APPENDIX G

DRAFT PHASE 1
ENVIRONMENTAL SITE ASSESSMENT REPORT

August 22, 2008

Doug Nelson c/o Sharon Knowlton
Children's Hospital & Research Center Oakland
747 52nd Street
Oakland, Ca. 94609

Subject: Draft Phase I Environmental Site Assessment Report
Children's Hospital & Research Center of Oakland
747 52nd Street
Oakland, California

Dear Mr. Nelson:

Attached for your review is the Draft Phase I Environmental Site Assessment (Phase I ESA) completed by The Source Group, Inc. (SGI) for the Children's Hospital & Research Center Oakland (CHRCO) facility located at 747 52nd Street, Oakland, California (Subject Property). This assessment has revealed no evidence of recognized environmental conditions in connection with the Subject Property.

Based on interviews with CHRCO engineers we understand that an underground storage tank (UST) was previously located and removed near the southwest corner of wing B. No further information regarding the contents of the UST or whether any contamination was present upon removal was available.

Based on our historical research, we identified several documented fuel and solvent release sites located near (<1/8 mile) and upgradient of the Subject property. It is SGI's opinion that the potential for such releases to have migrated to and be present in groundwater underlying the Subject Property at concentrations that would pose regulatory or human health risk concerns is low due to the magnitude of the releases and characteristics of the chemicals released.

SGI understands that future projects may include excavation and dewatering associated with the reconstruction of hospital building wings B and C. Excess soil and groundwater generated from excavations and dewatering that will be disposed of offsite should be tested to confirm that it is non-hazardous and meets the acceptance criteria of the receiving facility. The sampling frequencies and test methods employed to characterize the soil or groundwater are typically determined by the disposal facility accepting the soil or groundwater.

Those buildings at the project site constructed prior to the 1980s may have lead and asbestos present in some form. Demolition of the project site buildings has the potential to release lead particles, asbestos fibers, and/or other hazardous materials to the air, where they may be inhaled by construction workers and the general public. In addition, 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. If present, a qualified contractor should be retained to remove asbestos containing materials and lead-based paint, as appropriate, prior to demolition. SGI has recently completed the asbestos and lead surveys for the Subject Property, the results of which will be presented in a separate report.

:

The Source Group appreciates the opportunity to conduct this work for CHRCO. Should you have any questions regarding the Draft Phase I ESA Report or this letter, please call us at (925) 944-2856, ext 326.

Sincerely,

The Source Group, Inc.

Kent R. Reynolds
Project Manager

Attachment: Draft Phase I Environmental Site Assessment Report

DRAFT PHASE I ENVIRONMENTAL SITE ASSESSMENT

Children's Hospital and Research Center of Oakland

747 52nd Street
Oakland, California

01-CHO-001

Prepared For:

Children's Hospital and Research Center of Oakland
747 52nd Street
Oakland, California 94609

Prepared By:

THE SOURCE GROUP, INC.
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August 22, 2008

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EXECUTIVE SUMMARY

Children's Hospital and Research Center Oakland (CHRCO) retained The Source Group, Inc. (SGI) to conduct an ASTM E 1527-05 and all appropriate inquiry (40 CFR § 312.2) compliant Phase I Environmental Site Assessment (ESA) in conjunction with the planned demolition and reconstruction of the Hospital's B and C wings located at located at 747 52ND Street in the City of Oakland, California (Subject Property; Figure 1) construction.of a new 12-story hospital to replace the existing hospital on the Subject Property.

The primary purpose of the Phase I ESA is to identify potential or probable "recognized environmental conditions (RECs)" that could potentially impact the Subject Property. Specifically, the scope of work for the Phase I ESA consisted of historical assessment of land use associated with the Subject Property and immediately adjacent properties through review of reasonably available agency records, interviews with applicable representatives of the Subject Property owners, a reconnaissance of the Subject Property and immediately surrounding properties, and review of regulatory databases regarding the presence or likelihood of RECs within the Subject Property and adjoining properties. In addition, the Phase I ESA included a review of previous investigations conducted at the Subject Property and/or immediately adjacent properties.

The Subject Property is comprised of the Children's Hospital and Research Center of Oakland (Current Campus). The Subject property also include the east of Dover Street (one-half city block) that contains residential eight residential structures, four of which are owned by the Hospital, and four of which are in private ownership and residential use, and the Hospital's Family Center (Residential Area; Figure 2). The Current Campus is comprised of a parking garage, outpatient care facility, main hospital building, helipad, and office buildings. The Current Campus is almost entirely paved with asphalt and concrete except for landscaped portions. The Subject Property is located in an area characterized as mixed commercial/residential. The Subject Property is bounded to the north by 52nd street with single-family residences beyond, to the east by Highway 24 with residential properties beyond, to the south by Highway 24, and to the west by Martin Luther King Jr. Way with parking lots and multi-level residences beyond (Figure 2).

The Subject Property has been developed and in use for a mix of residential and commercial activities since at least 1903. While all uses of the Subject Property have not been determined, historic data collected during this assessment has provided known uses for specific points in time.

The following is a summary of the history of the Subject Property based on current and historical records and interpretations by SGI.

- The Subject Property was first developed sometime in the early 1900s and consisted of single-family residences, including the McElrath Mansion property;
- In 1912, the McElrath Mansion property was acquired by the Baby Hospital Association, and in 1913 or 1914, the Children's Hospital of Oakland (then called the Baby Hospital) formerly opened its doors;
- In 1928, the McElrath property was demolished and the current A, B, and C hospital building wings were constructed;
- In 1930, the Baby Hospital was renamed Children's Hospital of the East Bay;
- In 1959, a research laboratory was built across 51st Street from the existing hospital;
- In 1962, the diagnostic and treatment center (D&T building) portion of the main hospital was constructed;
- In 1963, a nurses' dormitory was built along the northwest corner of the intersection of Grove and 52nd Streets;
- In 1964, the hospital was renamed Children's Hospital Medical Center of Northern California;
- In 1975, a third floor was added to the D&T building and a second floor was added to the research laboratory built in 1959;
- In 1982, the 82-Tower building portion of the main hospital was constructed; and
- In the mid 1990s, the Western Expansion building of the main hospital was constructed.

This assessment has revealed no evidence RECs in connection with the Subject Property.

The following environmental concerns, which are not RECs, were noted during this assessment:

Former UST: According to CHRCO personnel (Mr. Michael Carlson) an underground storage tank (UST) was located south of the engineering building at the corner of B and C sections of the AB&C building (Figure 3). The contents of the UST are unknown and to the best of his knowledge, the UST has been removed. No further information regarding the UST was available. SGI understands that future projects may include excavation and dewatering associated with the reconstruction of hospital building wings B and C. Depending on the depth and location of future excavations and, or trenching, the potential exists to encounter soil and groundwater that has been impacted with releases associated with the former UST.

Mitigation measures should be developed for worker health and safety considerations and the proper management of impacted soil and groundwater.

Upgradient Release Sites: Based on our historical research, we identified several documented fuel and solvent release sites located near (<1/4 mile) and upgradient of the Subject property. It is SGI's opinion that the potential for such releases to have migrated to and be present in groundwater underlying the Subject Property at concentrations that would pose regulatory or human health risk concerns is low due to the magnitude of the releases and characteristics of the chemicals released.

SGI understands that future projects may include excavation and dewatering associated with the reconstruction of hospital building wings B and C. Excess soil and groundwater generated from excavations and dewatering that will be disposed of offsite should be tested to confirm that it is non-hazardous and meets the acceptance criteria of the receiving facility. The sampling frequencies and test methods employed to characterize the soil or groundwater are typically determined by the disposal facility accepting the soil or groundwater.

ACM and LBP: Those buildings at the Subject Property constructed prior to the 1980s may have lead and asbestos present in some form. Prior to 1978, lead compounds were commonly used in interior and exterior paints. Prior to the 1980s, building materials often contained asbestos fibers, which were used to provide strength and fire resistance. Demolition of the Subject Property buildings has the potential to release lead particles, asbestos fibers, and/or other hazardous materials to the air, where they may be inhaled by construction workers and the general public. In addition, 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. Removal and disposal of these materials should be conducted according to the applicable Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) guidelines and recommendations.

1.0 INTRODUCTION

This report presents the findings of a Phase I Environmental Site Assessment (ESA) conducted by The Source Group, Inc. (SGI) for Children's Hospital and Research Center of Oakland (CHRCO) for the site located at 747 52nd Street, Oakland, California (Subject Property; Figure 1). CHRCO retained SGI to conduct a Phase I ESA as part of its due diligence associated with the demolition and reconstruction of the Hospital's B and C wings.

1.1 Purpose and Scope

The primary purpose of the Phase I ESA is to identify potential or probable "recognized environmental conditions (RECs)" that could potentially impact the subject property as defined and according to the standard of care as specified by the American Society for Testing and Materials (ASTM) Standard E 1527-05. Generally, a REC is the presence or likely presence of petroleum products or hazardous substances on the ground, groundwater, or surface water on a property under conditions that indicate an existing release, a past release, or a material threat of a release. The term includes those conditions that would be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

The Phase I ESA was performed in accordance with SGI's proposal, dated February 15, 2008, inclusive of ASTM Standard E-1527-005. Specifically, the scope of work for the Phase I ESA consisted of historical assessment of land use associated with the Subject Property and immediately adjacent properties through review of reasonably available agency records, interviews with applicable representatives of the Subject Property, a reconnaissance of the Subject Property and immediately surrounding properties, and review of regulatory databases regarding the presence or likelihood of RECs associated with the Subject Property. In addition, the Phase I ESA included a review of previous investigations conducted at the subject property and/or immediately adjacent properties. Representatives of SGI visited the Subject Property on July 23, 2008. Color photographs of the subject property are presented in Appendix A. The work performed by SGI is subject to the limitations as noted in this report.

1.2 Special Terms and Conditions (Third Party Reliance)

This report is for the use and benefit of, and may be relied upon by CHRCO, or any of its affiliates, and third parties authorized by CHRCO. Any third party agrees by accepting this report that any use or reliance on this report shall be limited by the exceptions and limitations in this report, the terms and conditions of the project contract with CHRCO with the exception of the limit of liability, and with the

acknowledgment that actual site conditions may change with time, and that hidden conditions may exist at the Subject Property that were not discoverable within the authorized scope of the assessment.

SGI makes no other representation to any third party except that it has used the degree of care and skill ordinarily exercised by environmental consultants in the preparation of the report and in the assembling of data and information related thereto. No other warranties are made to any third party, either express or implied.

1.3 Limitations

SGI has prepared this Phase I ESA using reasonable efforts in each phase of its work to identify recognized environmental conditions associated with hazardous substances, wastes and petroleum products at the Subject Property. The methodology of this Phase I ESA is consistent with the ASTM Standard Practice for E 1527-05. Findings within this report are based on information collected from observations made on the day of the site investigation and from reasonably ascertainable information obtained from governing public agencies and private sources.

This report is not definitive and should not be assumed to be a complete or specific definition of the conditions above or below grade. Information in this report is not intended to be used as a construction document and should not be used for demolition, renovation, or other construction purposes. SGI makes no representation or warranty that the past or current operations at the Subject Property are or have been in compliance with all applicable federal, state and local laws, regulations and codes.

Regardless of the findings stated in this report, SGI is not responsible for consequences or conditions arising from facts that were concealed, withheld, or not fully disclosed at the time the assessment was conducted.

This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated.

