 16* | Telegraph Avenue/51 <sup>st</sup> Street                  | Signal                       | AM        | 30.6                         | C            | 30.7   | C            |
|     |   |                              | PM        | 45.2                         | D            | 44.8   | D            |
| 17  | SR 24 Ramps/Martin Luther King Jr. Way                    | Signal                       | AM        | 9.4                          | A            | 10.5   | B            |
|     |   |                              | PM        | 19.8                         | B            | 20.8   | C            |
| 18  | West Street/52 <sup>nd</sup> Street                       | AWSC                         | AM        | 8.1                          | A            | 8.2  | A            |
|     |   |                              | PM        | 8.4                          | A            | 8.4  | A            |
| 19  | Genoa Street/52 <sup>nd</sup> Street                      | AWSC                         | AM        | 7.7                          | A            | 7.7  | A            |
|     |   |                              | PM        | 7.6                          | A            | 7.6  | A            |
| 20  | Genoa Street/55 <sup>th</sup> Street                      | SSSC                         | AM        | 1.8 (16.7)                   | A (C)        | 1.8 (16.7)                                   | A (C)        |
|     |   |                              | PM        | 2.1 (17.8)                   | A (C)        | 2.1 (17.9)                                   | A (C)        |
| 21  | Martin Luther King Jr. Way/Garage Driveway                | SSSC                         | AM        | N/A                          | N/A          | 0.1 (9.6)                                    | A (A)        |
|     |   |                              | PM        | N/A                          | N/A          | 0.3 (10.7)                                   | A (B)        |

<sup>a</sup> Signal = intersection is controlled by a traffic signal; AWSC = intersection is controlled by stop-signs on all approaches; SSSC = Intersection is controlled by a stop-sign on the side-street approach;

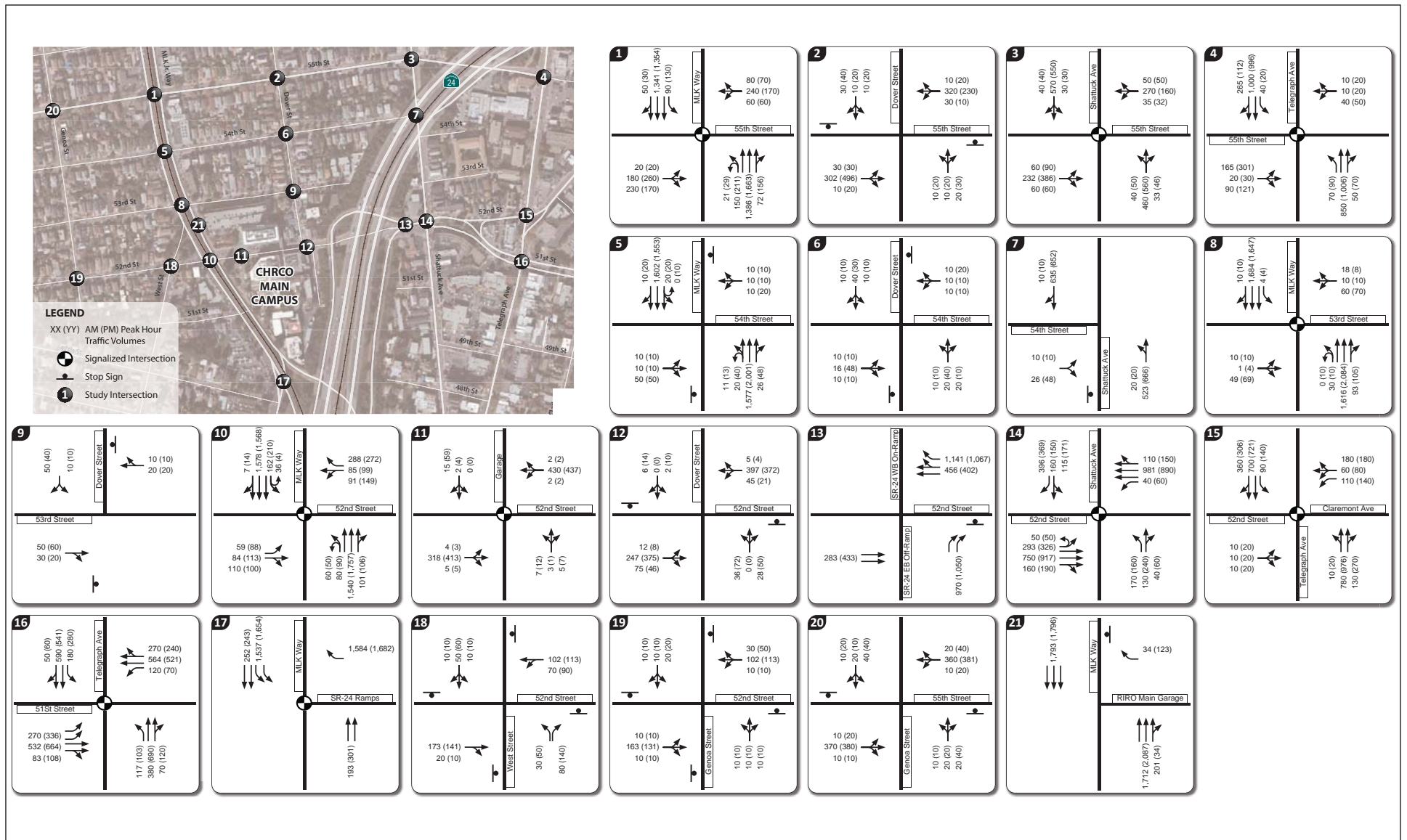
<sup>b</sup> For signalized intersections, average intersection delay and LOS based on the 2000 HCM method is shown. For side-street stop-controlled intersections, delays for worst movement and average intersection delay are shown: intersection average (worst movement)

\* Denotes an intersection located in Downtown or on an arterial providing access to Downtown where LOS E is the LOS standard. For all other intersections, not located in Downtown or on an arterial providing access to Downtown, LOS D is the LOS standard.

\*\* Delay cannot be estimated accurately because the Synchro software does not correctly account for the queues on eastbound 52nd Street at Shattuck Avenue blocking the off-ramp. Reported LOS is based on field observations.

Source: Fehr & Peers, 2014.





LSA

FIGURE V-3



SOURCE: FEHR & PEERS, MAY 2014.

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CHRCO Campus Master Plan Project EIR  
2020 Plus Phase 2 Plus Dover Street Closure Alternative  
Peak Hour Traffic Volumes, Lane Configurations, and Intersection Controls

**Table V-3: 2020 Plus Project Plus Dover Street Closure Alternative Intersection LOS Summary**

|     | Intersection  | Traffic Control <sup>a</sup> | Peak Hour | 2020 No Project              |              | 2020 Plus Phase 2 Plus Dover St. Closure |              |
|-----|---|------------------------------|-----------|------------------------------|--------------|--|--------------|
|     |   |                              |           | Delay <sup>b</sup> (seconds) | LOS          | Delay <sup>b</sup> (seconds)             | LOS          |
| 1   | Martin Luther King Jr. Way/55 <sup>th</sup> Street        | Signal                       | AM        | 22.3                         | C            | 22.7                                     | C            |
|     |   |                              | PM        | 25.9                         | C            | 26.5                                     | C            |
| 2   | Dover Street/55 <sup>th</sup> Street                      | SSSC                         | AM        | 2.5 (15.0)                   | A (B)        | 2.5 (15.2)                               | A (C)        |
|     |   |                              | PM        | 3.4 (17.9)                   | A (C)        | 3.4 (19.3)                               | A (C)        |
| 3   | Shattuck Avenue/55 <sup>th</sup> Street                   | Signal                       | AM        | 19.5                         | B            | 20.0                                     | B            |
|     |   |                              | PM        | 22.4                         | C            | 25.4                                     | C            |
| 4   | Telegraph Avenue/55 <sup>th</sup> Street                  | Signal                       | AM        | 10.7                         | B            | 11.4                                     | B            |
|     |   |                              | PM        | 17.9                         | B            | 21.5                                     | C            |
| 5   | Martin Luther King Jr. Way/54 <sup>th</sup> Street        | SSSC                         | AM        | 1.0 (34.2)                   | A (D)        | <b>1.1 (37.8)</b>                        | <b>A (E)</b> |
|     |   |                              | PM        | <b>1.3 (40.4)</b>            | <b>A (E)</b> | <b>1.3 (43.3)</b>                        | <b>A (E)</b> |
| 6   | Dover Street/54 <sup>th</sup> Street                      | SSSC                         | AM        | 4.3 (9.6)                    | A (A)        | 4.5 (9.8)                                | A (A)        |
|     |   |                              | PM        | 4.9 (9.9)                    | A (A)        | 5.6 (10.3)                               | A (B)        |
| 7   | Shattuck Avenue/54 <sup>th</sup> Street                   | SSSC                         | AM        | 0.7 (18.1)                   | A (C)        | 0.8 (17.4)                               | A (C)        |
|     |   |                              | PM        | 0.7 (18.1)                   | A (C)        | 1 (16.7)                                 | A (C)        |
| 8   | Martin Luther King Jr. Way/53 <sup>rd</sup> Street        | Signal                       | AM        | 4.7                          | A            | 5.5                                      | A            |
|     |   |                              | PM        | 4.4                          | A            | 5.1                                      | A            |
| 9   | Dover Street/53 <sup>rd</sup> Street                      | SSSC                         | AM        | 5.1 (10.1)                   | A (B)        | 6.9 (10.1)                               | A (B)        |
|     |   |                              | PM        | 5.2 (9.8)                    | A (A)        | 7.3 (10.0)                               | A (A)        |
| 10  | Martin Luther King Jr. Way/ 52 <sup>nd</sup> Street       | Signal                       | AM        | 21.2                         | C            | 22.5                                     | C            |
|     |   |                              | PM        | 23.9                         | C            | 25.9                                     | C            |
| 11  | CHRCO Garage Driveways/52 <sup>nd</sup> Street            | Signal                       | AM        | 12.7                         | B            | 12.6                                     | B            |
|     |   |                              | PM        | 14.1                         | B            | 15.2                                     | B            |
| 12  | Dover Street-Hospital Driveway/52 <sup>nd</sup> Street    | SSSC                         | AM        | 2.1 (14.4)                   | A (B)        | 1.9 (13.4)                               | A (B)        |
|     |   |                              | PM        | 2.0 (16.1)                   | A (C)        | 2.9 (18.0)                               | A (C)        |
| 13  | SR 24 Ramps/52 <sup>nd</sup> Street                       | SSSC                         | AM        | 5.4 (15.7)                   | A (C)        | 5.3 (15.7)                               | A (C)        |
|     |   |                              | PM        | <b>** (**)</b>               | <b>F (F)</b> | <b>** (**)</b>                           | <b>F (F)</b> |
| 14  | Shattuck Avenue/52 <sup>nd</sup> Street                   | Signal                       | AM        | 36.0                         | D            | 38.9                                     | D            |
|     |   |                              | PM        | 39.8                         | D            | 43.4                                     | D            |
| 15* | Telegraph Avenue-Claremont Avenue/52 <sup>nd</sup> Street | Signal                       | AM        | 17.8                         | B            | 17.8                                     | B            |
|     |   |                              | PM        | 21.3                         | C            | 21.2                                     | C            |
| 16* | Telegraph Avenue/51 <sup>st</sup> Street                  | Signal                       | AM        | 33.9                         | C            | 34.0                                     | C            |
|     |   |                              | PM        | 49.8                         | D            | 49.7                                     | D            |
| 17  | SR 24 Ramps/Martin Luther King Jr. Way                    | Signal                       | AM        | 11.3                         | B            | 12.8                                     | B            |
|     |   |                              | PM        | 35.0                         | C            | 36.2                                     | D            |
| 18  | West Street/52 <sup>nd</sup> Street                       | AWSC                         | AM        | 8.6                          | A            | 8.6                                      | A            |
|     |   |                              | PM        | 8.8                          | A            | 8.9                                      | A            |
| 19  | Genoa Street/52 <sup>nd</sup> Street                      | AWSC                         | AM        | 8.0                          | A            | 8.1                                      | A            |
|     |   |                              | PM        | 8.0                          | A            | 8.0                                      | A            |
| 20  | Genoa Street/55 <sup>th</sup> Street                      | SSSC                         | AM        | 2.8 (21.3)                   | A (C)        | 2.8 (21.3)                               | A (C)        |
|     |   |                              | PM        | 3.2 (22.5)                   | A (C)        | 3.2 (22.6)                               | A (C)        |
| 21  | Martin Luther King Jr. Way/Garage Driveway                | SSSC                         | AM        | N/A                          | N/A          | 0.1 (9.7)                                | A (A)        |
|     |   |                              | PM        | N/A                          | N/A          | 0.3 (11.0)                               | A (B)        |