The regulatory database report provided is based on an evaluation of the data collected and compiled by a contracted data research company. The report focuses on the Subject Property and neighboring properties that could impact the Subject Property. Neighboring properties listed in governmental environmental records are identified within specific search distances. The search distance varies depending upon the particular government record being checked. The regulatory research is designed to meet the requirements of ASTM Standard E 1527-05. The information provided in the regulatory database report is assumed to be correct and complete.

Subsurface conditions may differ from the conditions implied by the surface observations and can only be reliably evaluated through intrusive techniques.

Reasonable efforts have been made during this assessment of aboveground and underground storage tanks and ancillary equipment. "Reasonable efforts" are limited to information gained from visual observation of largely unobstructed areas, recorded database information held in public record and available information gathered from interviews. Such methods may not identify subsurface equipment that may have been hidden from view due to paving, construction or debris pile storage, or incorrect information from sources.

SGI reviewed past ownership of the Subject Property in an attempt to determine past site usage. SGI is not a professional title insurance firm and makes no guarantee, explicit or implied, that the records which were reviewed represent a comprehensive or precise delineation of past site ownership or tenancy for legal purposes.

We identified obvious subject property uses from the present back to the early 1910s at which time portions of the Subject Property were developed for residential use. This is considered to be data failure since the timeline does not extend back to the first known developed use. We consider the resulting data gap insignificant because the gathered information along with our professional experience raises no reasonable concerns regarding this gap.

2.0 SITE DESCRIPTION

2.1 Site Location and Description

The Subject Property is located entirely within the City of Oakland (Figure 1). The Subject Property is comprised of twenty-one parcels and encompasses an area of approximately 10.7 acres (Figures 1 and 2).

The Subject Property is located at 747 52nd Street in the City of Oakland, California (Figure 1). The Subject Property is comprised of the Children's Hospital and Research Center of Oakland (Current Campus). The Subject Property also includes the area east of Dover Street (one-half city block), between 52nd Street and 53rd Street that contains residential eight residential structures, four of which are owned by the Hospital, and four of which are in private ownership and residential use, and the Hospital's Family Center (Residential Area; Figure 2). The Current Campus is comprised of a parking garage, outpatient care facility, main hospital building, helipad, and office buildings. The Current Campus is almost entirely paved with asphalt and concrete except for landscaped portions.

2.2 Surrounding Sites

The Subject Property is located in an area characterized as mixed commercial/residential. The Subject Property is bounded to the north by 53rd Street with single-family residences beyond, to the east by Highway 24 with residential properties beyond, to the south by Highway 24, and to the west by Martin Luther King Jr. Way with parking lots and multi-level residences beyond (Figure 2).

2.3 Physical Setting

2.3.1 Geography

The Subject Property is located within the Coast Ranges geomorphic province, which is characterized by a series of parallel, northwesterly-trending, folded, and faulted mountain chains. In this part of the providence, the gentle low-lying topography is composed of reworked marine and non-marine sedimentary deposits derived from steeply inclined hills located to the east of the Subject Property. Quaternary uplift resulted in the geologically recent formation of Bay Area hills and valleys including the East Bay Hills. The uplift has caused erosion of the mountains and hills with accompanying deposition in the valleys.

The center of the Subject Property Area is located at 37 degrees 50 minutes 13.0 seconds north latitude and 122 degrees 16 feet 0.2 inches west longitude. The general topographic gradient within the Subject Property is generally sloped towards the west. The elevation of the Subject Property is approximately 100 feet above mean sea level.

2.3.2 Hydrogeology

2.3.2.1 Regional Setting

The Subject Property is located near the San Francisco Bay within an area identified as the East Bay Plain. The East Bay Plain is situated on the east side of the San Francisco Bay depression. The alluvial sediments of the East Bay Plain consist of a mixture of gravel, sand and clay deposited by coalescing alluvial fans. In the vicinity of the site, fluvial and near shore deposits have been mapped (Helley et. al.). The fluvial deposits are described as unconsolidated, moderately sorted, fine sand and silt, with clayey silt and occasional thin beds of coarse sand (Muir 1993). The near-shore deposits are described as a well-sorted, fine to medium grained sand and silt, with lenses of sandy clay and clay. Depth to water is approximately 25-30 feet below ground surface (bgs). Based on soil and groundwater investigations conducted at facilities in the vicinity of the Site, groundwater flow underlying the Subject Property is believed to be generally towards the southwest.

2.3.2.2 Local Setting

Review of boring logs obtained during field investigations on adjacent sites (200 feet west of the Subject Property) indicate soils consisting of silty clays, clays, sandy silts, and sandy clays from ground surface to approximately 10 feet below ground surface (bgs). Below 10 feet bgs, sandy and gravelly clays, and clayey sands, and gravels were encountered to a maximum explored depth of 34 feet bgs (West 2002).

Depth to groundwater in the vicinity of the Subject Property has been reported to occur at approximately 6 and 15 feet below ground surface (bgs). Based on soil and groundwater investigations conducted at facilities in the vicinity of the Site, groundwater flow underlying the Subject Property is estimated to be generally towards the southwest.

3.0 HISTORICAL RESEARCH

SGI reviewed historic documents including aerial photographs, topographical maps, city directories, Sanborn Maps, and conducted an environmental lien search for the Subject Property. Environmental Data Resources, Inc (EDR) of Southport, Connecticut was contracted for this service. In addition to historical data obtained through EDR, building permits, inspection records, historical maps, parcel maps, and historical photographs were obtained from the South San Francisco Building and Planning Divisions and Library and reviewed. The results of the review are summarized below.

3.1 Aerial Photographs and Topographical Maps

SGI reviewed available aerial photographs of the Subject Property and surrounding areas provided by EDR. Each photograph was reviewed for the presence of structures or locations that might utilize petroleum hydrocarbons or other hazardous materials in the course of normal operations. The locations of identified structures were cross-referenced with other available data such as EDR database results and city directories. The available aerial photographs ranged from 1930 to 1998. The following are descriptions and interpretations of the aerial photograph reviews, supplemented with information obtained from the city directory search and information obtained during the site reconnaissance.

Year	Comments
1939	**Subject Property**: The Subject Property is developed with single-family residences. **Surrounding Area**: Surrounding areas consist of single-family residences.
1946	**Subject Property**: A large commercial-style building appears in the central portion of the Subject Property. According to Sanborn maps, this building appears to be the Children's Hospital and Clinic. **Surrounding Area**: Surrounding areas appear unchanged from the 1946 aerial photograph.
1959	**Subject Property**: The large commercial-style building denoted in the 1946 aerial photograph has expanded and includes a parking lot located on the south side of 51st Street. **Surrounding Area**: Surrounding area appear unchanged from earlier aerial photograph.
1965	**Subject Property**: Two additional large commercial-style building and parking lot are depicted north of the Children's Hospital denoted in the 1959 aerial photograph. The new building situated along Martin Luther King Jr. Way was identified in Sanborn maps to be a nursing and the larger building situated east of the nursing home was the Diagnostic Clinic. **Surrounding Area**: Surrounding area appear unchanged from earlier aerial photograph.
1982	**Subject Property**: No significant changes were observed. **Surrounding Area**: Surrounding areas appear more densely populated with larger buildings. In

Year	Comments
	addition, highway-24 is denoted along the eastern perimeter of the Subject Property and BART tracks are denoted along the western perimeter.
1993	**Subject Property**: The Subject Property appears as it does today. All three commercial-style buildings occupied by the Children's Hospital, which included the hospital, Diagnostic Center, and nursing home, have been replaced by two large buildings occupied by the Children's Hospital. In addition, a large building also occupied by the Children's Hospital has replaced the parking lot formerly located on the south side of 51st Street. **Surrounding Area**: No significant changes observed.
1998	**Subject Property**: No significant changes observed. **Surrounding Area**: No significant changes observed.

Aerial photographs confirm the presence of the Children's Hospital present on the Subject Property since at least 1946. See Appendix B for copies of the aerial photographs obtained from EDR (1939, 1946, 1959, 1965, 1982, 1993, and 1998).

Topographical Maps

SGI reviewed USGS topographic maps of the Subject Property, adjoining properties, and surrounding area from the EDR collection. Topographical maps for the Subject Property were available from as early as 1915. Copies of the topographic maps reviewed are provided in Appendix C. Map summaries follow.

- 1915 USGS 15-Minute Series San Francisco, California; Scale: 1: 62,500

  The Subject Property is occupied by one building (McElrath Mansion Property). Temescal Creek runs along the southern portion of the Subject Property. Adjacent areas appear to be developed with structures.

- 1948 USGS 15-Minute Series San Francisco, California; Scale: 1: 50,000

  The small building depicting in the 1915 topographical map has been replaced by a large structure interpreted by SGI to be the original hospital. Surrounding areas remain unchanged.

- 1949 USGS 7.5-Minute Series Oakland West, California; Scale: 1: 24,000

  The Subject Property and surrounding area generally appear unchanged.

- 1959 USGS 7.5-Minute Series Oakland West, California; Scale: 1: 24,000

  The Subject Property and surrounding area generally appear unchanged.

- 1968 USGS 7.5-Minute Series Oakland West, California; Scale: 1: 24,000

  The Subject Property appears relatively unchanged. However, to the west of the Subject Property along Grove Street (Martin Luther King Jr. Way), the BART transit system is under construction. In addition, Highway 24 bounding the Subject Property to the east is under construction.

- 1973 USGS 7.5-Minute Series Oakland West, California; Scale: 1: 24,000

  The Subject Property and surrounding area generally appear unchanged, except that both the BART transit system and Highway 24 construction projects have been completed.

- 1980 USGS 7.5-Minute Series Oakland West, California; Scale: 1: 24,000

  The Subject Property and surrounding area generally appear unchanged.

3.2 City Directories

Historic City Business Directories were obtained EDR for the address of the Subject Property and nearby surrounding sites. The directories were searched for addresses of business within and adjacent to the Subject Property that might utilize petroleum hydrocarbons or other hazardous materials in the course of normal operations. The following facilities were listed in the EDR city directories on or near Subject Property.

Address	Name or Use	Year
747 52nd Street	Multiple Medical Facility Listings Unlisted in Research Source Private Medical Practice Private Medical Practices Oakland Symphony Chorus Unlisted in Research Source	1991 1992 1996 2000 2002
Surrounding Addresses	Various Residential Listings	1920-2000

Of the facilities listed on or near the Subject Property, none were identified that may utilize petroleum hydrocarbons or other hazardous materials in the course of normal operations.

See Appendix D for copies of the EDR city directory search.

3.3 Sanborn Fire Insurance Maps

Sanborn Fire Insurance Maps were obtained from EDR for the Subject Property and surrounding areas. Each map was checked for structures or locations that might utilize petroleum hydrocarbons or other hazardous materials in the course of normal operations. Sanborn Fire Insurance Maps were available for the Subject Property covering the years 1903, 1911, 1951, 1952, 1967, and 1969. A summary of findings is included below.

1903: Coverage of the Subject Property in 1903 was limited to the area between Shattuck Avenue and what is today Martin Luther King Jr. Way (listed as Grove Way in the 1903 Sanborn Map) between 51st Street and 46th Street. During this time, residential properties and commercial stores were located on the Subject Property. In addition, the Anchor Brewing Company was located on the west side of Shattuck Avenue at the corner of 51st Street and Shattuck Avenue. Surrounding areas to the west consisted of residential properties and commercial stores. The Oakland Transit Consolidated, which consisted of an abandoned powerhouse and car barn, is depicted on the corner of 47th Street and Grove Avenue.