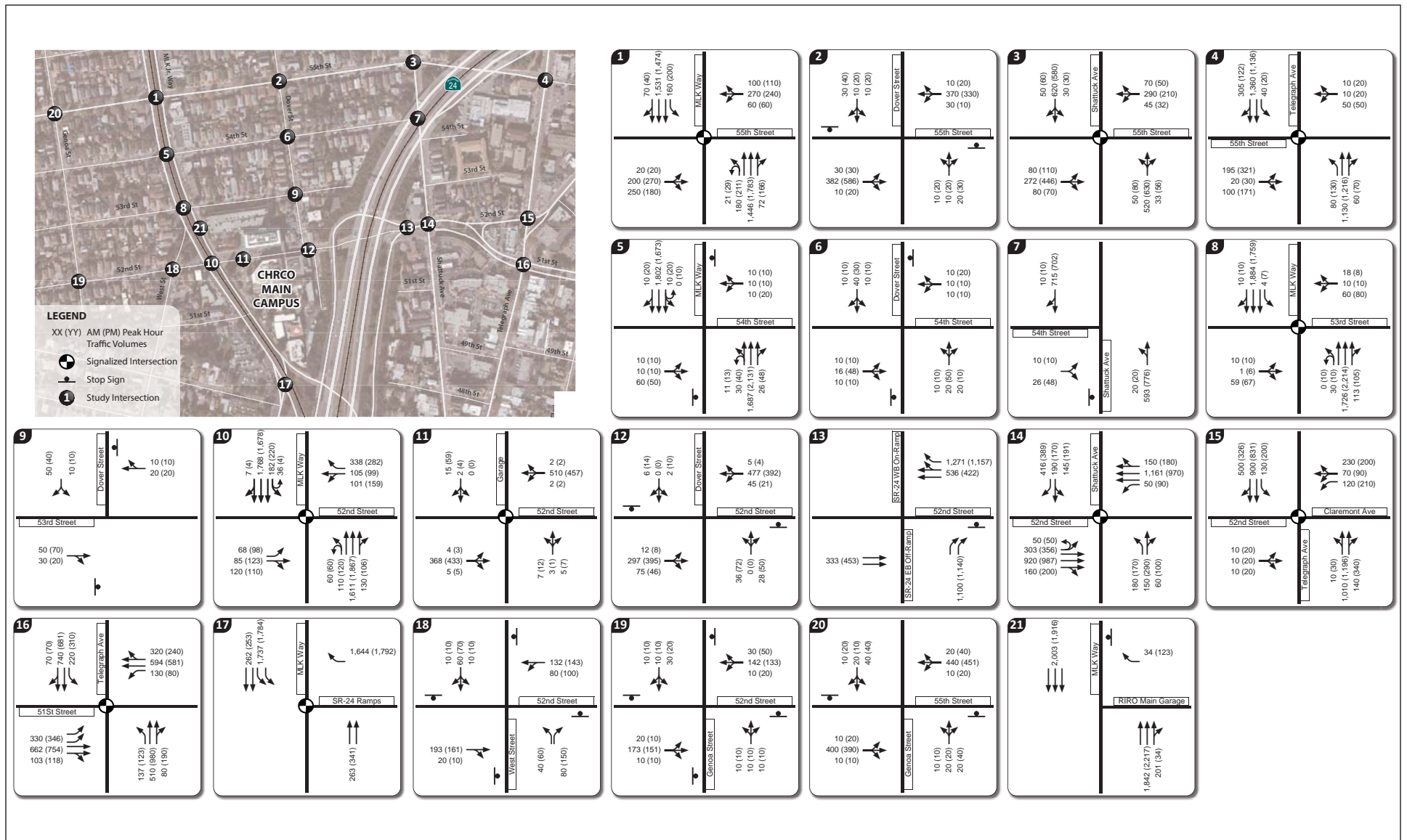
<sup>a</sup> Signal = intersection is controlled by a traffic signal; AWSC = intersection is controlled by stop-signs on all approaches; SSSC = Intersection is controlled by a stop-sign on the side-street approach;

<sup>b</sup> For signalized intersections, average intersection delay and LOS based on the 2000 HCM method is shown. For side-street stop-controlled intersections, delays for worst movement and average intersection delay are shown: intersection average (worst movement)

\* Denotes an intersection located in Downtown or on an arterial providing access to Downtown where LOS E is the LOS standard. For all other intersections, not located in Downtown or on an arterial providing access to Downtown, LOS D is the LOS standard.

\*\* Delay cannot be estimated accurately because the Synchro software does not correctly account for the queues on eastbound 52<sup>nd</sup> Street at Shattuck Avenue blocking the off-ramp. Reported LOS is based on field observations.

Source: Fehr & Peers, 2014.



LSA



FIGURE V-4

SOURCE: FEHR & PEERS, MAY 2014.

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CHRCO Campus Master Plan Project EIR  
2035 Plus Phase 2 Plus Dover Street Closure Alternative  
Peak Hour Traffic Volumes, Lane Configurations, and Intersection Controls

**Table V-4: 2035 Plus Project Plus Dover Street Closure Alternative Intersection LOS Summary**

|     | Intersection   | Traffic Control <sup>a</sup> | Peak Hour | 2035 No Project              |              | 2035 Plus Phase 2 Plus Dover St. Closure |              |
|-----|--|------------------------------|-----------|------------------------------|--------------|--|--------------|
|     |  |                              |           | Delay <sup>b</sup> (seconds) | LOS          | Delay <sup>b</sup> (seconds)             | LOS          |
| 1   | Martin Luther King Jr. Way/55 <sup>th</sup> Street         | Signal                       | AM        | 30.1                         | C            | 30.5                                     | C            |
|     |  |                              | PM        | 34.9                         | C            | 36.6                                     | D            |
| 2   | Dover Street/55 <sup>th</sup> Street                       | SSSC                         | AM        | 2.4 (17.5)                   | A (C)        | 2.4 (17.7)                               | A (C)        |
|     |  |                              | PM        | 3.6 (23.2)                   | A (C)        | 3.7 (25.5)                               | A (D)        |
| 3   | Shattuck Avenue/55 <sup>th</sup> Street                    | Signal                       | AM        | 28.4                         | C            | 29.9                                     | C            |
|     |  |                              | PM        | 36.2                         | D            | 44.8                                     | D            |
| 4   | Telegraph Avenue/55 <sup>th</sup> Street                   | Signal                       | AM        | 15.3                         | B            | 16.1                                     | B            |
|     |  |                              | PM        | 24.8                         | C            | 31.9                                     | C            |
| 5   | Martin Luther King Jr. Way/54 <sup>th</sup> Street         | SSSC                         | AM        | <b>1.1 (39.2)</b>            | <b>A (E)</b> | 1.0 (34.4)                               | A (D)        |
|     |  |                              | PM        | 1.1 (30.4)                   | A (D)        | 1.1 (30.9)                               | A (D)        |
| 6   | Dover Street/54 <sup>th</sup> Street                       | SSSC                         | AM        | 4.3 (9.7)                    | A (A)        | 4.6 (9.9)                                | A (A)        |
|     |  |                              | PM        | 4.7 (10.0)                   | A (A)        | 5.8 (10.6)                               | A (B)        |
| 7   | Shattuck Avenue/54 <sup>th</sup> Street                    | SSSC                         | AM        | 0.8 (22.0)                   | A (C)        | 0.9 (20.4)                               | A (C)        |
|     |  |                              | PM        | 0.8 (19.9)                   | A (C)        | 1.2 (18.8)                               | A (C)        |
| 8   | Martin Luther King Jr. Way/53 <sup>rd</sup> Street         | Signal                       | AM        | 4.9                          | A            | 5.8                                      | A            |
|     |  |                              | PM        | 4.7                          | A            | 5.6                                      | A            |
| 9   | Dover Street/53 <sup>rd</sup> Street                       | SSSC                         | AM        | 5.1 (10.2)                   | A (B)        | 7.0 (10.2)                               | A (B)        |
|     |  |                              | PM        | 5.0 (9.9)                    | A (A)        | 7.5 (10.2)                               | A (B)        |
| 10  | Martin Luther King Jr. Way/ 52 <sup>nd</sup> Street        | Signal                       | AM        | 25.8                         | C            | 27.2                                     | C            |
|     |  |                              | PM        | 26.0                         | C            | 27.2                                     | C            |
| 11  | CHRCO Garage Driveways/52 <sup>nd</sup> Street             | Signal                       | AM        | 13.4                         | B            | 14.0                                     | B            |
|     |  |                              | PM        | 14.2                         | B            | 17.2                                     | B            |
| 12  | Dover Street-Hospital Driveway/52 <sup>nd</sup> Street     | SSSC                         | AM        | 2.0 (15.7)                   | A (C)        | 1.9 (15.6)                               | A (C)        |
|     |  |                              | PM        | 2.0 (16.8)                   | A (C)        | 3.0 (19.3)                               | A (C)        |
| 13  | SR 24 Ramps/52 <sup>nd</sup> Street                        | SSSC                         | AM        | 6.8 (19.9)                   | A (C)        | 6.8 (20.1)                               | A (C)        |
|     |  |                              | PM        | <b>** (**)</b>               | <b>F (F)</b> | <b>** (**)</b>                           | <b>F (F)</b> |
| 14  | Shattuck Avenue/52 <sup>nd</sup> Street                    | Signal                       | AM        | <b>63.4</b>                  | <b>E</b>     | 44.9                                     | D            |
|     |  |                              | PM        | <b>60.9</b>                  | <b>E</b>     | 54.7                                     | D            |
| 15* | Telegraph Avenue-Clairemont Avenue/52 <sup>nd</sup> Street | Signal                       | AM        | 21.0                         | C            | 21.1                                     | C            |
|     |  |                              | PM        | 39.5                         | D            | 37.1                                     | D            |
| 16* | Telegraph Avenue/51 <sup>st</sup> Street                   | Signal                       | AM        | 39.9                         | D            | 39.2                                     | D            |
|     |  |                              | PM        | 70.8                         | E            | 70.2                                     | E            |
| 17  | SR 24 Ramps/Martin Luther King Jr. Way                     | Signal                       | AM        | 15.4                         | B            | 27.1                                     | C            |
|     |  |                              | PM        | 46.2                         | D            | 47.2                                     | D            |
| 18  | West Street/52 <sup>nd</sup> Street                        | AWSC                         | AM        | 9.1                          | A            | 9.1                                      | A            |
|     |  |                              | PM        | 9.4                          | A            | 9.4                                      | A            |
| 19  | Genoa Street/52 <sup>nd</sup> Street                       | AWSC                         | AM        | 8.4                          | A            | 8.4                                      | A            |
|     |  |                              | PM        | 8.2                          | A            | 8.3                                      | A            |
| 20  | Genoa Street/55 <sup>th</sup> Street                       | SSSC                         | AM        | 2.9 (25.6)                   | A (D)        | 2.9 (25.7)                               | A (D)        |
|     |  |                              | PM        | 3.3 (25.9)                   | A (D)        | 3.3 (26.1)                               | A (D)        |
| 21  | Martin Luther King Jr. Way/Garage Driveway                 | SSSC                         | AM        | N/A                          | N/A          | 0.1 (9.9)                                | A (A)        |
|     |  |                              | PM        | N/A                          | N/A          | 0.5 (11.9)                               | A (B)        |

<sup>a</sup> Signal = intersection is controlled by a traffic signal; AWSC = intersection is controlled by stop-signs on all approaches; SSSC = Intersection is controlled by a stop-sign on the side-street approach;

<sup>b</sup> For signalized intersections, average intersection delay and LOS based on the 2000 HCM method is shown. For side-street stop-controlled intersections, delays for worst movement and average intersection delay are shown: intersection average (worst movement)

\* Denotes an intersection located in Downtown or on an arterial providing access to Downtown where LOS E is the LOS standard. For all other intersections, not located in Downtown or on an arterial providing access to Downtown, LOS D is the LOS standard.

\*\* Delay cannot be estimated accurately because the Synchro software does not correctly account for the queues on eastbound 52<sup>nd</sup> Street at Shattuck Avenue blocking the off-ramp. Reported LOS is based on field observations.

Source: Fehr & Peers, 2014.

**(4) Other Considerations.** Closure of City streets to through traffic is subject to City of Oakland's City Council Resolution Number 71056 C.M.S, adopted May 1994, which is consistent with California Vehicle Code (Section 21101). The City of Oakland requires that the following be satisfied to close a street to through traffic or to otherwise vacate a public street:

1. The street is classified as a local street.
2. Unwarranted through traffic is using the street instead of collector and/or arterial streets.
3. 67 percent or more of the residents of the street have petitioned the City to close the street to through traffic.
4. Closure of the street would not adversely affect the health and safety of the residents of the street and neighboring streets.

The application of the above criteria to Dover Street is discussed below:

1. City of Oakland General Plan Land Use and Transportation Element classifies Dover Street as a local street, which satisfies the first criterion above.
2. Currently, about 90 motor vehicles per hour use Dover Street between 52<sup>nd</sup> and 53<sup>rd</sup> Streets during peak hours. It is estimated that about 40 percent of the current traffic (about 35 to 40 peak hour trips) have an origin or destination along Dover Street between 52<sup>nd</sup> and 53<sup>rd</sup> Streets, and about 30 percent of the traffic (about 25 to 30 peak hour trips) have an origin or destination in the surrounding neighborhood, which includes Dover Street north of 53<sup>rd</sup> Street, and 53<sup>rd</sup> and 54<sup>th</sup> Streets. It is estimated that about 30 percent of the traffic (about 25 to 30 peak hour trips) have both origin and destination outside the surrounding area, including the CHRCO campus. These trips can be classified as cut-through traffic that use Dover Street instead of the arterials and collectors in the area, such as Martin Luther King Jr. Way, Shattuck Avenue, and 52<sup>nd</sup> Street. It is estimated that about 50 to 60 percent of the traffic on Dover Street (about 45 to 55 peak hour trips) are generated by CHRCO. These include trips to/from the main campus, the CHRCO buildings on Dover Street, and motorists looking for on-street parking. In addition, as shown in **Figure IV.D-17b** in Chapter IV.D, Transportation and Circulation, Phase 2 is expected to increase the traffic volume on Dover Street by as much as 40 peak hour vehicles. Thus, the use of Dover Street by current and future non-local traffic satisfies the second criterion.
3. Neighborhood support for the closure of Dover Street is currently not known. Therefore, it is not known if the third criterion is satisfied.
4. It is estimated that Dover Street closure would reduce the traffic volume on Dover Street to about 40 peak hour vehicles generated by the uses along Dover Street between 52<sup>nd</sup> and 53<sup>rd</sup> Streets. The rest of the traffic using Dover Street (estimated to be about 90 vehicles consisting of 50 vehicles that currently use Dover Street and about 40 vehicles generated by CHRCO) would divert to other local streets, such as 53<sup>rd</sup> and 54<sup>th</sup> Streets, and arterials and collectors in the area, such as Martin Luther King Jr. Way, Shattuck Avenue, and 52<sup>nd</sup> and 55<sup>th</sup> Street. Overall, it is estimated that Dover Street Closure would increase traffic volumes on other local streets by as much as 20 peak hour trips. In addition, it is estimated that the closure of Dover Street would divert about 700 daily trips by about 0.2 miles (about one to two blocks). These primarily consist of trips with an origin or destination on Dover Street and surrounding neighborhoods. Diversion of current traffic using Dover Street as a cut-through route would not affect VMT because these vehicles would use parallel streets (for

example, cars traveling between southbound Martin Luther King Jr. Way and eastbound 52<sup>nd</sup> Street using 53<sup>rd</sup> Street and Dover Street would divert to Martin Luther King Jr. Way and 52<sup>nd</sup> Street). As shown in **Tables V-2** through **V-4**, all study intersections, including intersections along local streets, would continue to operate at similar conditions regardless of the Dover Street closure, which indicates that Dover Street Closure would have minimal effects on traffic volumes on the nearby streets, satisfying criterion 4.

As described above, the Dover Street Closure alternative would satisfy three of the four criteria outlined in the City of Oakland's resolution above. In addition, the roadway would still be available for through emergency vehicle access. The status of the criterion that requires the support of the local residents is not known at this time.

**e. Air Quality.** Under the Dover Street Closure alternative, demolition and relocation of existing buildings and construction of new buildings would be the same as the proposed project. Interior renovations proposed as part of the project would also be the same. Similar to the proposed project, development at build out would include the expansion of the Central Utility Plant, installation of a new diesel generator, and installation of new boilers. Vehicle trips generated by the proposed project would also be the same. The location of the new helistop would also be the same as the proposed project and, similar to existing and proposed project conditions, helicopter trips would increase by 1 percent through the year 2025 with or without implementation of this alternative. Similar to the proposed project, implementation of SCA AIR-1, which regulates construction emissions, would be required to reduce construction emissions to a less-than-significant level. Also similar to the proposed project, implementation of SCAs AIR-2 and AIR-3, which regulate operational emissions, would be required to reduce potential air quality impacts to a less-than-significant level. Similar to the proposed project, under the Dover Street Closure alternative, average daily construction and operation emissions thresholds would not be exceeded; carbon monoxide (CO) concentrations thresholds would not be exceeded; Toxic Air Contaminants (TACs) emitted from the site would not result in the exposure of sensitive receptors to unacceptable concentrations; and objectionable odors would not be emitted.

**f. Greenhouse Gas Emissions.** Under the Dover Street Closure alternative, demolition and relocation of existing buildings and construction of new buildings would be the same as the proposed project. Interior renovations proposed as part of the project would also be the same. Similar to the proposed project, development at build out would include the expansion of the Central Utility Plant, installation of a new diesel generator, and installation of new boilers. Vehicle trips generated by the proposed project would also be the same. The location of the new helistop would also be the same as the proposed project and, similar to existing and proposed project conditions, helicopter trips would increase by 1 percent through the year 2025 with or without implementation of this alternative. GHG emissions generated by construction and operation of the Dover Street Closure alternative would be similar to the proposed project. However, the closer of Dover Street would divert approximately 700 trips per day by approximately 0.2 miles, resulting in an increase in regional vehicle miles traveled (VMT) of approximately 51,100 miles per year. This would result in an increase in greenhouse gas emissions of approximately 49 tons per year, which would not be considered a substantial increase. Similar to the proposed project, implementation of SCAs GHG-1 and GHG-2 would be required to reduce operational GHG emissions. Similar to the proposed project, total greenhouse gas emissions would not exceed established thresholds or conflict with applicable plan's policies, or regulations adopted for the purposes of reducing greenhouse gas emissions. Overall GHG emissions attributed to

the existing CHRCO campus would be similar under this alternative due to the construction of more energy-efficient buildings and infrastructure, similar to the proposed project.

**g. Noise.** Under the Dover Street Closure alternative, demolition and relocation of existing buildings and construction of new buildings would be the same as the proposed project. Interior renovations proposed as part of the project would also be the same. Similar to the proposed project, vehicle trips generated by the proposed project would also be the same. Traffic noise on Dover Street would however decrease compared to existing conditions, as this street would be closed to through traffic and traffic would be rerouted to other nearby streets. Rerouting of vehicles to other surrounding streets would be unlikely to generate substantial increases in traffic noise on these roadways as much of the cut-through traffic on Dover Street (currently about 90 vehicles per hour) would likely divert to main arterial and collector streets such as Martin Luther King Jr. Way, Shattuck Avenue, and 52<sup>nd</sup> Street, which already have high traffic noise volumes. Except for this condition, noise levels generated by the Dover Street Closure alternative would be nearly identical to the proposed project. In particular, the location of the new helistop would be the same as the proposed project and, similar to existing and proposed project conditions, helicopter trips would increase by 1 percent through the year 2025 with or without implementation of this alternative. Therefore, noise associated with the new helistop location would be the same as that identified for the proposed project. Similar to the proposed project, implementation of SCAs NOI-1 through NOI-7 would be required. Similar to the proposed project's less-than-significant impacts related to noise, under the Dover Street Closure alternative, impacts related to construction-period noise levels would also be less than significant. Specifically, noise generated by the CHRCO campus would not exceed the thresholds established by the City's Noise Ordinance, result in a conflict with the land use compatibility guidelines of the General Plan, or result in a substantial increase in ambient noise levels. In addition, groundborne vibration would not exceed established standards.

**h. Geology and Soils.** Under the Dover Street Closure alternative, demolition and relocation of existing buildings and construction of new buildings would be the same as the proposed project. Interior renovations, including seismic upgrades, proposed as part of the project would also be the same. In particular, acute care functions would be relocated from the A/B and B/C Wings to meet the requirements of SB 1953. Geologic and soil impacts associated with the proposed project would be nearly identical to the proposed project and, similar to the proposed project, implementation of SCAs GEO-1 through GEO-3 would be required. Similar to the less-than-significant impacts identified for the proposed project, implementation of the Dover Street Closure alternative would result in less-than-significant impacts related to exposure of people or structures to substantial risks associated with seismic activity; increased in soil erosion; and unstable soil conditions.

**i. Hydrology and Water Quality.** Under the Dover Street Closure alternative, demolition and relocation of existing buildings and construction of new buildings would be the same as the proposed project. Permeable and impermeable surface conditions would generally be the same as the completed project, as this through road would need to remain open for fire and emergency access. Similar to the proposed project, SCAs HYD-1 through HYD-4, which regulate changes in stormwater pollution and runoff with new development, would be required, as soil disturbance and changes to existing impermeable surface conditions would occur. Similar to the less-than-significant impacts identified for the proposed project, implementation of the Dover Street Closure alternative would result in less-than-significant impacts related to violation of water quality standards and discharge requirements; depletion of groundwater supplies; increased soil erosion and siltation; changes to on- or off-site

flooding conditions; creation of polluted runoff; location within a 100-year flood zone; alteration of the existing drainage pattern of the site; and conflicts with the City's Creek Protection Ordinance.

**j. Hazards and Hazardous Materials.** Under the Dover Street Closure alternative, demolition and relocation of existing buildings and construction of new buildings would be the same as the proposed project. The existing circulation pattern would also be altered, similar to the proposed project, with the addition of the closure of Dover Street to through traffic. Similar to the proposed project, SCAs HAZ-1 through HAZ-13, which regulate the handling of hazardous materials during project construction and operation, would be required. Similar to the less-than-significant impacts identified for the proposed project, implementation of the Dover Street Closure alternative would result in less-than-significant impacts associated with the exposure of the public to hazardous materials or hazardous conditions. Given that the portion of Dover Street that would be closed to through traffic would be less than 600 feet, two emergency access routes would not be required, although fire and emergency access would be provided. Access for fire and police vehicles would be maintained for ingress and egress in both directions and the width of the street would not be altered. Closure of the street would be subject to all applicable regulations, including design and safety standards (including street widths, turn outs, and emergency ingress and egress). Similar to the proposed project, other streets within and bordering the CHRCO campus would have multiple emergency access routes via remaining streets. Therefore, similar to the proposed project, no interference with emergency access or response plans would occur with operation of the Dover Street Closure alternative.

**k. Utilities.** Under the Dover Street Closure alternative demolition and relocation of existing buildings and construction of new buildings would be the same as the proposed project. Proposed utility connections would also be similar, with some possible changes to connections or locations within the vicinity of Dover Street. Water demand, wastewater generation, solid waste generation, and electricity demand would generally be the same as the proposed project. Similar to the proposed project, implementation of SCAs UTL-1 through UTL-5 would be required. Similar to the less-than-significant impacts identified for the proposed project, implementation of the Dover Street Closure alternative would result in less-than-significant impacts related to increased water demand; capacity of existing water or wastewater collection infrastructure or treatment systems; construction of new storm drainage facilities; landfill capacity; and energy demand.

**l. Other CEQA Considerations/Biological Resources.** Similar to the proposed project, under the Dover Street Closure alternative, there would be no impact to agricultural and forestry resources; mineral resources; population and housing; public services and recreation.

Under the Dover Street Closure alternative, the same number of trees would be removed from the site (109 trees) as those identified for the proposed project. Similar to the proposed project, implementation of SCAs BIO-1 through BIO-4 would ensure that impacts to protected trees and biological resources would be less than significant.

## **E. NO CALTRANS PROPERTY ACQUISITION ALTERNATIVE**

The No Caltrans Property Acquisition alternative assumes that the 1.5-acre Caltrans right-of-way would not be acquired or developed and that redevelopment activities would occur within the existing CHRCO campus boundaries, as described below.



## 1. Principal Characteristics

Under the No Caltrans Property Acquisition alternative the existing 1.5-acre area of Caltrans right-of-way located immediately adjacent to and east of the campus would not be acquired or improved as part of Phase 2 development. Currently, the proposed project incorporates this property into the overall redevelopment of the campus in order to accommodate development of the Clinical Support Building, a walking path at the north end of the campus, and development of the Parking Garage at the south end of the campus.

Without acquisition and development of the Caltrans right-of-way, Phase 1 of the proposed project would proceed as described in Chapter III, Project Description. As shown in **Figure V-5**, for Phase 2 development, certain structures would be reconfigured and reduced in size. Specifically, the Clinical Support Building would be reduced in area from 31,300 square feet to 11,825 square feet. In addition, the proposed Parking Garage would be reduced to from 334 parking spaces to 269 parking spaces.

The existing Patient Pavilion would be reduced in size from a 72-bed facility to a 48-bed facility as a result of the Parking Garage shifting to the northwest. The area reduction for the Patient Pavilion would be 101,000 square feet to 83,200 square feet. Although the square footage of each of these facilities would be reduced, the overall building heights would be the same as the proposed project.