1911: A mix of residential properties and commercial stores are located on the Subject Property. A large residential property (McElrath Property) is located directly east of Grove Avenue, south of 52nd Street. The Anchor Brewing Company is still depicted on the corner of Shattuck Avenue and 51st Street. East of the Subject Property on the corner of Shattuck Avenue and 51st Street, a Pacific Gas & Electric (PG&E) substation is depicted. Directly east of the Subject Property on the 4000 block on Shattuck Avenue, a Steam Laundry facility and the Oakland Traction Company Car Barn are depicted. In addition, a steam cleaning operator is also depicted on the southern portion of the Subject Property at the corner of 47th Street and Grove Avenue. The areas to the north, west, and south of the Subject Property residential properties are depicted.

1951: The large residential property depicted in the 1911 Sanborn Map has been replaced by the Children's Clinic Hospital. North of the hospital and also located on the Subject Property, three nursing homes are depicted. The remaining areas of the Subject Property are occupied by residential properties. The Anchor Brewing Company is no longer depicted. Surrounding areas continue to be occupied by residential properties in addition to the PG&E substation and laundry facility still depicted on the corner of Shattuck Avenue and 51st Street and on the corner of Grove Avenue and 47th Street, respectively. However, the Oakland Traction Company Car Barn formerly located on the east side of Shattuck Avenue between 51st Street and 50th Street is no longer depicted and has been replaced by a shopping market.

1952: The Subject Property and surrounding areas appear as they do in the 1951 Sanborn Map. An additional Sanborn Map covering the area north of the Subject Property up to 55th Street and west of Telegraph Avenue was available for 1952. On this map, Marshall Steel Cleaning Works is depicted west of Telegraph Avenue between 55th Street and 53rd Street.

1967: Additional nursing homes are located west of the Children's Hospital. In addition, the nursing homes previously located north of the hospital have been replaced by a diagnostic center interpreted by SGI to be affiliated with the hospital. Residential properties formerly located south of the hospital are no longer depicted and south of 51st Street along Grove Avenue, the Bruce Lyon Memorial Lab is shown. Surrounding areas appear relatively unchanged except for the steam laundry facility formerly located on the corner of Grove Avenue and 47th Street, which has been replaced by a facility labeled as "VAC".

1969: The Subject Property and surrounding areas appear relatively unchanged from the 1967 Sanborn Map.

See Appendix E for a copy of the Sanborn Map Search Results.

3.4 Environmental Lien Search

SGI contracted EDR to perform an environmental lien search for the address of the Subject Property located 747 52nd Street, assessor's parcel number (APN): 14-1205-19-1. No environmental liens were found for the Subject Property under the given address and APN.

See Appendix F for a copy of the Environmental Lien Search Results.

3.5 Prior Reports

A Draft Environmental Impact Report (EIR) and Final EIR, submitted as an addendum for the Children's Hospital located on the Subject Property, were obtained and reviewed. Both reports were prepared by Environmental Science Associates, Inc., San Francisco, California (ESA) and are dated October 12, 1989 and May 2, 1990, respectively. Historical information about the hospital was obtained from the Draft EIR and was used to supplement other information obtained by SGI to determine the chronological history of the hospital. A summary of the history is provided in section 3.8 below.

3.6 Other Sources of Information

To obtain additional information on the history of the Subject Property and surrounding areas, building permits City of Oakland Permit Center were obtained. In addition, historical clippings and historical photographs for the Children's Hospital were obtained from the Oakland Public Library. A summary of the information obtained is included below.

Copies of permits, historical photographs, and historical clippings are included as Appendix G.

3.6.1 Permits

Permits from as early as 1922 were obtained and reviewed. Permits obtained include framing permits, gas permits, plumbing permits, mechanical permits, building permits, and inspection records for facilities located on the Subject Property. Permits and inspection records were reviewed to determine if any past activities constituted a REC to the Subject Property. Information from the permits was also used to supplement information from other sources for the purpose of generating a chronological history of all developments within the Subject Property.

3.6.2 Historical Clippings

Three news articles (clippings) were obtained from the Oakland Public Library related to the Children's Hospital. The first, an article titled "History of The Baby Hospital" was taken from *The Baby Hospital Bulletin*, a monthly publication produced by the Baby Hospital Association of Alameda County. The article is from the first monthly publication, dated August 1914 and outlines the history of the Children's Hospital. According to the article, the Baby Hospital officially opened its doors as the Baby Hospital around 1913 in a residence formerly owned by the McElrath family and located at 51st Street and Dover Street. The second, an article published in the *Berkeley Chronicle*, dated April 4, 1941 describes the transition of the hospital from the residential building into a new building similar to what is presently there. According to the article, on March 27, 1928, portions of the current building were constructed. The third, an article published in the *San Francisco Tribune* on May 17, 1945, outlines the expansion of the hospital into the facility currently located on the Subject Property today.

3.6.3 Historical Photographs

Two historical photographs that show the Children's Hospital were obtained from the Oakland Library. The first photograph, dated 1914, shows the Children's Hospital (then called the Baby Hospital) as it appeared when it occupied the McElrath residence. The second photograph, an illustration of the planned hospital expansion from an article dated May 17, 1945, illustrates the proposed Children's Hospital building, which is how the ABC wings of the hospital appears today.

3.7 Interviews

Individuals were interviewed in order to obtain information regarding the current or past use of petroleum hydrocarbons or other hazardous materials within the Subject Property. Information obtained from interviews is cross-referenced with information gathered from other sources such as databases, regulatory agencies or historical documents.

Mr. Michael Carlson

Mr. Michael Carlson works as a Stationary Engineer for the Children's Hospital and has been familiar with the Subject Property for more than 20 years. According to Mr. Michael Carlson, a UST was formerly located next to the electrical room. Mr. Carlson had no knowledge of the quantity or type material stored in the UST. According to Mr. Carlson, the UST was removed prior to his association with the hospital. Mr. Carlson was present during the site reconnaissance.

3.8 Summary

Based on the review of historical data obtained through EDR, the City of Oakland Planning and Building Departments, the City of Oakland Library, and an EIR it appears that the Subject Property was first developed in the early 1910s. The following is a summary of the history of the Subject Property based on current and historical records and interpretations by SGI. A summary of the Subject Property development follows.

- The Subject Property was first developed sometime in the early 1900s and consisted of single-family residences, including the McElrath Mansion property;
- In 1912, the McElrath Mansion property was acquired by the Baby Hospital Association, and around 1913 or 1914, the Children's Hospital of Oakland (then called the Baby Hospital) formerly opened its doors;
- In 1928, the McElrath Mansion property was demolished and the AB&C building portion of the current hospital was constructed;
- In 1930, the Baby Hospital was renamed Children's Hospital of the East Bay;
- In 1959, a research laboratory was built across 51st Street from the existing hospital;
- In 1962, the diagnostic and treatment center (D&T building) portion of the main hospital was constructed;
- In 1963, a nurses' dormitory was built along the northwest corner of the intersection of Grove and 52nd Streets;
- In 1964, the hospital was renamed Children's Hospital Medical Center of Northern California;
- In 1975, a third floor was added to the D&T building and a second floor was added to the research laboratory built in 1959;
- In 1982, the 82-Tower building portion of the main hospital was constructed; and

- In the mid 1990s, the Western Expansion building of the main hospital was constructed.

Based on the review of historic documents for facilities located on and adjacent to the Subject Property, no facilities were identified that warranted further investigation.

4.0 SITE RECCONNAISANCE

On July 23, 2008, SGI conducted a site reconnaissance of the Subject Property. An exterior site reconnaissance was performed for all areas of the Subject Property. However, for the residential homes, the exterior site reconnaissance was limited to the street. In addition, an interior site reconnaissance was performed for the main hospital building. The objective of the site reconnaissance was to obtain information indicating the likelihood of identifying RECs in connection with the Subject Property.

Individuals were also interviewed in order to obtain information regarding the current or past use of petroleum hydrocarbons or other hazardous materials within the Subject Property. Information obtained from interviews is cross-referenced with information gathered from other sources such as databases, regulatory agencies or historical documents.

A copy of the photographic log from the site reconnaissance is included as Appendix A.

4.1 Subject Property

4.1.1 Structures

A number of structures were observed on the Current Campus and Residential Area. On the Current Campus, structures present included the main hospital building, an outpatient care center, a parking garage, an office building, and a helipad. In the Residential Area, residential single-family homes and the Family Center were observed. A description of each is provided below.

Current Campus

Main Hospital

During the site reconnaissance, the interior and exterior of the main hospital building were observed. The main hospital building consisted of a five-story structure that was completed in four stages beginning in the late 1920s up through the mid-1990s. These four stages are reflected in the four sections of the hospital building known as the AB&C building, the D&T building, the 82-Towers building, and the Western Expansion building (Figure 3). The main hospital houses patient care rooms, laboratories, a generator room, a steam plant, electrical rooms, offices, and a cafeteria/kitchen. On each floor, two janitorial storage closets housing general cleaning supplies were observed. Outside of the main hospital building on the southwest corner, a loading dock and dumpster area were observed. Near the loading dock, the biohazard waste storage area is located. Biohazard wastes, such as used surgical supplies, are heated in an outdoor autoclave prior to disposal into the general refuse dumpster. Also within this

area, various storage vans and a paint shed were observed. According to Mr. Carlson, the storage vans are used for storing small quantities of hydraulic fluid and oil for the onsite generators. No staining was observed.

Remaining Structures

During the site reconnaissance, the outpatient care center, parking garage, office buildings, and helipad were observed from the exterior. Numerous storage sheds were observed beneath the helipad that according to Mr. Carlson, are used for storing construction materials related to ongoing construction activities at the hospital. Items stored included metal debris, small quantities of paint, pipe-fittings, and scrap wood. In addition, two 55-gallon drums were observed on the Subject Property beneath the helipad in the construction materials storage area. The contents of the drums are unknown but both drums were labeled as hazardous. No stains or spills were observed. The Subject Property was observed to be entirely paved with the exception of landscaped potions associated with the hospital.

Residential Area

The Residential Area includes the Family Center and adjacent residential properties. The site reconnaissance of the Residential Area was limited to the exterior of the properties from the street. No RECs were identified within the Residential Area.

4.1.2 On-Site Chemical and Petroleum Product Storage

SGI looked for chemicals, hazardous substances, petroleum-based fuels and lubricants, and janitorial and cleaning supplies stored on the Subject Property. A number of hazardous materials were observed inside the storage vans located on the Subject Property and in janitorial closets inside the hospital building. These materials included paint and various other chemicals related to the construction activities and maintenance of the on-site generators located on the Subject Property. All materials were located within enclosed storage vans and no evidence of spills or stains was observed. No floor drains were observed in any of the storage areas. Based upon our observations no RECs were observed for hazardous materials storage.

4.1.3 Waste Disposal Practices

SGI identified the current wastes generated at the Subject Property. Waste generated on the Subject Property consisted of biohazard waste related to hospital activities, oily wastes related to restaurant operations, and general refuse. All wastes were disposed of into a dumpster located in a fenced enclosure outside near the loading docks at the southwest portion of the main hospital building.

Biohazard waste was autoclaved prior to deposition. In addition, autoclaved needles were stored in separate 55-gallon labeled trash bin inside the dumpster area.

4.1.4 Storage Tanks

Owners and operators of certain USTs are required to register those USTs with the state agency responsible for administrating the federally mandated UST program. SGI visually observed the Subject Property for surficial evidence of current USTs and ASTs. One 8,000-gallon diesel UST was present in the vicinity of the loading dock/dumpster area just outside the southwest portion of the main hospital building. According to Mr. Carlson, diesel fuel is used to power the backup generators. In addition, Mr. Carlson indicated that sometime in the past, a UST was located south of the engineering building at the corner of B and C sections of the AB&C building (Figure 3). The contents of the UST are unknown and to the best of his knowledge, the UST has been removed. No further information regarding the UST was available.

4.1.5 Polychlorinated Biphenyls (PCBs)

Federal regulations put into effect following the Toxic Substances Control Act (TSCA) require that electrical transformers be labeled to identify their PCB content. Manufacture and distribution of PCBs was banned in 1979. Transformer owners are responsible for compliance with all applicable regulations governing those transformers, including maintenance of the transformer and any remediation work resulting from a transformer-related incident.

Pacific Gas and Electric (PG&E), the owner of the electrical transformers at the Subject Property, would be responsible for proper removal and disposal of the transformers, if required.

4.1.6 Exterior Surface Condition

SGI observed the exterior surface of the Subject Property. No pits, ponds, lagoons, or areas of distressed or dead vegetation were observed at the Subject Property during the site reconnaissance. Most of the Subject Property is paved except for landscaped areas. Several storm drains were observed in the streets that border the Subject Property.

4.1.7 Asbestos Containing Materials and Lead Based Paints

Those buildings at the project site constructed prior to the 1980s may have lead and asbestos present in some form. Prior to 1978, lead compounds were commonly used in interior and exterior paints. Prior to the 1980s, building materials often contained asbestos fibers, which were used to provide strength and

fire resistance. Demolition of the project site buildings has the potential to release lead particles, asbestos fibers, and/or other hazardous materials to the air, where they may be inhaled by construction workers and the general public. In addition, 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.

B and C Wings of the AB&C Building are scheduled to be demolished within the Subject Property. An asbestos and lead-based paint materials survey has recently been completed in Wings B and C by SGI. The results of the survey will be presented in a separate report.

4.2 Surrounding Areas

The Subject Property is located in an area characterized as mixed commercial/residential. The Subject Property is bounded to the north by 53rd street with single-family residences beyond, to the east by Highway 24 with residential properties beyond, to the south by Highway 24, and to the west by Martin Luther King Jr. Way with parking lots and multi-level residences beyond. No RECs were observed during the exterior reconnaissance of the immediately adjacent surrounding areas.

5.0 RECORDS REVIEW

5.1 Environmental Data Resources Database Review

To investigate the current regulatory status of the Subject Property and surrounding properties, SGI reviewed environmental databases to obtain information concerning the usage, storage, treatment, and disposal of hazardous substances. EDR was subcontracted for this service. The database information was reviewed to identify previous off-site activities and/or facilities that may represent an environmental concern to the subject property. EDR reports are included as Appendix H.

The databases discussed in this section were reviewed for information regarding documented and/or suspected releases of regulated hazardous substances and/or petroleum products on or near the subject property. The following federal, state and local government databases were reviewed.

Federal ASTM Standard

Database	Description
NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
NPL Recovery	National Priority Lists Sites Recovery
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
CORRACTS	Corrective Action Report
ICIS	Integrated Compliance Information System
RCRA-TSD	Resource Conservation and Recovery Information System
RCRA-LGQ	Resource Conservation and Recovery Information System – Large Quantity Generator
RCRA-SQG	Resource Conservation and Recovery Information System – Small Quantity Generator
ERNS	Emergency Response Notification System
FUDS	Formerly Used Defense Sites
ODI	Open Dump Inventory
UMTRA	Uranium Mill Tailings Sites
US ENG CONTROLS	Engineering Controls Sites List
US INST CONTROLS	Sites with Institutional Controls

State ASTM Standard

Database	Description
AWP	Annual Workplan Sites
Cal-Sites	California Sites List
CHMIRS	California Hazardous Material Incident Reporting System
Cortese	Cal-EPA/Office of Emergency Information Property Database
Notify-65	State Water Resources Control Board Proposition 65 Database
Toxic Pits	Toxic Pits Cleanup Act Sites
SWF/LF	Solid Waste Information System
WMUDUDS/SWAT	Waste Management Unit Database
LUST	Leaking Underground Storage Tank Incident Reports
CA BOND EXP. PLAN	Bond Expenditure Plan
SWRCY	Recycler Database
UST	Registered Underground Storage Tanks Database
VCP	Voluntary Cleanup Program Properties
INDIAN LUST	Leaking Underground Storage Tanks on Indian Land
INDIAN UST	Underground Storage Tanks on Indian Land
CA FID	Facility Inventory Database
Hist UST	Historical Underground Storage Tank Database
SWEEPS UST	Statewide Environmental Evaluation and Planning System UST lists
WIP	Well Investigation Program Case List

Federal ASTM Supplemental

Database	Description
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records of Decision
Delisted NPL	National Priority List Deletions
FINDS	Facility Index System/Facility Identification Initiative Program Summary Report
HMIRS	Hazardous Materials Information Reporting System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index Files
NPL Liens	Federal Superfund Liens
PADS	PCB Activity Database System
DOD	Department of Defense Sites

Database	Description
US BROWNFIELDS	Listing of Brownfields Sites
RAATS	RCRA Administrative Action Tracking System
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
SSTS	Section 7 Tracking Systems
FTTS INSP	FIFRA/TSCA Tracking System – FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

State or Local Supplemental

Database	Description
AST	Aboveground Petroleum Storage Tank Facilities
CLEANERS	Cleaner Facilities
CDL	Clandestine Drug Labs
CA WDS	Waste Discharge System
CS	A list of contaminated sites overseen by the Toxic Release Program
DEED	List of Deed Restrictions
SCH	School Property Evaluation Program
EMI	Emissions Inventory Data
ENVIROSTOR	Department of Toxic Substance Controls database listing sites with known contamination.
HAZNET	Facility and Manifest Data
REF	Unconfirmed Properties Referred to Another Agency
NFA	No Further Action
NFE	Properties Needing Further Evaluation
CA SLIC	SLIC Region Data base from California Regional Quality Control Board
Haznet	Hazardous Waste Manifest Database from Department of Toxic Substances Control
RESPONSE	State Response Sites
SL	Alameda County Property List

EDR Proprietary Historical Databases

Database	Description
Manufactured Gas Plants	Former Manufactured Gas Sites
Historical Auto Stations	Historical Auto Stations
Historical Cleaners	Historical Cleaners

Brownfields Databases

Database	Description
US BROWNFIELD	A Listing of Brownfields Sites
VCP	Voluntary Cleanup Program Properties

5.2 Mapped Sites

Out of the databases searched above, only the following federal, state and local government databases contained mapped site listings within the appropriate search radius as specified in ASTM E 1527-05. See Appendix H for the complete EDR Radius Map database report.

Federal

Database	Description
RCRIS-SMQ	Resource Conservation and Recovery Information System – Small Quantity Generator
FINDS	Facility Index System/Facility Identification Initiative Program Summary Report

State

Database	Description
Cortese	Cal-EPA/Office of Emergency Information Site Database
SWEEPS-UST	Statewide Environmental Evaluation and Planning System – UST Database no longer updated
Notify-65	State Water Resources Control Board Proposition 65 Database
LUST	Leaking Underground Storage Tank Incident Reports
UST	Registered Underground Storage Tanks Database
CS	A list of contaminated sites overseen by the Toxic Release Program
CA FID	Facility Inventory Database
Hist UST	Historical Underground Storage Tank Database
AST	Above Ground Storage Tanks
HAZNET	Facility and Manifest Data
CLEANERS	Cleaner Facilities

State or Local Supplemental

Database	Description

CA SLIC	SLIC Region Data base from California Regional Quality Control Board
ENVIROSTOR	DTSC Database for Sites with known Contamination

5.2.1 Results of Database Review

To identify those facilities that constituted a recognized environmental condition to the Subject Property, mapped sites were evaluated on the nature of their listings, their location, and distance from the Subject Property. The topography of the Subject Property and adjacent areas slopes toward the southwest. Groundwater flow is reported by EDR to be towards the north. Facilities warranted further investigation if they were located hydraulically upgradient of the Subject Property within a distance of 1/4-mile and had a known release of a hazardous material affecting soil or groundwater. In addition, those facilities which were located hydraulically downgradient and within 1/8-mile of the Subject Property and had a known release of a hazardous material affecting groundwater also warranted further investigation. Of the mapped facilities, seven met the screening criteria described above and warranted additional investigation. These seven facilities include:

- Children's Hospital of Oakland located on the Subject Property at 747 52nd Street;
- Children's Hospital of Oakland located southwest of the Subject Property at 4701 Martin Luther King Jr. Way;
- PG&E Station D formerly located northeast of the Subject Property on the corner of 51st Street and Shattuck Avenue;
- Jin H. Kang formerly located northeast of the Subject Property at 5131 Shattuck Avenue;
- Arco Station #01468 located northeast of the Subject Property at 5131 Shattuck Avenue; and
- Former Chevron Station located northeast of the Subject Property at 5101 Telegraph Avenue.
- Berkeley Land Company (formerly One-Hour Martinizing).

Children's Hospital of Oakland (747 52nd Street)

The Children's Hospital of Oakland (747 52nd Street) is listed in the EMI, HAZNET, RCRA-SQG, FINDS, NY MANIFESTS, and UST databases. This facility is listed as a hospital and medical laboratory and stores small quantities (less than 1000 kilograms (kg)) of hazardous materials, which include photochemicals and metal sludge. No violations were noted and it appears that all hazardous materials were stored according to local, state, and federal guidelines. The facility is also registered with the Underground Storage Tank (UST) database for the operation of an 8,000-gallon diesel UST to power

onsite backup generators. Based on its lack of reported release, and location southwest of the proposed area of redevelopment, the presence of a UST on the Subject Property does not constitute a REC.

Children's Hospital of Oakland (4701 Martin Luther King Jr. Way)

The Children's Hospital of Oakland is listed in the LUST, Cortese, and CS databases. The site is currently developed as an offsite parking lot for CHRCO. In October 1990, a release of gasoline affecting groundwater was discovered during the removal of three USTs. Preliminary site assessment is currently underway. Additional information regarding this site is discussed further below..

PG&E Station D

The PG&E Station D is listed in the Historical UST database for having a UST. No leaks were detected in the tank. No additional information was available.

Jin H. Kang

The Jin H. Kang gas station is listed in the Historical UST database for four USTs. Three of the tanks consisted of 12,000-gallon USTs used for storing product and were installed in 1980. The fourth tank, a 150-gallon UST used for storing waste oil, was installed in 1968. This facility is listed under the same address as the Arco station #06148 and is interpreted by SGI to have been replaced by the Arco station described below.

Arco Station #01468

The Arco Station #01468 is listed in the HAZNET, LUST, Cortese, CA FID UST, EMI, SWEEPS UST, UST, and CS databases. On January 6, 1987, a release of waste oil affecting groundwater was discovered during maintenance of a UST. Characterization of affected groundwater was initiated April 6, 1992 and is still being conducted. In addition, another release from a UST was discovered during a tank closure. A preliminary site assessment is underway. Based on the nature of the release and its proximity this site is not judged to represent a REC to the Subject Property.

Former Chevron Station

The Chevron station is listed in the Notify-65, HAZNET, LUST, Cortese, CA FID UST, and CS databases. On January 1, 1991, a release affecting groundwater was discovered during a UST closure. Groundwater samples collected at the site had detectable concentrations of MTBE. Based on its distance from the Subject Property and the nature of its release, this site does not constitute a REC to the Subject Property.

Berkeley Land Company (former One-Hour Martinizing)

The Berkeley Land Company is listed in the LUST, Cortese, and CS databases. On May 31, 1995, a release of tetrachloroethene (PCE) and petroleum hydrocarbons affecting groundwater was detected during the closure of a UST. The site is currently listed with a regulatory status of "closed" with a close date of January 6, 1999. Based on its distance from the Subject Property, regulatory status, and nature of the release, this site does not constitute a REC to the Subject Property.