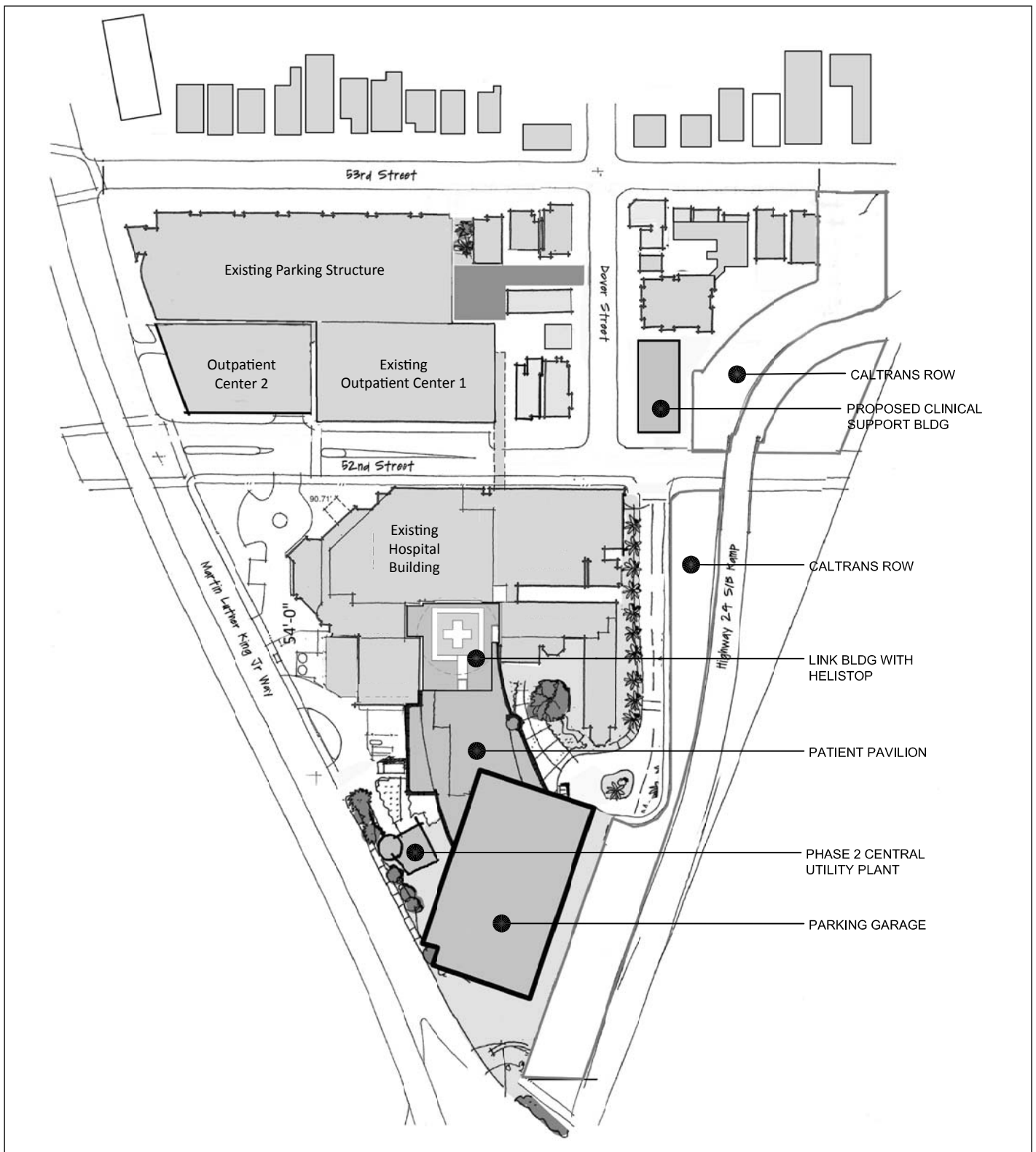
Because the sloped areas of the Caltrans right-of-way would not be redeveloped under this alternative, no new retaining walls would be constructed and no utilities or fencing in this area would need to be relocated. The 52 trees located within this area would not be removed.

Interior renovations proposed as part of the project would be the same or very similar to the proposed project. The location of the new helistop would also be the same as the proposed project and, similar to existing and proposed project conditions, helicopter trips would increase by 1 percent through the year 2025 with or without implementation of this alternative. However, vehicle trips generated by the proposed project would be reduced due to the reduction in square footage for some facilities and the reduced number of hospital beds as compared to the proposed project. All other elements of the proposed project as described in Chapter III, Project Description, would occur under this alternative, including the proposed General Plan Amendment, Rezoning, and related planning approvals.

## 2. Analysis of the No Caltrans Property Acquisition Alternative

The No Caltrans Property Acquisition alternative is evaluated for each environmental topic below. **Table V-5** provides a comparison of the potential impacts of the No Caltrans Property Acquisition alternative with those of the proposed project.

Implementation of the No Caltrans Property Acquisition alternative would only differ from the proposed project in that the proposed Clinical Support Building, Patient Pavilion, and Parking Garage would be reduced in size. This would result in fewer parking spaces and fewer hospital beds on the campus. This alternative would not substantially reduce any of the impacts identified for the project, as there are no impacts that are specifically associated with the acquisition or improvement of the existing Caltrans property, nor would it create new or more severe impacts. This alternative would generally meet the project objectives, it would relocate, replace, and renovate acute care and other hospital functions at the existing campus in accordance with SB1953. However, it would not provide the maximum number of single-family rooms for patients currently in shared rooms or multi-bed wards on the CHRCO campus to the same extent as the proposed project and would reduce the number of parking spaces provided within the campus.



LSA

FIGURE V-5



**a. Land Use and Planning.** Under the No Caltrans Acquisition alternative, demolition and relocation of existing buildings would be the same as the proposed project. Development of Phase 1 would be the same as the proposed project; however, development activities occurring under Phase 2 as described in Chapter III, Project Description, would be reduced when compared to the proposed project. Although all of the same facilities would be built, the overall building footprint of the Clinical Support Building, Patient Pavilion, and Parking Garage would be reduced. Therefore, the intensity of development on the site would be slightly reduced as compared to the proposed project. In addition, no change would be made to the existing 1.5-acre area of Caltrans right-of-way and this area would remain in its current condition. Similar to the proposed project, this alternative would include a General Plan Amendment, Rezoning, Vesting Tentative Map, Planned Unit Development Permit, Conditional Use Permits, and other entitlements, as appropriate. Similar to the proposed project, less than significant impacts related to land use and planning would generally be the same with development of the No Caltrans Property Acquisition alternative.

**b. Aesthetics and Shadow.** Implementation of the No Caltrans Property Acquisition alternative would result in similar demolition and relocation of existing buildings and construction of new buildings as proposed by the project, with the exception that the building footprints of three proposed buildings would be reduced in size. Proposed building heights would be the same as the proposed project. New landscaping proposed for the eastern areas of the campus would be reduced and existing vegetated areas within the existing Caltrans right-of-way would remain. Changes related to visual character and quality, scenic views, light and glare, and shade and shadow would be similar to the proposed project, even with the reduced intensity of development at the corner of 52<sup>nd</sup> Street/Dover Street and in the southern portion of the project site. Similar to the proposed project, implementation of SCA AES-1 and SCA BIO-3 would be required. The less than significant impacts related to aesthetics and shadow identified for the proposed project would generally be the same with development of the No Caltrans Property Acquisition alternative.

**c. Cultural and Historic Resources.** Implementation of the No Caltrans Property Acquisition alternative would result in similar demolition and relocation of existing buildings and construction of new buildings as the proposed by the project, with the exception that the building footprints of three proposed buildings would be reduced in size. These three buildings include the Clinical Support Building, Patient Pavilion, and Parking Garage. The rear portions of the three residential structures that contribute to the 55<sup>th</sup> and Dover Residential District's setting would also be demolished under this alternative as part of construction of the new Family Residence Building, which is a less-than-significant impact of the proposed project. Similar to the proposed project, new construction activities and location of new buildings and associated impacts to the A/B Wing would be less than significant. Implementation of SCAs CUL-1 through CUL-4, which are intended to ensure impacts to cultural and historic resources are less-than-significant, would be required under this alternative. Impacts to historic resources, archaeological resources, paleontological resources and human remains interred outside of formal cemeteries, would be similar to the proposed project and, similar to the proposed project, implementation of the No Caltrans Property Acquisition alternative would result in less-than-significant impacts to cultural and historic resources.

**d. Transportation and Circulation.** Circulation improvements proposed as part of the proposed project would generally be the same under the No Caltrans Property Acquisition alternative. Trip generation could be slightly reduced under this alternative as compared to the proposed project, due to the slight decrease in development intensity and reduction in the number of hospital beds. Similar to the proposed project, the No Caltrans Property Acquisition alternative would result in less-than-

significant impacts related to traffic loads and capacity on surrounding roadways, would not exceed established thresholds for traffic safety, and would not conflict with transportation related policies or plans.

**e. Air Quality.** Under the No Caltrans Property Acquisition alternative, demolition and relocation of existing buildings and construction of new buildings would be similar to the proposed project, with the exception of proposed improvements related to the proposed Clinical Support Building, Patient Pavilion, and Parking Garage. Interior renovations proposed as part of the project would be the same or very similar to the proposed project. Similar to the proposed project, construction of Phases 1 and 2 would include the expansion of the Central Utility Plant, installation of a new diesel generator, and installation of new boilers. The location of the new helistop would also be the same as the proposed project and, similar to existing and proposed project conditions, helicopter trips would increase by 1 percent through the year 2025 with or without implementation of this alternative. However, vehicle trips generated by the proposed project would be reduced due to the reduction in square footage for some facilities and the reduced number of hospital beds as compared to the proposed project. Similar to the proposed project, implementation of SCA AIR-1, which regulates construction emissions, would be required to ensure that construction emissions are less-than-significant. Also similar to the proposed project, implementation of SCAs AIR-2 and AIR-3, which regulate operational emissions, would be required to ensure that potential air quality impacts are less-than-significant. Similar to the proposed project, under the No Caltrans Property Acquisition alternative, average daily construction and operation emissions thresholds would not be exceeded; carbon monoxide (CO) concentrations thresholds would not be exceeded; Toxic Air Contaminants (TACs) emitted from the site would not result in the exposure of sensitive receptors to unacceptable concentrations; and objectionable odors would not be emitted.

**f. Greenhouse Gas Emissions.** Under the No Caltrans Property Acquisition alternative, demolition and relocation of existing buildings and construction of new buildings would be similar to the proposed project, with the exception of proposed improvements related to the proposed Clinical Support Building, Patient Pavilion, and Parking Garage. Interior renovations proposed as part of the project would be the same or very similar. Similar to the proposed project, construction of Phases 1 and 2 would include the expansion of the Central Utility Plant, installation of a new diesel generator, and installation of new boilers. The location of the new helistop would also be the same as the proposed project and, similar to existing and proposed project conditions, helicopter trips would increase by 1 percent through the year 2025 with or without implementation of this alternative. However, vehicle trips generated by the proposed project would be reduced due to the reduction in square footage for some facilities and the reduced number of hospital beds as compared to the proposed project. GHG emissions generated by construction and operation of the No Caltrans Property Acquisition alternative would be similar to the proposed project. Similar to the proposed project, implementation of SCAs GHG-1 and GHG-2 would be required to ensure that operational GHG emissions impacts are less than significant. Similar to the proposed project, total greenhouse gas emissions would not exceed established thresholds or conflict with applicable plan's policies, or regulations adopted for the purposes of reducing greenhouse gas emissions.

**g. Noise.** Under the No Caltrans Property Acquisition alternative, demolition and relocation of existing buildings and construction of new buildings would be the similar to the proposed project. In particular, the location of the new helistop would be the same as the proposed project and, similar to existing and proposed project conditions, helicopter trips would increase by 1 percent through the year 2025 with or without implementation of this alternative. Therefore, noise associated with the

new helistop location would be the same as that identified for the proposed project. However, vehicle trips generated by the proposed project would be reduced due to the reduction in square footage for some facilities and the reduced number of hospital beds as compared to the proposed project. Therefore, operational noise levels generated by the No Caltrans Property Acquisition alternative would be slightly less than the proposed project. Similar to the proposed project, implementation of SCAs NOI-1 through NOI-7 would be required. Similar to the proposed project's less-than-significant impacts related to noise, under the No Caltrans Property Acquisition alternative, impacts related to construction-period noise levels would also be less than significant. Specifically, noise generated by the CHRCO campus would not exceed the thresholds established by the City's Noise Ordinance, result in a conflict with the land use compatibility guidelines of the General Plan, or result in a substantial increase in ambient noise levels. In addition, groundborne vibration would not exceed established standards.

**h. Geology and Soils.** Under the No Caltrans Property Acquisition alternative, demolition and relocation of existing buildings and construction of new buildings would be similar to the proposed project. Interior renovations, including some seismic upgrades, proposed as part of the project would also be similar. In particular, acute care functions would be relocated from the A/B and B/C Wings to meet the requirements of SB 1953. Under this alternative, Phase 2 would not include acquisition and improvement of the existing Caltrans right-of-way. Therefore, the retaining walls proposed within the Caltrans right-of-way would not be constructed, and the project would not be subject to Caltrans Seismic Design Criteria, the Caltrans Geotechnical Services Design Manual, or other Caltrans standard specifications. Geologic and soil impacts associated with the proposed project would otherwise be very similar to the proposed project. Similar to the proposed project, implementation of SCAs GEO-1 through GEO-3 would be required, and implementation of this alternative would result in less-than-significant impacts related to exposure of people or structures to substantial risks associated with seismic activity; increased in soil erosion; and unstable soil conditions.

**i. Hydrology and Water Quality.** Under the No Caltrans Property Acquisition alternative demolition and relocation of existing buildings and construction of new buildings would be similar to the proposed project, as would permeable and impermeable surface conditions. Similar to the proposed project, SCAs HYD-1 through HYD-4, which regulate changes in stormwater pollution and runoff with new development, would be required, as soil disturbance and changes to existing impermeable surface conditions would occur. Similar to the proposed project, implementation of the No Caltrans Property Acquisition alternative would result in less-than-significant impacts related to violation of water quality standards and discharge requirements; depletion of groundwater supplies; increased soil erosion and siltation; changes to on- or off-site flooding conditions; creation of polluted runoff; location within a 100-year flood zone; alteration of the existing drainage pattern of the site; and conflicts with the City's Creek Protection Ordinance.

**j. Hazards and Hazardous Materials.** Under the No Caltrans Property Acquisition alternative, demolition and relocation of existing buildings and construction of new buildings would be similar to the proposed project. Unlike the proposed project, it is less likely that aerially deposited lead would be encountered in site soils during Phase 2 construction activities since no work would take place within the areas immediately adjacent to SR 24. However, similar to the proposed project, SCAs HAZ-1 through HAZ-13, which regulate the handling of hazardous materials during project construction and operation, would be required. Similar to the proposed project, implementation of the No Caltrans Property Acquisition alternative would result in less-than-significant impacts associated with

the exposure of the public to hazardous materials or hazardous conditions and interference with emergency access or response plans would not occur.