Other Releases Identified

A number of historical dry cleaning operations and automotive service stations were identified by EDR within ¼-mile and upgradient of the Subject Property. Both types of facilities have the potential to release petroleum fuels or solvents to groundwater. It is SGI's opinion that the potential for any such releases to have migrated to and be present in groundwater underlying the Subject Property at concentrations that would pose regulatory or human health risk concerns is low due to the nature of potential releases and characteristics of the chemicals released. Therefore, none of these facilities constitutes a REC to the Subject Property.

Unmappable (Orphan) Site Listings

The Source Group also reviewed the "unmappable" (also referred to as "orphan") listings within the EDR database report, cross-referencing available address information and facility names. Unmappable sites are listings that cannot be plotted with confidence, but are identified as being located within the general area of the Project Area based on the partial street address, city name, or zip code. In general, a listing cannot be mapped due to inaccurate or incomplete address information in the database that was supplied by the corresponding regulatory agency. Each orphan site was reviewed and an attempt was made to determine if the site was within the boundaries of the Subject Property. None of the sites were located within the Subject Property boundary and as such do not represent a REC.

5.3 Local Agency File Review

Based on the review of historical documents and photographs, conducting a site walk and from the review of the EDR database results, one facility, The Children's Hospital of Oakland site located at 4701 Martin Luther King Jr. Way, was identified as a potential REC and warranted additional assessment to determine their past use and development, and to estimate the environmental impact (if any) to the Subject Property. To determine whether this facility constituted a REC to the Subject Property, site investigation reports were obtained from the Alameda County Department of Environmental Health online database and reviewed. Below is a summary of the findings.

In April/May 2002, a soil and groundwater investigation was conducted by West Environmental Services and Technology (West) for CHRCO. The investigation included the advancement of three soil borings down to a maximum depth of 35 feet below ground surface (bgs), the collection of 12 soil samples, and

the installation and sampling of three groundwater monitoring wells. Soil samples had detectable concentrations of total petroleum hydrocarbons as gasoline (TPHg) and total petroleum hydrocarbons as diesel (TPHd). Groundwater samples were analysed for TPHg, benzene, toluene ethylbenzene, xylene (BTEX), and methyl-tert butyl alcohol (MTBE). Based on the screening level risk assessment (SLRE) completed by West, only TPHg concentrations in one groundwater sample exceeded risk-based screening levels. Therefore, West recommended case closure for the site (West, 2002). Groundwater flow, according to investigation conducted by West, is reported to be towards the south-southeast (West, 2002). Based on its distance from the Subject Property and relative groundwater flow direction, this facility does not constitute a REC to the Subject Property.

6.0 CONCLUSIONS

SGI has performed this Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-05 for the Subject Property located at 747 52nd Street, Oakland, California. Any additions to, exceptions to, or deletions from this practice are described in Section 1 of this report.

The Subject Property is located in an area characterized as mixed commercial/residential. The Subject Property is bounded to the north by 52nd street with single-family residences beyond, to the east by Highway 24 with residential properties beyond, to the south by Highway 24, and to the west by Martin Luther King Jr. Way with parking lots and multi-level residences beyond.

Based on the review of historical data obtained through EDR, the City of Oakland Planning and Building Departments, the City of Oakland Library, and an EIR it appears that the Subject Property was first developed in the early 1910s. The current hospital structure was first built in 1928 and consisted of the AB&C building portion the main hospital. Based on the review of historic documents for facilities located on and adjacent to the Subject Property, no facilities were identified that warranted further investigation.

During the site reconnaissance, the Subject Property was observed to be occupied by five structures including a parking garage, outpatient care center, main hospital building, office building, and helipad. In addition, single-family residences along with a Family Center occupied the northern portion of the Subject Property. The site reconnaissance was limited to the exterior of all structures with the exception of the main hospital building. During the site reconnaissance various hazardous materials (e.g., paints, small quantities of petroleum products) related to construction activities and other maintenance activities were observed inside storage containers present on the Subject Property. In addition, various construction materials associated with ongoing construction activities were observed underneath the helipad. No staining was observed. One 8,000-gallon diesel UST is currently in operation at the main hospital. In addition, one historical UST was present just south of the engineering room. According to Mr. Carlson, this UST has been removed. However, the contents and size of the UST is unknown. No further information as to the origins or whether any contamination was present upon removal was available. The Subject Property is almost entirely paved except for general landscaped areas.

A number of facilities are located near the Subject Property that appears on one or more agency databases. Based on the nature of their releases, distance from the Subject Property, and relative location to the Subject Property, none constituted a REC to the Subject Property.

This assessment has revealed no evidence RECs in connection with the Subject Property.

The following environmental concerns, which are not RECs, were noted during this assessment:

Former UST: According to CHRCO personnel (Mr. Michael Carlson) a UST was located south of the engineering building at the corner of B and C sections of the AB&C building (Figure 3). The contents of the UST are unknown and to the best of his knowledge, the UST has been removed. No further information regarding the UST was available. SGI understands that future projects may include excavation and dewatering associated with the reconstruction of hospital building wings B and C. Depending on the depth and location of future excavations and, or trenching, the potential exists to encounter soil and groundwater that has been impacted with releases associated with the former UST. Mitigation measures should be developed for worker health and safety considerations and the proper management of impacted soil and groundwater.

Upgradient Release Sites: Based on our historical research, we identified several documented fuel and solvent release sites located near (<1/4 mile) and upgradient of the Subject property. It is SGI's opinion that the potential for such releases to have migrated to and be present in groundwater underlying the Subject Property at concentrations that would pose regulatory or human health risk concerns is low due to the magnitude of the releases and characteristics of the chemicals released.

SGI understands that future projects may include excavation and dewatering associated with the reconstruction of hospital building wings B and C. Excess soil and groundwater generated from excavations and dewatering that will be disposed of offsite should be tested to confirm that it is non-hazardous and meets the acceptance criteria of the receiving facility. The sampling frequencies and test methods employed to characterize the soil or groundwater are typically determined by the disposal facility accepting the soil or groundwater.

ACM and LBP: Those buildings at the Subject Property constructed prior to the 1980s may have lead and asbestos present in some form. Prior to 1978, lead compounds were commonly used in interior and exterior paints. Prior to the 1980s, building materials often contained asbestos fibers, which were used to provide strength and fire resistance. Demolition of the Subject Property buildings has the potential to release lead particles, asbestos fibers, and/or other hazardous materials to the air, where they may be inhaled by construction workers and the general public. In addition, 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. Although the presence of these materials is not a REC, this is an environmental concern. Removal and disposal of these materials should be conducted according to the applicable Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) guidelines and recommendations.

7.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

We declare that, to the best of our professional knowledge and belief, we meet the definition of environmental professional as defined in §312.10 of 40 CFR 312. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed this Phase I ESA in general conformance with the standards and practices set forth in ASTM Designation: E 1527-05.

Report Prepared by:

Nathan Colton
Senior Staff Scientist

Report Reviewed by:

Kent R. Reynolds
Principal Geologist

Patrick Kelleher
Project Geologist

8.0 REFERENCES

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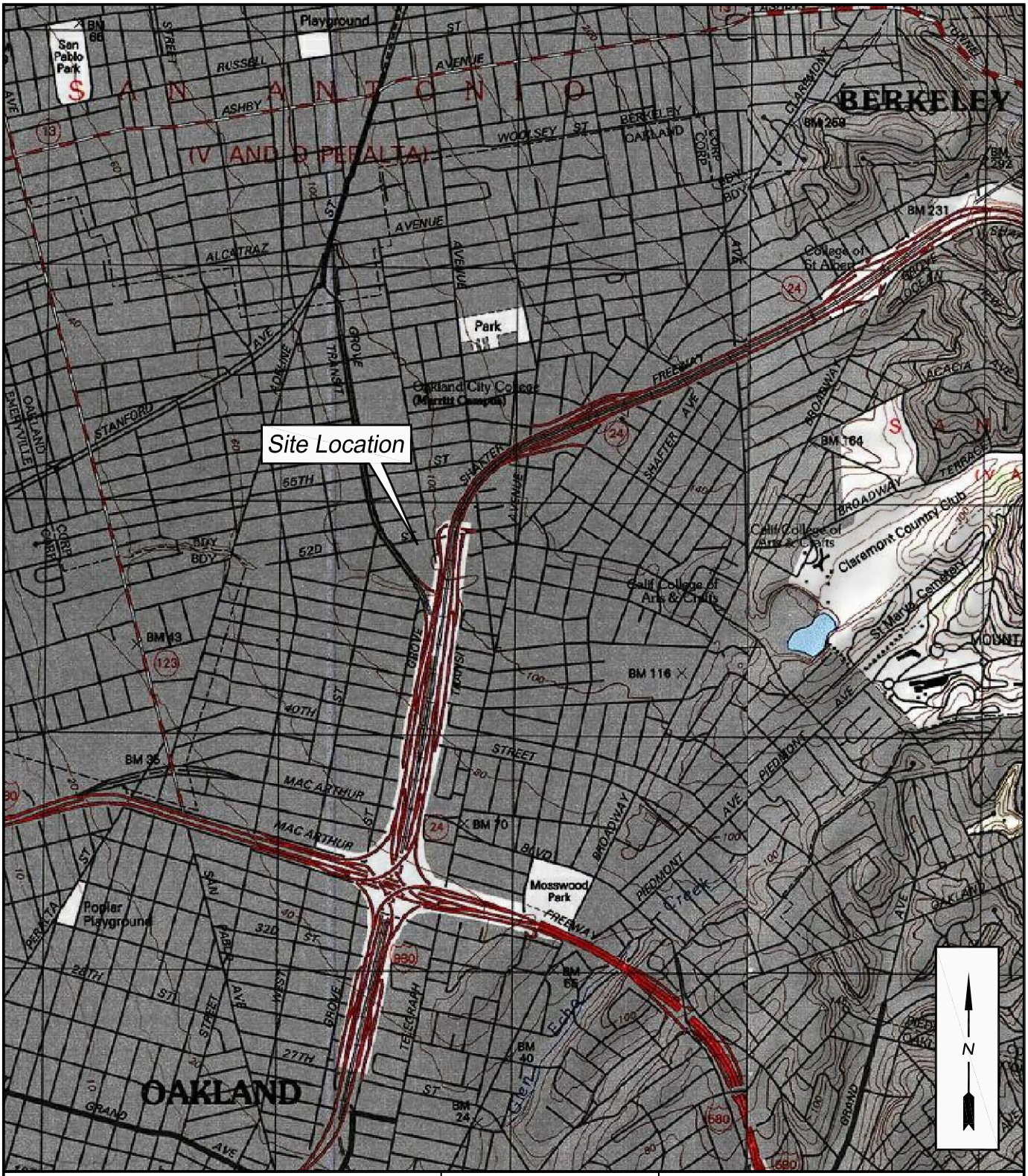
FIGURES



SGI environmental

THE SOURCE GROUP, INC.