**k. Utilities.** Under the No Caltrans Property Acquisition alternative demolition and relocation of existing buildings and construction of new buildings would be similar to the proposed project. Proposed utility connections would also be similar, with some possible changes to connections or locations within the vicinity the extension of the internal driveway south of 52<sup>nd</sup> Street in the vicinity of Dover Street, as the location of this driveway may change slightly without acquisition of the Caltrans right-of-way. Water demand, wastewater generation, solid waste generation, and electricity demand would be similar to the proposed project, although slightly reduced given the reduction in overall building square footage and the reduced number of hospital beds. Similar to the proposed project, implementation of SCAs UTL-1 through UTL-5 would be required. Similar to the proposed project, implementation of the No Caltrans Property Acquisition alternative would result in less-than-significant impacts related to increased water demand; capacity of existing water or wastewater collection infrastructure or treatment systems; construction of new storm drainage facilities; landfill capacity; and energy demand.

**l. Other CEQA Considerations/Biological Resources.** Similar to the proposed project, under the No Caltrans Property Acquisition alternative, there would be no impact to agricultural and forestry resources; mineral resources; population and housing; public services and recreation.

Under the No Caltrans Property Acquisition alternative, approximately 57 trees would be removed from the CHRCO site and no trees would be removed from the Caltrans property (or approximately 52 fewer trees than identified for the proposed project), as this area would not be part of the proposed project. Similar to the less-than-significant impacts identified for the proposed project with implementation of SCAs BIO-1 through BIO-4, implementation of the No Caltrans Property Acquisition alternative would not result in a significant impact to biological resources.

## **F. EXISTING GENERAL PLAN AND ZONING ALTERNATIVE**

The Existing General Plan and Zoning Alternative would result in redevelopment of the campus in compliance with the existing General Plan and zoning designations that apply to the site, as described below.

### **1. Principal Characteristics**

Under the Existing General Plan and Zoning alternative, the proposed General Plan Amendment to change the land use designation of the lots just west of and east of Dover Street, which are currently designated Mixed Housing Type Residential, to Institutional would not occur. In addition, the lots that are zoned within the RM-2 District would not be rezoned to S-1 (refer to Figure III-5 in Chapter III, Project Description). Demolition or relocation of existing structures and construction of new buildings would generally be the same as the proposed project for Phase 1; however, demolition of the rear façades of three existing buildings on 53<sup>rd</sup> Street and construction of the new Family Residence Building would not occur under this alternative and the proposed Clinical Support

Building would be limited to a height of 30 feet, as further described below.<sup>3</sup> Vesting Tentative Map, a Planned Unit Development Permit, Conditional Use Permits, and other entitlements would continue to be pursued under this alternative, as appropriate. In addition, acquisition of the existing Caltrans right-of-way would also occur.

Both the Mixed Housing Type Residential General Plan designation and the RM-2 zoning classification are primarily intended for the development of residential uses and associated neighborhood businesses. Semi-transient uses are prohibited in the RM-2 District and building heights are limited to 30 feet.

Under this alternative, all proposed redevelopment activities associated with Phase 1 development would proceed as described in Chapter III, Project Description, as development of OPC2, expansion of the Central Utility Plant, and the new access driveway to the existing maintenance area would occur within areas that are already designated as Institutional in the General Plan. In addition, with the exception of a portion of the proposed maintenance access driveway, these areas are also zoned S-1. The existing RM-2 zoning would not affect development of the driveway.

Development of Phase 2 would also proceed as described in Chapter III, Project Description, for properties located west of Dover Street and south of 52<sup>nd</sup> Street. However, redevelopment activities east of Dover Street and north of 52<sup>nd</sup> Street would be subject to the RM-2 zoning requirements. The existing Family House received a Conditional Use Permit for a residential care facility in 1987. The Bureau of Planning has determined that a semi-transient activity is a more appropriate land use classification for this operation. Construction of the new Family Residence Building would not be permitted without a change in the applicable zoning as semi-transient uses are prohibited in the RM-2 District. Therefore, this alternative assumes that the three existing residential structures located on 53<sup>rd</sup> Street that would be demolished by the proposed project (with retention of the existing building façades) would remain under this alternative and would continue to be used as office space. The existing modular building would however still be removed and the two residential structures located on 52<sup>nd</sup> Street would be relocated to the site of the demolished building to allow construction of the Clinical Support Building and would continue to be used as office space.

The Clinical Support Building would also be constructed under this alternative, as this office use supporting the existing medical facility is conditionally permitted within the RM-2 District. However, the height of this proposed 31,300 square-foot structure would be reduced from 3 stories (40 feet) to 2 stories (30 feet), when compared to the proposed project. Consequently, the size of the proposed building would also be reduced to about 21,300 square feet. The additional 10,000 square feet of use would likely be absorbed by newly constructed and renovated facilities within the campus, including the three existing residential buildings on 53<sup>rd</sup> Street, as these buildings would not be demolished and the existing 4,413 square feet of office uses in these buildings would not be displaced.

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<sup>3</sup> A minor height variance could be requested to increase the height of the structure and a major variance for semi-transient uses would be requested to bring these uses into compliance with existing City regulations. However, such a request is not considered as part of this alternative.

## 2. Analysis of the Existing General Plan and Zoning Alternative

The Existing General Plan and Zoning alternative is evaluated for each environmental topic below. **Table V-5** provides a comparison of the potential impacts of the Existing General Plan and Zoning alternative with those of the proposed project.

Implementation of the Existing General Plan and Zoning alternative would only differ from the proposed project in that the Family Residence Building would not be developed and other demolition and construction activities east of Dover Street would be slightly reduced in scale. This alternative would not substantially reduce any of the impacts identified for the project, nor would it create new or more severe impacts, although less-than-significant project impacts related to aesthetics and shadow would be slightly reduced. This alternative would not enhance family-centered care to the same extent as the proposed project; however, this alternative would generally meet most of the project objectives.

**a. Land Use and Planning.** Under the Existing General Plan and Zoning alternative, demolition and relocation of existing buildings and construction of new buildings would conform to the existing underlying General Plan and zoning designations that are applicable to various properties within the CHRCO campus boundaries. Development of Phase 1 would be the same as the proposed project; however, development of Phase 2 as described in Chapter III, Project Description would be constrained by the land use controls specified by the RM-2 District. The new Family Residence Building would not be constructed and the size of the proposed Clinical Support Building would be reduced. Therefore, the intensity of development on the site would be slightly reduced as compared to the proposed project. Similar to the proposed project, this alternative would include a Vesting Tentative Map, Planned Unit Development Permit, Conditional Use Permits, and other entitlements as appropriate. Similar to the proposed project, less than significant impacts related to land use and planning would generally be the same with development of the Existing General Plan and Zoning alternative. No policy conflicts would result as the project would conform to the existing General Plan and zoning designations applicable to the site.

**b. Aesthetics and Shadow.** Implementation of the Existing General Plan and Zoning alternative would result in similar demolition and relocation of existing buildings and construction of new buildings as proposed by the project, with the exception that three of the residential buildings on 53<sup>rd</sup> Street would be retained in their entirety, the proposed Family Residence Building would not be constructed, and the Clinical Support Building would be reduced in size. Proposed changes to the existing landscaping on the campus would also be similar to the proposed project. Changes related to visual character and quality, scenic views, light and glare, and shade and shadow would be similar to the proposed project, even with the reduced intensity of development east of Dover Street. Similar to the proposed project, implementation of SCA AES-1 and SCA BIO-3 would be required. The less than significant impacts related to aesthetics and shadow identified for the proposed project would generally be the same with development of the Existing General Plan and Zoning alternative.

**c. Cultural and Historic Resources.** Implementation of the Existing General Plan and Zoning alternative would not result in the demolition of the rear façades of the three residential structures that contribute to the 55<sup>th</sup> and Dover Residential District's setting, which is a less-than-significant impact of the proposed project. Similar to the proposed project, impacts to the historic A/B Wing would be less than significant. Implementation of SCAs CUL-1 through CUL-4, which are intended to reduce impacts to cultural and historic resources to a less-than-significant level, would be required under this alternative. Impacts to historic resources, archaeological resources, paleontological resources and



human remains interred outside of formal cemeteries, would be similar to the proposed project and, similar to the proposed project, implementation of the Existing General Plan and Zoning alternative would result in less-than-significant impacts to cultural and historic resources.

**d. Transportation and Circulation.** Circulation improvements proposed as part of the proposed project would generally be the same under the Existing General Plan and Zoning alternative. Trip generation could be slightly reduced under this alternative as compared to the proposed project, due to the slight decrease in development intensity east of Dover Street. Similar to the proposed project, the Existing General Plan and Zoning alternative would result in less-than-significant impacts related to traffic loads and capacity on surrounding roadways, would not exceed established thresholds for traffic safety, and would not conflict with transportation related policies or plans.

**e. Air Quality.** Under the Existing General Plan and Zoning alternative, demolition and relocation of existing buildings and construction of new buildings would be similar to the proposed project, with the exception of proposed improvements related to the Family Residence Building and Clinical Support Building. Interior renovations proposed as part of the project would be the same or very similar. Similar to the proposed project, construction of Phases 1 and 2 would include the expansion of the Central Utility Plant, installation of a new diesel generator, and installation of new boilers. The location of the new helistop would also be the same as the proposed project and, similar to existing and proposed project conditions, helicopter trips would increase by 1 percent through the year 2025 with or without implementation of this alternative. Vehicle trips generated by the proposed project would also be the same or very similar. Similar to the proposed project, implementation of SCA AIR-1, which regulates construction emissions, would be required to reduce construction emissions to a less-than-significant level. Also similar to the proposed project, implementation of SCAs AIR-2 and AIR-3, which regulate operational emissions, would be required to reduce potential air quality impacts to a less-than-significant level. Similar to the proposed project, under the Existing General Plan and Zoning alternative, average daily construction and operation emissions thresholds would not be exceeded; carbon monoxide (CO) concentrations thresholds would not be exceeded; Toxic Air Contaminants (TACs) emitted from the site would not result in the exposure of sensitive receptors to unacceptable concentrations; and objectionable odors would not be emitted.

**f. Greenhouse Gas Emissions.** Under the Existing General Plan and Zoning alternative, demolition and relocation of existing buildings and construction of new buildings would be similar to the proposed project, with the exception of proposed improvements related to the Family Residence Building and Clinical Support Building. Interior renovations proposed as part of the project would be the same or very similar. Similar to the proposed project, construction of Phases 1 and 2 would include the expansion of the Central Utility Plant, installation of a new diesel generator, and installation of new boilers. The location of the new helistop would also be the same as the proposed project and, similar to existing and proposed project conditions, helicopter trips would increase by 1 percent through the year 2025 with or without implementation of this alternative. Vehicle trips generated by the proposed project would also be the same or very similar. GHG emissions generated by construction and operation of the Existing General Plan and Zoning alternative would be similar to the proposed project. Similar to the proposed project, implementation of SCAs GHG-1 and GHG-2 would be required to reduce operational GHG emissions. Similar to the proposed project, total greenhouse gas emissions would not exceed established thresholds or conflict with applicable plan's policies, or regulations adopted for the purposes of reducing greenhouse gas emissions. Overall GHG emissions attributed to the CHRCO campus would be reduced under this alternative, similar to the proposed project.

**g. Noise.** Under the Existing General Plan and Zoning alternative, demolition and relocation of existing buildings and construction of new buildings would be similar to the proposed project. In particular, the location of the new helistop would be the same as the proposed project and, similar to existing and proposed project conditions, helicopter trips would increase by 1 percent through the year 2025 with or without implementation of this alternative. Therefore, noise associated with the new helistop location would be the same as that identified for the proposed project. Vehicle trips generated by the proposed project would also be the same. However, fewer construction activities would take place on 53<sup>rd</sup> Street because the rear façades of the three existing residential buildings would not be demolished and incorporated into a new building. Except for this condition, noise levels generated by the Existing General Plan and Zoning alternative would be similar to the proposed project. Similar to the proposed project, implementation of SCAs NOI-1 through NOI-7 would be required. Similar to the proposed project's less-than-significant impacts related to noise, under the Existing General Plan and Zoning alternative, impacts related to construction- or operation-period noise levels would also be less than significant. Specifically, noise generated by the CHRCO campus would not exceed the thresholds established by the City's Noise Ordinance, result in a conflict with the land use compatibility guidelines of the General Plan, or result in a substantial increase in ambient noise levels. In addition, groundborne vibration would not exceed established standards.

**h. Geology and Soils.** Under the Existing General Plan and Zoning alternative, demolition and relocation of existing buildings and construction of new buildings would be similar to the proposed project. Interior renovations, including seismic upgrades, proposed as part of the project would also be similar. In particular, acute care functions would be relocated from the A/B and B/C Wings to meet the requirements of SB 1953. Geologic and soil impacts associated with the proposed project would be very similar to the proposed project and, also similar to the proposed project, implementation of SCAs GEO-1 through GEO-3 would be required. Similar to the less-than-significant impacts identified for the proposed project, implementation of the Existing General Plan and Zoning alternative would result in less-than-significant impacts related to exposure of people or structures to substantial risks associated with seismic activity; increased in soil erosion; and unstable soil conditions.

**i. Hydrology and Water Quality.** Under the Existing General Plan and Zoning alternative demolition and relocation of existing buildings and construction of new buildings would be similar to the proposed project. Permeable and impermeable surface conditions would also be similar to the completed project. Similar to the proposed project, SCAs HYD-1 through HYD-4, which regulate changes in stormwater pollution and runoff with new development, would be required, as soil disturbance and changes to existing impermeable surface conditions would occur. Similar to the less-than-significant impacts identified for the proposed project, implementation of the Existing General Plan and Zoning alternative would result in less-than-significant impacts related to violation of water quality standards and discharge requirements; depletion of groundwater supplies; increased soil erosion and siltation; changes to on- or off-site flooding conditions; creation of polluted runoff; location within a 100-year flood zone; alteration of the existing drainage pattern of the site; and conflicts with the City's Creek Protection Ordinance.