3451 VINCENT ROAD, SUITE C
PLEASANT HILL, CA 94523

SOURCE: U.S.G.S. 7.5° QUAD SHEET
OAKLAND WEST, CALIFORNIA
REVISED 1993

SCALE: 0 FEET 2000

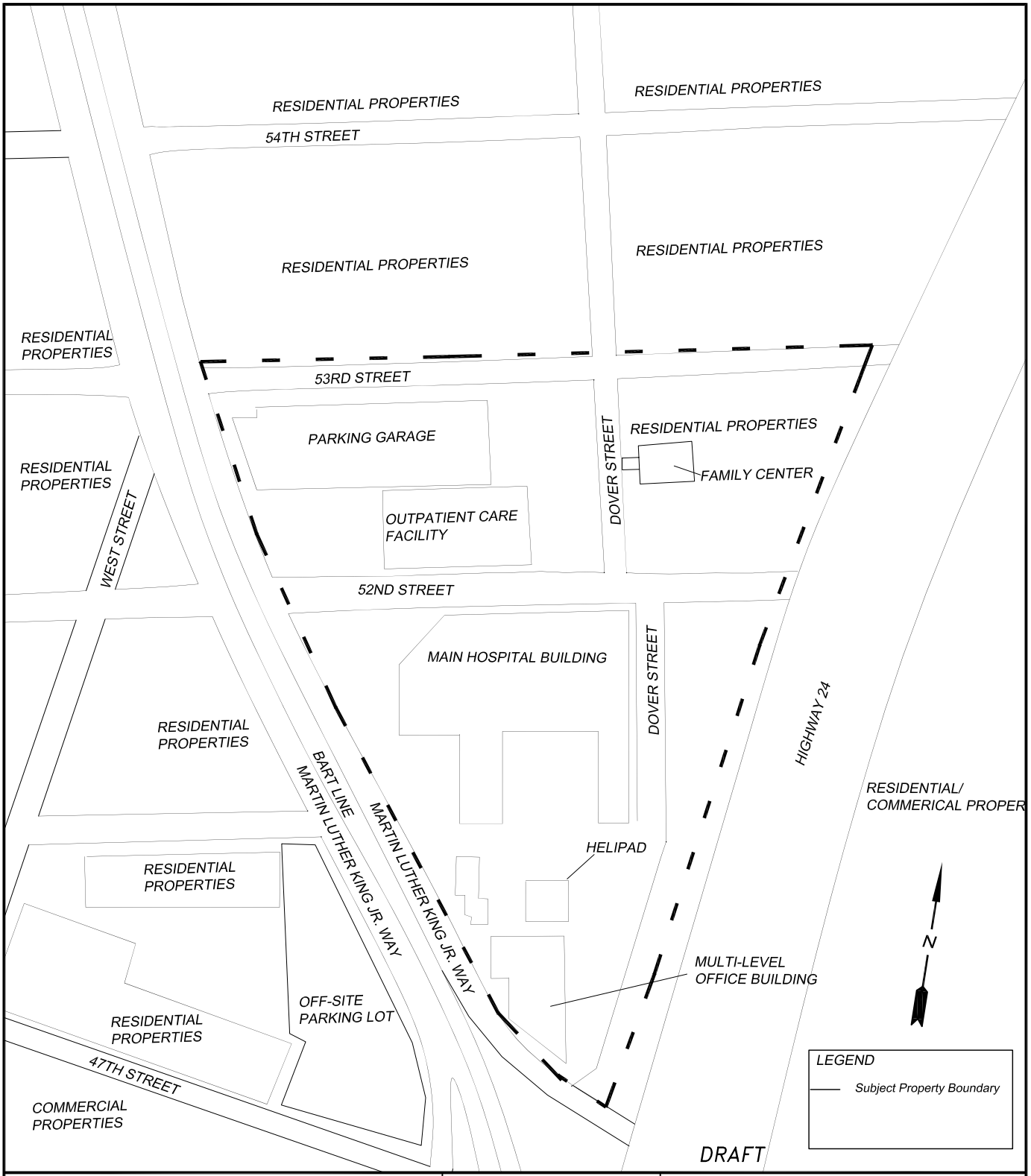
SUBJECT PROPERTY LOCATION MAP

CLIENT: CHILDREN'S HOSPITAL & RESEARCH CENTER OAKLAND

DATE: 8/8/08

LOCATION: 747 52nd STREET
OAKLAND, CALIFORNIA

FIGURE: 1



SGI environmental

THE SOURCE GROUP, INC.

3451-C VINCENT ROAD
PLEASANT HILL, CALIFORNIA 94523

SCALE: 0 FEET 200

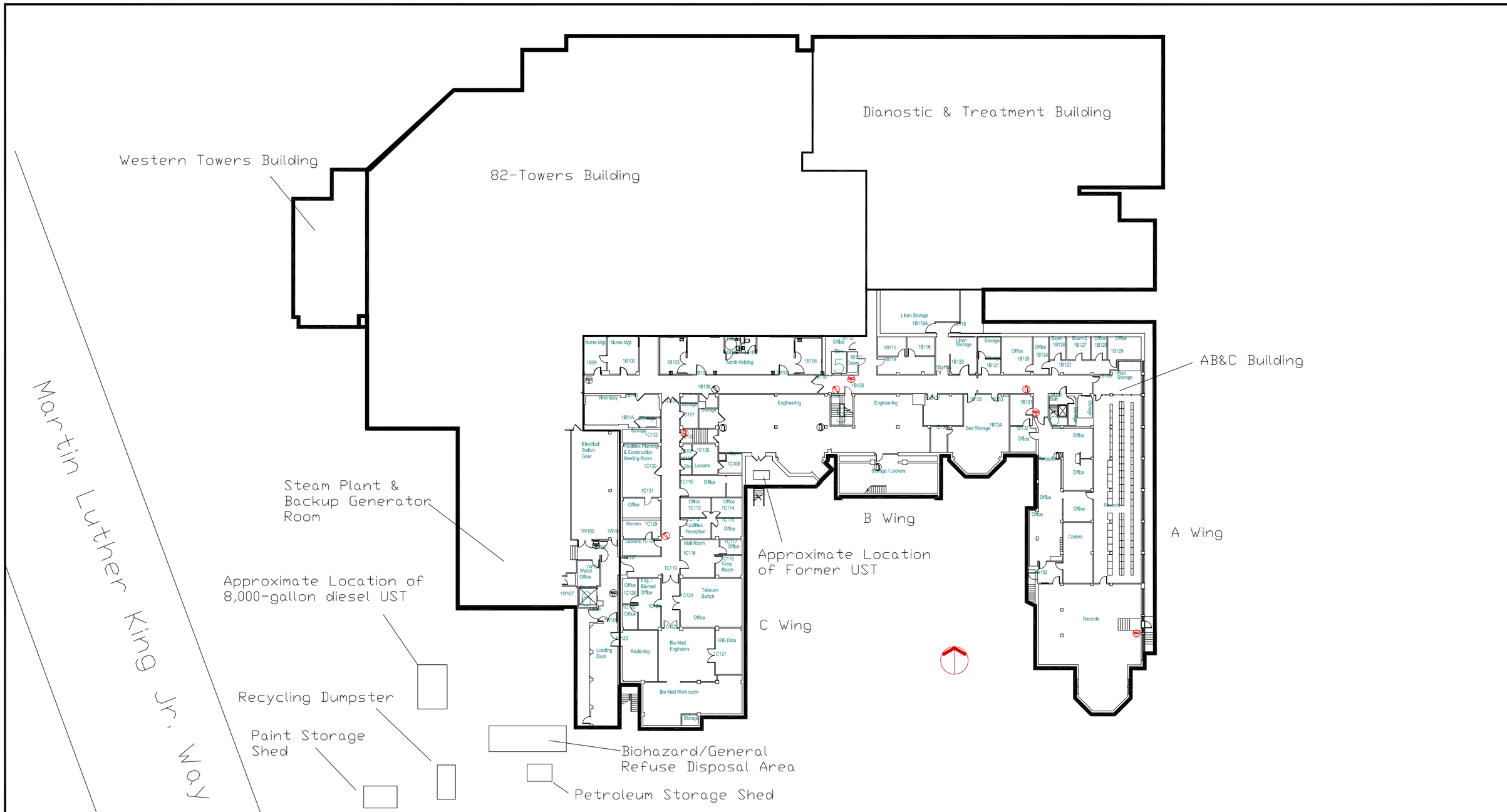
SUBJECT PROPERTY VICINITY MAP

CLIENT: CHILDREN'S HOSPITAL & RESEARCH CENTER OAKLAND

DATE: 5/8/08

LOCATION: 747 52nd STREET OAKLAND, CALIFORNIA

FIGURE: 2



SOURCE GROUP, INC. environmental 3451-C VINCENT ROAD PLEASANT HILL, CALIFORNIA 94523	SCALE: 0 30 SCALE IN FEET	CLIENT: Harris & Associates, Inc. FACILITY: Childrens Hopsital & Research Center Oakland Oakland, California		**FIGURE 3** **SUBJECT PROPERTY MAP**
	PROJECT NO. 01-COH.002	DATE: 5/8/08	DRAWN BY: NC	APP. BY: KR

APPENDIX A

SITE RECONNAISSANCE PHOTOGRAPHS

Client Name: Children's Hospital and Research Center Oakland **Photo Date:** 7/23/08

Project: Children's Hospital and Research Center Oakland Phase I ESA

Photograph 1: *View of the front of the Main Hospital Building looking south from the corner of 52nd Street and Martin Luther King Jr. Way.*

Photograph 2: *View of Subject Property looking northeast from the southwest corner. Note helipad in background.*

Client Name: Children's Hospital and Research Center Oakland **Photo Date:** 7/23/08

Project: Children's Hospital and Research Center Oakland Phase I ESA

Photograph 3: *View of Subject Property looking northeast from the corner of 52nd Street and Martin Luther King Jr. Way. Note parking garage in left background and Outpatient Care Center in right background.*

Photograph 4: *View of the Subject Property looking west from the corner of 52nd Street and Martin Luther King Jr. Way. Note residential properties west of the Subject Property.*

Client Name: Children's Hospital and Research Center Oakland **Photo Date:** 7/23/08

Project: Children's Hospital and Research Center Oakland Phase I ESA

Photograph 5: *View of the Subject Property looking southeast from the corner of 53rd Street and Martin Luther King Jr. Way. Note parking garage in foreground.*

Photograph 6: *View of the Subject Property looking east from the corner of 53rd Street and Martin Luther King Jr. Way.*

Client Name: Children's Hospital and Research Center Oakland **Photo Date:** 7/23/08

Project: Children's Hospital and Research Center Oakland Phase I ESA

Photograph 7: *View of Subject Property looking southwest from the corner of Dover Street and 53rd Street. Note D&T portion of the Main Hospital in the background.*

Photograph 8: *View of boilers located in the engineering room.*

Photograph 9: *View of one of the nurses' station located in the main hospital.*

Photograph 10: *View of oxygen cylinders located in a biohazard waste storage room located in the main hospital building.*

Client Name: Children's Hospital and Research Center Oakland **Photo Date:** 7/23/08

Project: Children's Hospital and Research Center Oakland Phase I ESA

Photograph 11: *View of a janitorial cleaning closet located in the main hospital.*

Photograph 12: *View of the biohazard waste disposal area. Note autoclave oven in the background and dumpster in the left foreground.*

Client Name: Children's Hospital and Research Center Oakland **Photo Date:** 7/23/08

Project: Children's Hospital and Research Center Oakland Phase I ESA

Photograph 13: *View of recycling dumpster. Note paint shed in the background and petroleum storage van in left foreground.*

Photograph 14: *View of paints located in the paint shed.*

Client Name: Children's Hospital and Research Center Oakland **Photo Date:** 7/23/08

Project: Children's Hospital and Research Center Oakland Phase I ESA

Photograph 15: *View of the hydraulic oil containers located in the storage van depicted in photograph 13.*

Photograph 16: *View of the boilers located in the steam plant.*

Client Name: Children's Hospital and Research Center Oakland **Photo Date:** 7/23/08

Project: Children's Hospital and Research Center Oakland Phase I ESA

Photograph 17: *View of the back-up generators located in the steam plant.*

Photograph 18: *View of the location of the former UST.*

Client Name: Children's Hospital and Research Center Oakland **Photo Date:** 7/23/08

Project: Children's Hospital and Research Center Oakland Phase I ESA

Photograph 19: *View construction supplies stored beneath the helipad.*

Photograph 20: *View of the two 55-gallons drums labeled as hazardous located in the construction materials storage area.*

Client Name: Children's Hospital and Research Center Oakland **Photo Date:** 7/23/08

Project: Children's Hospital and Research Center Oakland Phase I ESA

Photograph 21: *View of pipe-fittings and construction materials stored beneath the helipad.*

Photograph 22: *View looking northwest from the southern portion of the Subject Property. Note BART transit line overhead and multi-level residential structures located in the background.*

Client Name: Children's Hospital and Research Center Oakland **Photo Date:** 7/23/08

Project: Children's Hospital and Research Center Oakland Phase I ESA

Photograph 23: *View looking south from the western perimeter of the Subject Property. Note off-ramp to Highway 24.*

Photograph 24: *View of residential homes located north of the Subject Property. View is looking north from the northern portion of the Subject Property.*

Client Name: Children's Hospital and Research Center Oakland **Photo Date:** 7/23/08

Project: Children's Hospital and Research Center Oakland Phase I ESA

Photograph 25: *View of looking east from the corner of 53rd and Dover Streets. Note residential homes in the foreground.*

Photograph 26: *View looking east from the corner of 52nd and Dover Streets. Note Highway 24 overpass in foreground.*

APPENDIX H

WATER SUPPLY DOCUMENTATION

APPENDIX H1: ***Water Supply Assessment Confirmation***

APPENDIX H2: ***Revised Water Supply Assessment Request***

APPENDIX H3: ***Water Supply Assessment***

APPENDIX H4: ***Request for Confirmation of Water Supply Assessment***

APPENDIX H1

Water Supply Assessment Confirmation

EAST BAY
MUNICIPAL UTILITY DISTRICT

April 4, 2014

Heather Klein, Planner III
City of Oakland - Strategic Planning Division
Department of Planning, Building, and Neighborhood Preservation
250 Frank H. Ogawa Plaza, Suite 3315
Oakland, CA 94612-2032

Re: Satisfaction of Water Supply Assessment for the Children's Hospital and Research Center Oakland Campus Master Plan Project

Dear Ms. Klein:

This letter is in response to your request dated April 1, 2014 for water agency consultation concerning the reconfirmation of the Water Supply Assessment (WSA) for the revised Children's Hospital and Research Center Oakland (CHRCO) Campus Master Plan Project. East Bay Municipal Utility District (EBMUD) appreciates the opportunity to provide this response.

On July 31, 2013, EBMUD received a request from the City of Oakland (City) for a WSA for the CHRCO Campus Master Plan Project. Pursuant to Sections 10910-10915 (SB-610) of the California Water Code, EBMUD approved the WSA and provided the City a written response to the WSA on October 8, 2013 (a copy was enclosed with your current request).

The estimated demand for the CHRCO Campus Master Plan in the approved WSA was about 152,000 gallons per day (gpd). Per the City's current request, the water demand for the revised CHRCO Campus Master Plan Project is estimated to be about 158,000 gpd; an increase of about 6,000 gpd. The overall project demand increase of approximately four percent is accounted for in our projections, which include minor variations in demand-attributed changes in development patterns; therefore, EBMUD concludes that the WSA approved by EBMUD on October 8, 2013 is still valid and a second WSA is not required for the CHRCO Campus Master Plan Project.

If you have any questions concerning this response, please contact David J. Rehnstrom, Senior Civil Engineer, at (510) 287-1365.

Sincerely,

William R. Kirkpatrick
Manager of Water Distribution Planning Division

WRK:KSG:sb
sb14_072.docx

APPENDIX H2

Revised Water Supply Assessment Request

CITY OF OAKLAND

DALZIEL BUILDING • 250 FRANK H. OGAWA PLAZA, SUITE 3315 • OAKLAND, CALIFORNIA 94612-2032

Department of Planning, Building and Neighborhood Preservation
Planning & Zoning Services Division

(510) 238-3941
FAX (510) 238-6538
TDD (510) 238-3254

CORRECTED

April 1, 2014

Mr. William Kirkpatrick
East Bay Municipal Utility District
Manager, Water Distribution Planning Division
P.O. Box 24055, MS 701
Oakland, CA 94607

RE: Revised Water Demand Calculations for the Children's Hospital and Research Center Oakland Campus Master Plan Project Water Supply Assessment

Dear Mr. Kirkpatrick:

At the City of Oakland's request, on October 8, 2013 the East Bay Municipal Utility District (EBMUD) issued a Water Supply Assessment (WSA) for the proposed Children's Hospital and Research Center Oakland Master Plan Project (project), located in Oakland. The WSA complied with the consultation requirements of Section 10910-10915 (SB 610) of the California Water Code. The WSA determined that the water demand projected for the proposed project is accounted for in EBMUD's water demand projections as published in EBMUD's 2010 Urban Water Management Plan. Since issuance of the WSA, the project has been modified and projected water demand is expected to slightly increase as further described below. The purpose of this letter is to request EBMUD's concurrence that the WSA issued for the project is still valid and that EBMUD has no additional concerns related to provision of water supplies to the proposed project.

April 2013 Project

The project described in the Notice of Preparation (NOP) of an Environmental Impact Report and considered in the WSA included demolition of approximately 79,037 square feet of use, construction of 406,054 square feet of new use, and renovation of 128,745 square feet, for a net increase of 342,364 square feet of use. The project included redevelopment activities at the Children's Hospital and Research Center Oakland (CHRCO) campus and associated Children's Hospital Oakland Research Institute (CHORI) campus. The water demand calculations for the April 2014 project show that the projected net increase in water demand for the project at build out would be approximately 152,000 gallons per day (gpd). These calculations are shown in the attached Water Supply Assessment Request Letter (July 31, 2013).

October 2013 Project

After the close of the NOP comment period, the project sponsor decided to withdraw redevelopment of the CHORI campus from the proposal and to revise certain aspects of 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. Currently, the proposed project would demolish a total of 66,582 square feet of existing uses on the campus, construct a total of 399,200 square feet of new building area, and renovate 128,745 square feet, for a total of 332,618 square feet of net new building area. Although the overall net new square footage would be less than the April 2013 project, the total net increase in demand generated by the revised October 2013 project would be 157,700 gpd, or approximately 5,700 gpd more than the April 2013 project (an approximately 3.75 percent increase over the April 2013 water demand), as shown in the attached Revised Water Demand Calculations table.

The City respectfully requests that EBMUD confirm that the water supply assessment issued for the proposed project is still valid and that EBMUD has adequate supplies to serve the projected demand for the revised project as described in this letter. Water demand calculations for the revised project are attached. We appreciate your prompt response to this request.

Please contact me if you need additional information. I can be reached at (510) 238-3659 or by email at HKlein@oaklandnet.com.

Sincerely,

Heather Klein
Planner III
Strategic Planning Division

cc: Doug Nelson, Children's Hospital & Research Center Oakland
Shannon Allen, LSA Associates

Attachments
Request for Confirmation of Water Supply (July 31, 2013)
Revised Water Demand Calculations (April 1, 2014)

CITY OF OAKLAND

DALZIEL BUILDING • 250 FRANK H. OGAWA PLAZA, SUITE 3315 • OAKLAND, CALIFORNIA 94612-2032

Department of Planning, Building and Neighborhood Preservation
Planning & Zoning Services Division

(510) 238-3941
FAX (510) 238-6538
TDD (510) 238-3254

July 31, 2013

Mr. William Kirkpatrick
East Bay Municipal Utility District
Manager, Water Distribution Planning Division
P.O. Box 24055, MS 701
Oakland, CA 94607

RE: Request for Confirmation of Water Supply Assessment for the proposed Children's Hospital and Research Center Oakland Master Plan Project

Dear Mr. Kirkpatrick:

Pursuant to Section 10910 of the Water Code, the City of Oakland is submitting this request to the East Bay Municipal Utility District (EBMUD) for a water supply assessment. The City is requesting EBMUD to determine whether the projected water demand associated with the proposed Children's Hospital and Research Center Oakland Master Plan Project (project) was included in the adopted Urban Water Management Plan and, if it was not included, to prepare a water supply assessment as outlined in Section 10910(c)(3) of the Water Code. The assessment is required in order to determine whether adequate water supply is available to meet the project water demand for the project. The project is currently in the planning stages. An Environmental Impact Report (EIR) is being prepared by the City of Oakland as lead agency, as indicated in the Notice of Preparation dated July 26, 2013 which you should already have received (and is attached for your reference).

Existing Children's Hospital and Research Center Oakland (CHRCO) facilities include the 11-acre CHRCO main campus and the 6.5-acre Children's Hospital Oakland Research Institute (CHORI) campus. The CHRCO main campus is located at 747 52nd Street and consists of 699,846 square feet of use. The CHORI campus is located at 5700 Martin Luther King Jr. Way, 0.4 mile north of the CHRCO campus and consists of 126,015 square feet of use. The proposed project would be constructed in two phases over the next several years. Ultimately, approximately 79,037 square feet of use would be demolished, 406,054 square feet would be constructed, and 128,745 square feet would be renovated, for a net increase of 342,364 square feet of use. (Approximately 15,350 square feet of the area to be renovated is the vacant CHROI Gymnasium, all other area to be renovated is currently occupied.)

The City respectfully requests that EBMUD prepare a water supply assessment for the proposed project as described in the Notice of Preparation. To assist EBMUD with the assessment, projected water demand calculations for the proposed project are also attached to this letter. The

City acknowledges that this request for an assessment is a required part of the environmental documentation for the project. We appreciate your prompt response to this request.

Please contact me if you need additional information. I can be reached at (510) 238-3659 or by email at HKlein@oaklandnet.com.