**j. Hazards and Hazardous Materials.** Under the Existing General Plan and Zoning alternative, demolition and relocation of existing buildings and construction of new buildings would be similar to the proposed project, with the exception that fewer buildings would be demolished. The existing circulation pattern would also be altered, similar to the proposed project. Similar to the proposed project, SCAs HAZ-1 through HAZ-13, which regulate the handling of hazardous materials during

project construction and operation, would be required. Similar to the less-than-significant impacts identified for the proposed project, implementation of the Existing General Plan and Zoning alternative would result in less-than-significant impacts associated with the exposure of the public to hazardous materials or hazardous conditions. Similar to the proposed project, no interference with emergency access or response plans would occur with operation of the Existing General Plan and Zoning alternative.

**k. Utilities.** Under the Existing General Plan and Zoning alternative demolition and relocation of existing buildings and construction of new buildings would be similar to the proposed project. Proposed utility connections would also be similar, with some possible changes to connections or locations within the vicinity of 53<sup>rd</sup> Street. Water demand, wastewater generation, solid waste generation, and electricity demand would be similar as the proposed project. Similar to the proposed project, implementation of SCAs UTL-1 through UTL-5 would be required. Similar to the less-than-significant impacts identified for the proposed project, implementation of the Existing General Plan and Zoning alternative would result in less-than-significant impacts related to increased water demand; capacity of existing water or wastewater collection infrastructure or treatment systems; construction of new storm drainage facilities; landfill capacity; and energy demand.

**l. Other CEQA Considerations/Biological Resources.** Similar to the proposed project, under the Existing General Plan and Zoning alternative, there would be no impact to agricultural and forestry resources; mineral resources; population and housing; public services and recreation.

Under the Existing General Plan and Zoning alternative, approximately 104 trees would be removed from the CHRCO site and adjacent Caltrans property (or approximately 5 additional trees when compared to the proposed project). Similar to the less-than-significant impacts identified for the proposed project with implementation of SCAs BIO-1 through BIO-4, implementation of the Existing General Plan and Zoning alternative would not result in a significant impact to biological resources.

## **G. ENVIRONMENTALLY SUPERIOR ALTERNATIVE**

CEQA requires that the EIR identify the environmentally superior alternative in the strict sense that environmental impacts associated with its implementation would be the least of all scenarios examined (including the proposed project). As discussed in Chapter IV, with implementation of the City's Standard Conditions of Approval, all of the potential impacts of the proposed project would be less than significant. While the No Project alternative would be technically superior in the sense that no substantial demolition or construction activities would need to take place on the campus, and the City's standard conditions would not need to be implemented, it would not reduce any significant impacts when compared to the proposed project and it would also fail to achieve any of the project's objectives.

In cases like this where the No Project alternative is the environmentally superior alternative, CEQA requires that a second most environmentally superior alternative be identified. Comparison of the environmental impacts associated with each alternative as described above, indicates that the Existing General Plan and Zoning alternative would result in an incrementally smaller development footprint than the proposed project, which would result in a slight reduction of all of the already less than significant physical environmental impacts identified for the proposed project. Therefore, the Existing General Plan and Zoning alternative is considered the environmentally superior alternative.

**Table V-5: Summary of Project and Alternative Impacts**

| Environmental Impacts   | Level of Significance Without Mitigation |            |                      |                                  |                                  | Level of Significance With Mitigation or Standard SCA |            |                      |                                  |                                  |
|---|--|------------|----------------------|----------------------------------|----------------------------------|---|------------|----------------------|----------------------------------|----------------------------------|
|   | Proposed Project                         | No Project | Dover Street Closure | No Caltrans Property Acquisition | Existing General Plan and Zoning | Proposed Project                                      | No Project | Dover Street Closure | No Caltrans Property Acquisition | Existing General Plan and Zoning |
| <b>A. LAND USE AND PLANNING</b>   |  |            |                      |                                  |                                  |   |            |                      |                                  |                                  |
| <i>No significant land use or planning policy impacts would occur</i>   | None                                     | None       | None                 | None                             | None                             | None  | None       | None                 | None                             | None                             |
| <b>B. AESTHETICS AND SHADOW</b>   |  |            |                      |                                  |                                  |   |            |                      |                                  |                                  |
| <i>No significant impacts related to visual resources, light, glare, or shadow would occur with implementation of the City Standard Conditions of Approval</i>                        | LTS                                      | None       | ~LTS                 | ~LTS                             | ~LTS                             | LTS   | None       | ~LTS                 | ~LTS                             | ~LTS                             |
| <b>C. CULTURAL AND HISTORIC RESOURCES</b>   |  |            |                      |                                  |                                  |   |            |                      |                                  |                                  |
| <i>No significant impacts to historic, archaeological, paleontological, or Native American resources would occur with implementation of the City Standard Conditions of Approval.</i> | LTS                                      | None       | >LTS                 | ~LTS                             | <LTS                             | LTS   | None       | >LTS                 | ~LTS                             | <LTS                             |
| <b>D. TRANSPORTATION AND CIRCULATION</b>  |  |            |                      |                                  |                                  |   |            |                      |                                  |                                  |
| <i>No significant transportation-related impacts would occur with implementation of the City Standard Conditions of Approval.</i>   | LTS                                      | None       | <LTS                 | ~LTS                             | <LTS                             | LTS   | None       | <LTS                 | ~LTS                             | <LTS                             |
| <b>E. AIR QUALITY</b>   |  |            |                      |                                  |                                  |   |            |                      |                                  |                                  |
| <i>No significant air quality impacts would occur with implementation of the City Standard Conditions of Approval.</i>  | LTS                                      | None       | ~LTS                 | ~LTS                             | <LTS                             | LTS   | None       | ~LTS                 | ~LTS                             | <LTS                             |
| <b>F. GREENHOUSE GAS EMISSIONS</b>  |  |            |                      |                                  |                                  |   |            |                      |                                  |                                  |
| <i>No significant impacts as a result of increased greenhouse gas emissions would occur with implementation of the City Standard Conditions of Approval.</i>                          | LTS                                      | None       | ~LTS                 | ~LTS                             | <LTS                             | LTS   | None       | ~LTS                 | ~LTS                             | <LTS                             |

**Table V-5: Summary of Project and Alternative Impacts**

|   | Level of Significance Without Mitigation |            |                      |                                  |                                  | Level of Significance With Mitigation or Standard SCA |            |                      |                                  |                                  |
|---|--|------------|----------------------|----------------------------------|----------------------------------|---|------------|----------------------|----------------------------------|----------------------------------|
|   | Proposed Project                         | No Project | Dover Street Closure | No Caltrans Property Acquisition | Existing General Plan and Zoning | Proposed Project                                      | No Project | Dover Street Closure | No Caltrans Property Acquisition | Existing General Plan and Zoning |
| <b>Environmental Impacts</b>  |  |            |                      |                                  |                                  |   |            |                      |                                  |                                  |
| <b>G. NOISE</b>   |  |            |                      |                                  |                                  |   |            |                      |                                  |                                  |
| <i>No significant construction period noise or vibration impacts would occur with implementation of the City Standard Conditions of Approval.</i> | LTS                                      | None       | ~LTS                 | ~LTS                             | <LTS                             | LTS   | None       | ~LTS                 | ~LTS                             | <LTS                             |
| <b>H. GEOLOGY AND SOILS</b>   |  |            |                      |                                  |                                  |   |            |                      |                                  |                                  |
| <i>No significant soil, geology, and seismicity impacts would occur with implementation of the City Standard Conditions of Approval.</i>          | LTS                                      | None       | ~LTS                 | <LTS                             | <LTS                             | LTS   | None       | ~LTS                 | <LTS                             | <LTS                             |
| <b>I. HYDROLOGY AND WATER QUALITY</b>   |  |            |                      |                                  |                                  |   |            |                      |                                  |                                  |
| <i>No significant hydrology or water quality impacts would occur with implementation of the City Standard Conditions of Approval.</i>             | LTS                                      | None       | ~LTS                 | <LTS                             | <LTS                             | LTS   | None       | ~LTS                 | <LTS                             | <LTS                             |
| <b>J. HAZARDS AND HAZARDOUS MATERIALS</b>   |  |            |                      |                                  |                                  |   |            |                      |                                  |                                  |
| <i>No significant public health or hazards impacts would occur with implementation of the City Standard Conditions of Approval.</i>               | LTS                                      | None       | ~LTS                 | <LTS                             | <LTS                             | LTS   | None       | ~LTS                 | <LTS                             | <LTS                             |
| <b>K. UTILITIES</b>   |  |            |                      |                                  |                                  |   |            |                      |                                  |                                  |
| <i>No significant impact to utilities or infrastructure would occur with implementation of the City Standard Conditions of Approval.</i>          | LTS                                      | None       | ~LTS                 | <LTS                             | ~LTS                             | LTS   | None       | ~LTS                 | <LTS                             | ~LTS                             |
| <b>L. OTHER CEQA CONSIDERATIONS/BIOLOGICAL RESOURCES</b>  |  |            |                      |                                  |                                  |   |            |                      |                                  |                                  |
| <i>No significant impact to biological resources would occur with implementation of the City Standard Conditions of Approval.</i>                 | LTS                                      | None       | ~LTS                 | <LTS                             | ~LTS                             | LTS   | None       | ~LTS                 | <LTS                             | ~LTS                             |

**Notes:**

SU = Significant and unavoidable

S = Significant

LTS = Less than significant

~S = Similar to proposed project

<S = Incrementally **less** than proposed project>S = Incrementally **greater** than proposed project

Source: LSA Associates, Inc., 2014.

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## VI. OTHER CEQA CONSIDERATIONS

As required by CEQA, this chapter discusses the following types of impacts that could result from implementation of the proposed project: growth-inducing impacts; significant irreversible changes; unavoidable significant effects; and cumulative impacts. Less-than-significant impacts of the project that are not addressed in the topical section of Chapter IV of this EIR are also discussed.

### A. GROWTH INDUCEMENT

Section 15126.2(d) of the *CEQA Guidelines* requires that an EIR should discuss "...the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment."<sup>1</sup> Growth can be induced in a number of ways, including through the elimination of obstacles to growth, through the stimulation of economic activity within the region, or through precedent-setting action. Examples of projects likely to have significant growth-inducing impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions or industrial parks in areas that are currently only sparsely developed or are undeveloped. Typically, redevelopment of projects on infill sites that are surrounded by existing urban uses are not considered growth-inducing because redevelopment by itself usually does not facilitate development intensification on adjacent sites.

Because the proposed project consists of the redevelopment of an existing medical facility and addition of related uses adjacent to these facilities on properties currently owned and operated by CHRCO, many of which are already being used in connection with the medical facility, the project would not result in growth-inducing effects. The project would not foster economic or population growth beyond such growth already anticipated as a result of the City's recent economic revitalization. The project site is located in a developed area fully served by public utilities and there are no significant undeveloped areas adjacent to the project site. The project also would not remove any obstacles that would help facilitate growth that could significantly affect the physical environment. In addition, the proposed project does not include housing;<sup>2</sup> therefore, it would not directly induce an increase in residential population.

Indirect population growth associated with the proposed project could occur in association with job creation. The economic stimulus generated by construction of the proposed project could result in the creation of new construction-related jobs. In addition, the increase in hospital care facility space and medical research space that would be built as part of the project would generate more employees. There are currently a total of 2,166 hospital employees on campus on any given weekday. It is

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<sup>1</sup> *CEQA Guidelines*, 2013. §15126.2(d).

<sup>2</sup> The proposed Family Residence Building is short-term housing for families of hospital patients. This semi-transient residential use would not add permanent population to the City.

estimated that at project build out (completion of Phase 2), the hospital would employ an additional 205 persons (about a 9 percent increase). However, the jobs created during both the construction and operation phases of the project would not be substantial in the context of job growth in Oakland and the region. The Association of Bay Area Governments (ABAG) projects that total job growth within Oakland will increase by 45 percent (or 85,260 jobs) between 2010 and 2040.<sup>3</sup> The proposed project's employment would represent only about 0.2 percent of this growth at project completion. Because this increase would be small, the regional supply of housing would be expected to accommodate any indirect demand for housing generated by future employees over the 10-year Master Plan build out period. As such, the proposed project would neither directly nor indirectly lead to substantial or unforeseen economic or population growth.

As noted above, the proposed project would occur on an infill site in an existing urbanized area of Oakland. It would not result in the extension of utilities or roads into exurban areas, and would not directly or indirectly lead to the development of greenfield sites in the East Bay. Because the project site is located within an existing urbanized area, and is approximately 0.6 miles from the MacArthur BART station as well nearby several AC Transit lines, anticipated growth would benefit from the existing transit system and could reduce adverse impacts associated with automobile use, such as air pollution, greenhouse gas emissions and noise. Therefore, the minor population growth that could occur as a result of project implementation would be largely beneficial and not considered substantial or adverse.

## **B. SIGNIFICANT IRREVERSIBLE CHANGES**

An EIR must identify any significant irreversible environmental changes that could result from implementation of a proposed project. These may include current or future uses of non-renewable resources, and secondary or growth-inducing impacts that commit future generations to similar uses. CEQA requires that irretrievable commitments of resources should be evaluated to assure that such consumption is justified.<sup>4</sup> The *CEQA Guidelines* describe three distinct categories of significant irreversible changes: 1) consumption of non-renewable resources; 2) changes in land use that would commit future generations; and 3) irreversible changes from environmental accidents.

### **1. Consumption of Nonrenewable Resources**

Consumption of nonrenewable resources includes conversion of agricultural lands, loss of access to mining reserves, and use of non-renewable energy sources. The project site is located within an urban area of Oakland; no agricultural land would be converted to non-agricultural uses. The project site does not contain known mineral resources and does not serve as a mining reserve.

Construction of the proposed project would require the use of energy, including energy produced from non-renewable resources. Energy consumption would occur during the operational period of the proposed project due to the use of automobiles, lighting and appliances. However, the proposed project would incorporate energy-conserving features, as required by California Energy Code Title 24

<sup>3</sup> Association of Bay Area Governments, 2013. *Plan Bay Area, Strategy for a Sustainable Region*. July 18.

<sup>4</sup> *CEQA Guidelines*, 2013. § 15126.2(c).



and in some cases would exceed such measures by meeting the Silver certification level for LEED Healthcare of the U.S. Green Building Council as required by the City of Oakland.

As discussed in the Section IV.F, Greenhouse Gas Emissions, the proposed project would not result in significant impacts associated with construction- and operational-related greenhouse gas emissions, and would not conflict with plans adopted for the purpose of reducing greenhouse gas emissions. The proposed project would not require the construction of major new lines to deliver energy as electric service is already provided in the area. In addition, the project site is located near the MacArthur BART station, AC Transit lines, and bicycle and pedestrian routes, which would facilitate the increased use of public transit, further reducing non-renewable energy consumption associated with the single-occupant vehicles. Therefore, the proposed project would not result in a significant impact associated with the consumption of nonrenewable resources.

## **2. Changes in Land Use Which Would Commit Future Generations**

The project site is located in North Oakland, and is surrounded by residential uses on the north, transportation uses on the southeast and southwest, with some neighborhood-serving commercial uses also in the vicinity. The approximately 11-acre campus currently consists of a mix of medical building and associated uses. Development associated with the proposed project would occur on a site that has been developed with healthcare facilities for at least the last 87 years. The proposed project would not introduce a new use onto the CHRCO campus. Master Plan build out would result in an increase in the density and intensity of development on the campus by a total of 325,014 square feet of net new building area over the next 10 years. However, the proposed project would not commit future generations to more intense development beyond what is considered by the Master Plan and there would be nothing to preclude the location or redevelopment of some other type of use on the project site in the future.

## **3. Irreversible Changes from Environmental Accidents**

No significant irreversible environmental damage, such as what could occur as a result of an accidental spill or explosion of hazardous materials, is anticipated due to implementation of the proposed project. Furthermore, compliance with federal, State, and local regulations, and the City of Oakland's Standard Conditions of Approval, would reduce to a less-than-significant level the possibility that hazardous substances within the project site would cause significant environmental damage.

## **C. SIGNIFICANT UNAVOIDABLE AND CUMULATIVE IMPACTS**

The proposed project would not result in any significant and unavoidable impacts.

## **D. EFFECTS FOUND NOT TO BE SIGNIFICANT**

The Notice of Preparation (NOP) was published on July 26, 2013, and public scoping sessions were held on August 12, 2013, in front of the City of Oakland Landmarks Preservation Advisory Board, on August 15, 2013, in front of the City of Oakland Pedestrian and Bicycle Advisory Committee and August 28, 2013, in front of the City of Oakland Planning Commission, to solicit comments from the public about the scope of this EIR. Written comments received on the NOP were considered in the

preparation of the final scope for this document and in the evaluation of the proposed project (and are included in Appendix A).

Based on preliminary research and discussions with City staff, the environmental topics analyzed in Chapter IV, Setting, Impacts, Standard Conditions of Approval, and Mitigation Measures represent those topics which may generate the greatest potential controversy and expectation of adverse impacts among the project team and members of the public. The following topics were excluded from discussion in Chapter IV of the EIR because it was determined during the scoping phase that these impacts would be less than significant: Agricultural and Forestry Resources; Biological Resources; Mineral Resources; Population and Housing; Public Services and Recreation. These topics are briefly addressed below. It is assumed that the less than significant impacts described below would be the same for both Phase 1 and Phase 2, unless otherwise noted.

## 1. Agricultural and Forestry Resources

The project site and vicinity are located within an urban area in the City of Oakland. The majority of the CHRCO campus is designated as Institutional per the City's Land Use and Transportation Element of the City's General Plan and the majority of the campus is zoned as Medical Center (S-1) on the City's zoning map. The project area, as with the majority of developed land in the City of Oakland, is designated by the California Department of Conservation's Farmland Mapping and Monitoring Program as Urban and Built-Up Land.<sup>5</sup> Therefore, the project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use; would not conflict with existing zoning for agricultural use, a Williamson Act contract, forest land or timberland; and would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland or forest land to non-agricultural or non-forest use. Therefore, there would be no impact to agricultural and forestry resources.

## 2. Biological Resources

No special-status plant or animal species are expected to occur on or in the vicinity of the site due to its completely urbanized condition and lack of suitable habitats. The project would not interfere with local wildlife movement or corridors. Common wildlife species that are adapted to urban environments would continue to use the site after project implementation. No riparian vegetation, other sensitive natural communities, federally protected wetlands, or other aquatic features are present on the site. In addition, the site is not subject to a local, regional, or State habitat conservation or natural community plan.

An Arborist Report<sup>6</sup> was prepared for the proposed project (included as Appendix I) and identified a total of 151 trees on or in the immediate vicinity of the CHRCO campus. Of these, 99 are located on the campus and 52 are located on the Caltrans property. Trees include 30 coast live oaks (*quercus agrifolia*), 21 coast redwoods (*sequoia sempervirens*), 13 southern magnolia (*magnolia grandiflora*), 11 blackwood acacia (*acacia melanoxylon*), 11 evergreen ash (*fraxinus uhdei*), 10 flaxleaf paperbark

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<sup>5</sup> California Department of Conservation, 2011. Division of Land Resource Protection, Farmland Mapping and Monitoring Program. *Alameda County Important Farmland 2010* (map). Website: [www.consrv.ca.gov/dlrp/fmmp/index.htm](http://www.consrv.ca.gov/dlrp/fmmp/index.htm) (accessed February 10, 2014) April.

<sup>6</sup> HortScience, Inc, 2014. *Tree Inventory Report, Children's Hospital Oakland*, CA. May.

(*melaleuca linarifolia*), 8 Bailey acacia (*acacia baileyana*), 7 London plane (*platanus acerifolia*), and 40 additional trees of varying species. A total of 79 trees were rated in “Good” condition, 63 were in “Fair” condition, and 9 were rated as being in “Poor” condition.

The southern magnolia tree (Tree #82) located within the courtyard of the CHRCO campus was the largest tree evaluated in the arborist report, with a trunk diameter of 78 inches. This tree was planted around 1860 and was noted to be in Good condition. A Level 1 Tree Health Assessment<sup>7</sup> (see Appendix I) was also conducted by a separate arborist to evaluate the condition of this tree. This assessment determined that the tree is in Fair condition. A separate Transplant Feasibility Analysis<sup>8</sup> was also prepared for the magnolia tree, to determine the potential opportunities and constraints associated with possible relocation of the tree.

In addition to the above-listed trees on the project site, the Arborist Report identified 15 street trees planted within the public right-of-way around the site.

Title 12, Chapter 12.36 of the Oakland Municipal Code requires that a permit be obtained prior to removing protected trees from either City or private property. Protected trees are defined as follows:

- Any coast live oak (*Quercus agrifolia*) 4 inches or larger diameter-at-breast height (dbh) and
- Any tree that is 9 inches or larger dbh, except eucalyptus trees, or Monterey pines on City property and in development-related situations where more than five per acre are proposed to be removed.

The City’s Standard Conditions of Approval relevant to trees are listed below for reference.

**SCA BIO-1: Tree Removal During Breeding Season.** *Prior to issuance of a tree removal permit.* To the extent feasible, removal of any tree and/or other vegetation suitable for nesting birds shall not occur during the breeding season of March 15 to August 15. If tree removal must occur during the breeding season, all sites shall be surveyed by a qualified biologist to verify the presence or absence of nesting birds. Pre-removal surveys shall be conducted within 15 days prior to the start of work from March 15 through May 31, and within 30 days prior to the start of work from June 1 through August 15. The pre-removal surveys shall be submitted to the Planning and Zoning Division and the Tree Services Division of the Public Works Agency. If the survey indicates the potential presence of nesting birds, the biologist shall determine an appropriately sized buffer around the nest in which no work will be allowed until the young have successfully fledged. The size of the nest buffer will be determined by the biologist in consultation with the CDFW, and will be based to a large extent on the nesting species and its sensitivity to disturbance.

**SCA BIO-2: Tree Removal Permit.** *Prior to issuance of a demolition, grading, or building permit.* Prior to removal of any protected trees, per the Protected Tree Ordinance, located on the project site or in the public right-of-way adjacent to the project, the project applicant shall secure a tree removal permit from the Tree Division of the Public Works Agency, and abide by the conditions of that permit.

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<sup>7</sup> The Davey Tree Expert Company, 2013. *One Southern Magnolia Tree Located at the Oakland Children’s Hospital in Oakland, California*. October 25.

<sup>8</sup> HortScience, Inc., 2014. *Magnolia Tree #82 Transplant Feasibility Analysis, Children’s Hospital Oakland*. May.

**SCA BIO-3: Tree Replacement Plantings.** *Prior to issuance of a final inspection of the building permit.*

Replacement plantings shall be required for erosion control, groundwater replenishment, visual screening and wildlife habitat, and in order to prevent excessive loss of shade, in accordance with the following criteria:

- No tree replacement shall be required for the removal of non-native species, for the removal of trees which is required for the benefit of remaining trees, or where insufficient planting area exists for a mature tree of the species being considered.
- Replacement tree species shall consist of Sequoia sempervirens (Coast Redwood), Quercus agrifolia (Coast Live Oak), Arbutus menziesii (Madrone), Aesculus californica (California Buckeye) or Umbellularia californica (California Bay Laurel) or other tree species acceptable to the Tree Services Division.
- Replacement trees shall be at least of twenty-four (24) inch box size, except that three fifteen (15) gallon size trees may be substituted for each twenty-four (24) inch box size tree where appropriate.
- Minimum planting areas must be available on site as follows:
  - For Sequoia sempervirens, three hundred fifteen square feet per tree;
  - For all other species listed in #2 above, seven hundred (700) square feet per tree.
- In the event that replacement trees are required but cannot be planted due to site constraints, an in lieu fee as determined by the master fee schedule of the city may be substituted for required replacement plantings, with all such revenues applied toward tree planting in city parks, streets and medians.
- Plantings shall be installed prior to the issuance of a final inspection of building permit, subject to seasonal constraints, and shall be maintained by the project applicant until established. The Tree Reviewer of the Tree Division of the Public Works Agency may require a landscape plan showing the replacement planting and the method of irrigation. Any replacement planting which fails to become established within one year of planting shall be replanted at the project applicant's expense.

**SCA BIO-4: Tree Protection During Construction.** *Prior to issuance of a demolition, grading, or building permit.* Adequate protection shall be provided during the construction period for any trees which are to remain standing, including the following, plus any recommendations of an arborist:

- Before the start of any clearing, excavation, construction or other work on the site, every protected tree deemed to be potentially endangered by said site work shall be securely fenced off at a distance from the base of the tree to be determined by the City Tree Reviewer. Such fences shall remain in place for duration of all such work. All trees to be removed shall be clearly marked. A scheme shall be established for the removal and disposal of logs, brush, earth and other debris which will avoid injury to any protected tree.
- Where proposed development or other site work is to encroach upon the protected perimeter of any protected tree, special measures shall be incorporated to allow the roots to breathe and obtain water and nutrients. Any excavation, cutting, filing, or compaction of the existing ground surface within the protected perimeter shall be minimized. No change in existing ground level shall occur within a distance to be determined by the City Tree Reviewer from the base of any protected tree at any time. No burning or use of equipment with an open flame shall occur near or within the protected perimeter of any protected tree.
- No storage or dumping of oil, gas, chemicals, or other substances that may be harmful to trees shall occur within the distance to be determined by the Tree Reviewer from the base of any protected trees, or any other location on the site from which such substances might enter the protected perimeter. No heavy construction equipment or construction materials shall be operated or stored within a distance from the base of any protected trees to be determined by the tree reviewer. Wires, ropes, or other devices shall not be attached to any protected tree, except as needed for support of the

tree. No sign, other than a tag showing the botanical classification, shall be attached to any protected tree.

- Periodically during construction, the leaves of protected trees shall be thoroughly sprayed with water to prevent buildup of dust and other pollution that would inhibit leaf transpiration.
- If any damage to a protected tree should occur during or as a result of work on the site, the project applicant shall immediately notify the Public Works Agency of such damage. If, in the professional opinion of the Tree Reviewer, such tree cannot be preserved in a healthy state, the Tree Reviewer shall require replacement of any tree removed with another tree or trees on the same site deemed adequate by the Tree Reviewer to compensate for the loss of the tree that is removed.
- All debris created as a result of any tree removal work shall be removed by the project applicant from the property within two weeks of debris creation, and such debris shall be properly disposed of by the project applicant in accordance with all applicable laws, ordinances, and regulations.

A number of trees would be removed from the project site, which would require compliance with the above SCA's. Impacts to trees associated with implementation of Phase 1 and Phase 2 are discussed below.

**a. Phase 1 Impacts.** Approximately 19 protected trees, including 1 street tree, would be removed from the site during construction of Phase 1. An additional 7 trees could be affected during the construction period, such that they may need to be removed if they cannot be adequately protected. The draft landscape plan shown in Figure III-20 shows the location and types of trees that would be planted as part of project build out. Implementation of SCA BIO-2, BIO-3, and BIO-4 would ensure that potential impacts to protected trees would be less than significant.

In addition, implementation of SCA BIO-1 would ensure that potential impacts to nesting birds associated with tree removal would be less than significant.

**b. Phase 2 Impacts.** Approximately 90 protected trees (52 of which are located on the Caltrans site), including 32 street trees, would be removed from the site during construction of Phase 2. An additional 5 trees could be affected during the construction period, such that they may need to be removed if they cannot be adequately protected.

Implementation of Phase 2 would result in the removal of the above described southern magnolia tree. The tree is located within the courtyard between the A/B and B/C Wings; the trunk of the tree is approximately 25 feet from the B/C Wing and a portion of the canopy extends over the building. The B/C Wing would be demolished as part of Phase 2. In addition, the footprint of the Patient Pavilion would extend over the location of this tree. A Transplant Feasibility Analysis<sup>9</sup> was conducted for this tree, which explored the biological feasibility of relocating the tree to one of four locations identified by the project applicant's landscape architect, as described below:

- *Site A.* Located at the end of 53<sup>rd</sup> Street, east of Dover Street, adjacent to the residential buildings that would be relocated as part of Phase 2.
- *Site B.* Located at the center of the reconfigured turn-around/patient drop off area as part of Phase 2.

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<sup>9</sup> Ibid.

- *Site C.* Located within Helen McGregor Plaza Park, west of Martin Luther King Jr. Way between 52<sup>nd</sup> Street and 53<sup>rd</sup> Street.
- *Site D.* Located a few feet east of the tree's current location within the new courtyard that would be developed as part of Phase 2.

The report identified several constraints related to the feasibility of relocating the existing magnolia tree. These include the general ability of the species of tree to accommodate relocation, the age of the tree, size of the tree, health and structure of the tree, and potential constraints at the various sites identified for possible relocation. Specifically, southern magnolia trees tend to drop their leaves when roots are disturbed and it may take several years for the tree to recover once relocated. The tree has also already exceeded the average life span for trees of this species. In addition, the size of the tree would require excavation of a large root ball of an approximately 78-foot radius in order to retain its root system, which is not likely feasible. Finally, while the tree has been evaluated as fair to good, the upper canopy is slightly thin, indicating declining health and vitality. The advanced age of the tree and exceptionally large size is also a concern. Because of its age, the tree has a limited physiological capacity to recover from root and foliage loss. Nonetheless, it was determined that given these conditions, it could be possible to relocate the tree to either Site A or B.

Although it would be physically feasible to relocate the tree, the biological risks associated with the actual relocation and transplanting of the tree must be considered. While it is mechanically possible to move large, mature trees, it is a substantial expense and the survival of any transplanted tree cannot be guaranteed. Because of the proposed phasing of construction during Phase 2, which involves the demolition of several structures within the immediate vicinity of the tree and construction of the Link Building and Patient Pavilion within the same area, the tree would likely need to be stored for about 3 to 5 years before it could be transplanted on site. Additionally, overhead power lines, which constrain the ability to move the tree off-site, would need to be placed underground before the tree could be moved to any off-site location. Due to the logistical constraints of transplanting the tree at any of the proposed transplant locations, and the need to store the tree for some period of time, it is unlikely that the tree would survive transplanting to any of the proposed on-site or nearby locations. Ultimately, transplanting the magnolia tree was determined to present logistical and financial constraints that could ultimately result in the death of the tree before it could be feasibly transplanted. Therefore, relocation of the tree is not considered as part of the proposed project.

The draft landscape plan shown in Figure III-20 shows the location and types of trees that would be planted (including those proposed for transplanting) as part of project build out. Implementation of SCA BIO-2, BIO-3, and BIO-4 would ensure that potential impacts to protected trees would be less than significant.

Refer to Section IV.C, Cultural and Historic Resources, for a discussion of the historical significance of the existing magnolia tree and potential impacts to historical resources associated with its potential loss.

In addition, implementation of SCA BIO-1 would ensure that potential impacts to nesting birds associated with tree removal would be less than significant.

### 3. Mineral Resources

The project site is located in an urbanized area of Oakland, and no known mineral resources are located within or near the site. The State Mining and Geology Board identifies mineral resources of Statewide importance and the City of Oakland General Plan identifies mineral resources of City or regional importance.<sup>10,11</sup> Mineral resource extraction activities have not taken place within or around the project site during recent history and there are no active quarries in the City of Oakland. The State Mining and Geology Board has not classified any areas near the project site as containing mineral deposits which are of Statewide significance. Therefore, the proposed project would not result in the loss of availability of a known mineral resource of value to the region or residents of the State or the loss of availability of a locally-important mineral resource recovery site.

### 4. Population and Housing

The proposed project would redevelop the existing 11-acre CHRCO campus and an undeveloped 1.5-acre area currently located within Caltrans right-of-way. The project would not include new homes or businesses and would not result in the extension of new roads or other major infrastructure, such that direct population growth would result. As previously discussed in this chapter, the jobs created during both the construction and operation phases of the project would not be substantial in the context of job growth in Oakland and the region. The Association of Bay Area Governments (ABAG) projects that total job growth within Oakland will increase by 45 percent (or 85,260 jobs) between 2010 and 2040.<sup>12</sup> The proposed project's employment would represent only about 0.2 percent of this growth at project completion. Because this increase would be small, the regional supply of housing would be expected to accommodate any indirect demand for housing generated by future employees over the 10-year Master Plan build out period. As such, the proposed project would neither directly nor indirectly lead to substantial or unforeseen economic or population growth.

There are currently a total of 18 former residential buildings located on the CHRCO campus or otherwise associated with CHRCO. Two of these buildings (720 52<sup>nd</sup> Street and 685 53<sup>rd</sup> Street, as shown in Figure III-2 in Chapter III, Project Description) are not owned by CHRCO and are used as private residences. These buildings would continue to be retained for their current use as housing with implementation of the proposed project.

The existing CHRCO-owned Family House (5222 Dover Street) functions as semi-transient residential use that is utilized by the families of CHRCO patients. This building currently includes 16 bedrooms and common kitchen and living areas. This structure would connect to the new Family Residence Building and no existing units would be removed with development of the project.

The remaining 15 former residential buildings owned by CHRCO have been converted to office uses and currently function as CHRCO-support facilities (although one is currently vacant). Seven of these buildings, two of which are located across 53<sup>rd</sup> Street and are not within the main campus boundaries

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<sup>10</sup> California Department of Conservation, 2012. State Mining and Geology Board (SMGB). *Statutes and Regulations*. Website: [www.conservation.ca.gov/smgb/Regulations/Pages/regulations.aspx](http://www.conservation.ca.gov/smgb/Regulations/Pages/regulations.aspx) (accessed December 28).

<sup>11</sup> Oakland, City of, 1994. *City of Oakland General Plan: Open Space, Conservation, and Recreation (OSCAR) Element*. June.

<sup>12</sup> Association of Bay Area Governments, 2013. *Plan Bay Area, Strategy for a Sustainable Region*. July 18.

(770 53<sup>rd</sup> Street and 670 53<sup>rd</sup> Street), would be retained in place and would continue to be used by CHRCO as office space. Two additional buildings would be relocated from 52<sup>nd</sup> Street to 53<sup>rd</sup> Street and would also continue to function as office space. The six remaining residential buildings, none of which currently function as residences, would be completely or partially demolished (three of the façades on 53<sup>rd</sup> Street would be retained and integrated into the new Family Residence Building).

Potential impacts to residential buildings are further discussed below for Phases 1 and 2. As described, implementation of the proposed project would not result in the displacement of housing or people, necessitating the construction of replacement housing elsewhere.

**a. Phase 1 Impacts.** As part of Phase 1, the residential building located at 5204 Martin Luther King Jr. Way would be demolished to accommodate the construction of OPC2. The rear yard additions of two residential buildings (715 53<sup>rd</sup> Street and 707 53<sup>rd</sup> Street) would also be demolished to provide new maintenance access to OPC2; however, the main buildings would be retained and would continue to function as office uses. Demolition of the residential building and continued use of the remaining 14 buildings (one of which is currently vacant) as office space would require a Conditional Use Permit. Because this building does not currently function as a residence and does not provide housing; implementation of Phase 1 would not displace existing housing or people, necessitating the construction of replacement housing elsewhere.

**b. Phase 2 Impacts.** As part of Phase 2, a total of five residential buildings would be wholly or partially demolished. The buildings located at 5212 Dover Street and 665 53<sup>rd</sup> Street would be completely demolished while the façades of three buildings (671, 675, and 679 53<sup>rd</sup> Street) would be retained as part of the new Family Residence Building. The new Family Residence Building would provide 12 to 16 units for families with children in the hospital. The proposed Family Residence Building would be similar to the existing facility at 5222 Dover Street and would connect to the existing facility. In addition, two residential buildings (688 and 682 52<sup>nd</sup> Street) would be relocated to 665 53<sup>rd</sup> Street and are not proposed for demolition.

Ultimately, nine of the existing residential buildings within the campus boundaries (not including the two buildings located across 53<sup>rd</sup> Street) would be retained and would continue to function as office uses as part of the CHRCO campus. None of the buildings to be demolished or relocated currently function as residences or provide housing. Therefore, implementation of Phase 2 would not displace existing housing or people, necessitating the construction of replacement housing elsewhere. In addition, the new Family Residence Building would not constitute the construction of permanent residential housing units due to its transitional nature; therefore, implementation of Phase 2 would not increase the supply of housing such that increased population growth would occur.

## 5. Public Services

The Oakland Police Department and Oakland Fire Department currently provide police and fire protection services to the project site, respectively. Implementation of the proposed project would increase staff, patients, and visitors on the site. However, this increase would be minor and would not result in the need for new or physically altered government facilities that could in turn result in adverse physical impacts. Refer to Section IV.K, Utilities, for a description of fire flow needs to serve the increased building intensity on the project site. Implementation of SCA UTL-3 would ensure that adequate fire flows are available for the Oakland Fire Department to adequately provide continued fire protection services to the project site.



Because the proposed project does not include housing, the proposed project would not result in an adverse effect on school facilities. Although unlikely, the project may incrementally increase use of area parks and community and regional recreational facilities; however, this increase is not expected to result in substantial physical deterioration of local parks and recreational facilities (see additional discussion below regarding recreational facilities). Therefore, the proposed project would not result in an adverse effect on school or recreational services and would not require the construction of new facilities that could in turn result in adverse physical impacts.

## 6. Recreation

The North Oakland area, in which the project site is located, is heavily urbanized and, at the time that the City's General Plan Open Space, Conservation and Recreation Element was prepared, contained only 54.5 acres of parks, or about one-quarter of the City's per-capita goal.<sup>13</sup> The area near the project site is served by two community parks, three neighborhood parks, one active mini-park, one passive mini-park, two linear parks, and one swimming pool/arts studio complex.

Dover Street Park, an approximately 1-acre park that includes a play structure, community garden, benches, and lawn areas, is located about five blocks to the north of the CHRCO campus. In addition, Helen McGregor Plaza Park is located immediately west of the campus, across Martin Luther King Jr. Way. This approximately ¼-acre park consists of a plaza with concrete seating areas utilized by people waiting for the bus, and landscaped trees. The proposed project does not include any housing, except the addition to the existing Family House, which serves as a semi-transitional housing for the families of CHRCO patients. The proposed project would not directly increase the population of the site or vicinity and therefore would not directly increase the use of these local parks. New employees at the campus could incrementally increase the use of these parks as they access the facilities on their breaks or before or after their shifts; however, the increase in employment on the site is minor, and the 205 additional employees would not be expected to increase the use of these facilities such that physical deterioration would occur or be accelerated.

The CHRCO campus itself includes limited open space and landscaped areas used for both passive and active uses. Currently, there is an approximately 1,600-square-foot courtyard between the A/B and B/C Wing. Adjacent to the courtyard there is an 800-square-foot play area with climbing structure; this area is open at all times, and is used intermittently, primarily by siblings of patients, and on occasion, by patients. The play area is provided in accordance with California Building Code 1224.30.3.1 which requires a play area for the pediatric nursing unit.<sup>14</sup> Also adjacent to the courtyard is the Butterfly Garden which was constructed in approximately 1997. The space was created as a living lab for the students, as well as a welcoming place for patients, families, and staff to have some solace. As part of Phase 2, the courtyard between the A/B and B/C Wings and the existing play area would be reconfigured. In addition, a playground and garden area would be located on the site of the new Family Residence Building, for use by the families that use this facility.

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<sup>13</sup> Oakland, City of, 1996. *Open Space, Conservation, and Recreation (OSCAR) Element*.

<sup>14</sup> A pediatric nursing unit is defined as a hospital that has eight or more licensed pediatric beds.

The project would not increase use of area parks and community and regional recreational facilities, such that it would result in substantial physical deterioration of local parks and recreational facilities. Therefore, the proposed project would not result in an adverse effect on recreational services and would not require the construction of new facilities.

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**D. REFERENCES**

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