Sincerely,

Heather Klein
Planner III
Strategic Planning Division

cc: Doug Nelson, Children's Hospital & Research Center Oakland
Shannon Allen, LSA Associates

Attachments
Notice of Preparation
Water Demand Calculations

Children's Hospital Oakland Master Plan Water Demand Calculation

Phase 1	Use	Square Footage	Average Daily Sewer Flow (gpd/unit)[a]	Water Demand (gpd)[b]
Construction				
Outpatient Center 2 Building (OPC2) - medical[c]	Medical Office	85,700	300 gpd/1,000 gsf	30,081
Outpatient Center 2 Building (OPC2) - parking	Parking	7,000	0	0
Central Utility Plant	Utility	4,450	0	0
Demolition				
715 53rd Street	Office	1,530	200 gpd/1,000 gsf	358
707 53rd Street	Residential	1,923	330 gpd/du	386
5225 Dover Street	Office	2,000	200 gpd/1,000 gsf	468
5204 MLK Jr. Way	Office	1,041	200 gpd/1,000 gsf	244
Trailer (Ed Administration)	Office	2,108	200 gpd/1,000 gsf	493
Phase 1 Net New Construction & Water Demand		**88,548**		**28,132**

Notes:

a. Sanitary Sewer Generation Rates, City of Oakland Sanitary Sewer Design Standards, 2008.

b. Water demand was calculated by multiplying square footage of use (or number or dwelling units) by average daily sewer rate by 117%, as was the methodology used in the Alta Bates/Summit Medical Center Draft EIR.

c. OPC2 square footage above does not include 9,700 square foot mechanical penthouse and helistop

Phase 2	Use	Square Footage	Average Daily Sewer Flow (gpd/unit)[a]	Water Demand (gpd)[b]
Construction				
Family Residences Building (12-16 units, assume 16)	Residential	14,500	250 gpd/du	4,680
Administrative Building	Office	31,300	200 gpd/1,000 gsf	7,324
Link Building	Medical Office	19,020	300 gpd/1,000 gsf	6,676
Patient Pavilion (210 Beds)[c]	Hospital	125,403	500 gpd/bed	122,850
Central Utility Plant	Utility	3,780	0	0
Parking Garage	Parking	114,901	0	0
CHROI Gymnasium - Office	Office	6,900	200 gpd/1,000 gsf	1,615
CHROI Gymnasium - R&D[d]	R&D	8,450	300 gpd/1,000 gsf	2,966
Total New Construction and Water Demand		**324,254**		**146,111**
Demolition				
679 53rd Street	Office	2,106	200 gpd/1,000 gsf	493
675 53rd Street	Office	1,277	200 gpd/1,000 gsf	299
671 53rd Street	Office	1,030	200 gpd/1,000 gsf	241
5212 Dover Street (2,253 square feet)	Vacant	2,253	200 gpd/1,000 gsf	0
688 52nd Street	Office	1,472	200 gpd/1,000 gsf	344
682 52nd Street	Office	1,400	200 gpd/1,000 gsf	328
B/C Wing	Medical Office	33,510	300 gpd/1,000 gsf	11,762
Trailer (Facilities Design & Construction)	Office	480	200 gpd/1,000 gsf	112
Trailer (HemOnc)	Office	628	200 gpd/1,000 gsf	147
Trailer (Education/HIS)	Office	1,779	200 gpd/1,000 gsf	416
Bruce Lyon Memorial Research Center	R&D	20,000	300 gpd/1,000 gsf	7,020
Bruce Lyon's Addition/HemOnc Office	R&D	4,500	300 gpd/1,000 gsf	1,580
Total Demolition and Decrease in Water Demand		**70,435**		**22,742**
Phase 2 Net New Construction & Water Demand		**253,819**		**123,369**

Notes:

a. Sanitary Sewer Generation Rates, City of Oakland Sanitary Sewer Design Standards, 2008.

b. Water demand was calculated by multiplying square footage of use (or number or dwelling units) by average daily sewer rate by 117%, as was the methodology used in the Alta Bates/Summit Medical Center Draft EIR.

c. Patient Pavilion square footage above does not include helistop.

d. The 8,850 square feet of storage proposed in the CHROI Gymnasium is not included above.

TOTAL PROJECT Net New Construction & Water Demand	**342,367**	**151,501**

Children's Hospital Oakland Master Plan Water Demand Calculation, Revised April 1, 2014

Existing	Use	Square Footage	Average Daily Sewer Flow (gpd/unit)[a]	Water Demand (gpd)[b]	Wastewater Output (gpd)
North of 52nd					
Outpatient Center 1 Building (OPC1)- medical	Medical Office	115,559	300 gpd/1,000 gsf	40,561	34,668
5204 MLK Way	Office	1,041	200 gpd/1,000 gsf	244	208
715 53rd Street	Office	1,530	200 gpd/1,000 gsf	358	306
707 53rd Street	Residential	1,923	330 gpd/du	386	330
5225 Dover Street	Office	2,000	200 gpd/1,000 gsf	468	400
744 52nd Street-Sports Rehab Dept.	Office	1,600	200 gpd/1,000 gsf	374	320
5203 Dover Street	Office	1,477	200 gpd/1,000 gsf	346	295
679 53rd Street	Office	2,106	200 gpd/1,000 gsf	493	421
675 53rd Street	Office	1,277	200 gpd/1,000 gsf	299	255
671 53rd Street	Office	1,030	200 gpd/1,000 gsf	241	206
665 53rd Street	Office	2,800	200 gpd/1,000 gsf	655	560
5222 Dover Street-The Family House (16 units)	Residential	12,622	85 gpd/bed	1,360	1,156
5212 Dover Street	Vacant	2,253	n/a	0	0
688 52nd Street	Office	1,472	200 gpd/1,000 gsf	344	294
682 52nd Street	Office	1,400	200 gpd/1,000 gsf	328	280
670 53rd Street	Office	2,412	200 gpd/1,000 gsf	564	482
770 53rd Street	Office	13,795	200 gpd/1,000 gsf	3,228	2,759
			Subtotal	**50,249**	**42,942**
South of 52nd					
1982 Patient Tower (82 Tower)	Medical Office	105,371	300 gpd/1,000 gsf	36,985	31,611
Ford Diagnostic and Treatment Center (D&T), Cardiac Catheterization Lab	Medical Office	45,958	300 gpd/1,000 gsf	16,131	13,787
Western Addition	Hospital	7,715	500 gpd/bed	85,000	72,250
B/C Wing	Medical Office	33,510	300 gpd/1,000 gsf	11,762	10,053
A/B Wing	Medical Office	45,177	300 gpd/1,000 gsf	15,857	13,553
Cafeteria	Restaurant	7,779	300 gpd/1,000 gsf	2,730	2,334
Central Utility Plant	Utility	12,217	n/a	0	0
Bruce Lyon Memorial Research Center	Medical Office	12,570	300 gpd/1,000 gsf	4,412	3,771
Bruce Lyon Addition	Medical Office	4,500	300 gpd/1,000 gsf	1,580	1,350
Temp. Trailor 1 (Fac. Des. & Con.)	Office	480	200 gpd/1,000 gsf	112	96
Temp. Trailor 2 (Social Serv.)	Office	2,108	200 gpd/1,000 gsf	493	422
Temp. Trailor 3 (ED Admin.)	Office	1,772	200 gpd/1,000 gsf	415	354
Temp. Trailor 5 (CVC Center for Children)	Office	4,555	200 gpd/1,000 gsf	1,066	911
Temp. Trailor 7 (ED. HIS)	Office	1,779	200 gpd/1,000 gsf	416	356
Temp. Trailor 8 (Con. Mgmt. Off.)	Office	628	200 gpd/1,000 gsf	147	126
			Subtotal	**177,107**	**150,974**
Total Existing Water Demand and Wastewater Output		**452,416 sq/ft**		**227,356**	**193,916**

Phase 1	Use	Square Footage	Average Daily Sewer Flow (gpd/unit)[a]	Water Demand (gpd)[b]	Wastewater Output (gpd)
Construction					
Outpatient Center 2 Building (OPC2) - medical[c]	Medical Office	82,100	300 gpd/1,000 gsf	28,817	24,630
Outpatient Center 2 Building (OPC2) - parking	Parking	7,000	0	0	0
Central Utility Plant	Utility	1,100	0	0	0
	Subtotal	**90,200**		**28,817**	**24,630**
Demolition					
707 53rd Street	Residential	500	330 gpd/du	386	330
5204 MLK Jr. Way	Office	1,041	200 gpd/1,000 gsf	244	208
	Subtotal	**1,541**		**630**	**538**
Phase 1 Net New Construction Water/Wastewater		**88,659 sq/ft**		**28,187**	**24,092**

Notes:

a. Sanitary Sewer Generation Rates, City of Oakland Sanitary Sewer Design Standards, 2008.

b. Water demand was calculated by multiplying square footage of use (or number or dwelling units) by average daily sewer rate by 117%, as was the methodology used in the Alta Bates/Summit Medical Center Draft EIR.

c. OPC2 square footage above does not include 9,700 square foot mechanical penthouse and helistop

Phase 2	Use	Square Footage	Average Daily Sewer Flow (gpd/unit)[a]	Water Demand (gpd)[b]	Wastewater Output (gpd)
Construction					
Family Residences Building (12-16 units, assume 16)	Residential	14,500	250 gpd/du	4,680	4,000
Clinical Support Building	Office	31,300	200 gpd/1,000 gsf	7,324	6,260
Link Building	Medical Office	43,500	300 gpd/1,000 gsf	15,269	13,050
Patient Pavilion (210 Beds)[c]	Hospital	101,000	500 gpd/bed	122,850	105,000
Central Utility Plant	Utility	3,800	0	0	0
Parking Garage	Parking	114,900	0	0	0
Total New Construction and Water Demand		**309,000**		**150,123**	**128,310**
Demolition					
665 53rd Street	Office	2,800	200 gpd/1,000 gsf	655	560
679 53rd Street	Office	2,106	200 gpd/1,000 gsf	493	421
675 53rd Street	Office	1,277	200 gpd/1,000 gsf	299	255
671 53rd Street	Office	1,030	200 gpd/1,000 gsf	241	206
5212 Dover Street	Vacant	2,253	200 gpd/1,000 gsf	0	0
B/C Wing	Medical Office	33,510	300 gpd/1,000 gsf	11,762	10,053
Trailer 1 (Facilities Design & Construction)	Office	480	200 gpd/1,000 gsf	112	96
Trailer 3 (ED Administration)	Office	2,108	200 gpd/1,000 gsf	493	422
Trailer 8 (Con. Mgmt. Off.)	Office	628	200 gpd/1,000 gsf	147	126
Trailer 7 (Education/HIS)	Office	1,779	200 gpd/1,000 gsf	416	356
Bruce Lyon Memorial Research Center	R&D	12,570	300 gpd/1,000 gsf	4,412	3,771
Bruce Lyon Addition/HemOnc Office	R&D	4,500	300 gpd/1,000 gsf	1,580	1,350
Total Demolition and Decrease in Water Demand		**65,041**		**20,610**	**17,616**
Phase 2 Net New Construction Water/Wastewater		**243,959 sq/ft**		**129,512**	**110,694**

Notes:

a. Sanitary Sewer Generation Rates, City of Oakland Sanitary Sewer Design Standards, 2008.

b. Water demand was calculated by multiplying square footage of use (or number or dwelling units) by average daily sewer rate by 117%, as was the methodology used in the Alta Bates/Summit Medical Center Draft EIR.

c. Patient Pavilion square footage above does not include helistop.

TOTAL PROJECT Net New Construction & Water Demand	**332,618**	**157,700**	**134,786**

APPENDIX H3

Water Supply Assessment

EAST BAY
MUNICIPAL UTILITY DISTRICT

October 8, 2013

Heather Klein, Planner III
City of Oakland
Planning, Building and Neighborhood Preservation Department
Strategic Planning Division
250 Frank Ogawa Plaza, Suite 3315
Oakland, CA 94612

Re: Water Supply Assessment – Children's Hospital and Research Center Oakland Master Plan Project

Dear Ms. Klein:

This letter responds to the City of Oakland's (City) request of July 31, 2013, for water agency consultation concerning the Children's Hospital and Research Center Oakland Master Plan Project (Enclosure 1) located in Oakland, which is within the East Bay Municipal Utility District's (EBMUD) Ultimate Service Boundary. EBMUD appreciates the opportunity to provide this response.

Pursuant to Section 10910-10915 (SB-610) of the California Water Code, the project meets the threshold requirement for an assessment of water supply availability based on the amount of water this project would require, a proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.

Please note that this assessment addresses the issue of water supply only and is not a guarantee of service, and future water service is subject to rates and regulations in effect at the time.

Project Demand

The water demand for the Children's Hospital and Research Center Oakland Master Plan Project area is accounted for in EBMUD's water demand projections as published in EBMUD's 2010 Urban Water Management Plan (UWMP/Enclosure 2). 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. The proposed project site is the location of the existing Children's Hospital and Research Center Oakland (CHRCO) and Children's Hospital Oakland Research Institute (CHORI). Current use is approximately 70,000 gallons per day (gpd). The projected net increase in water demand for the project at build out is approximately 152,000 gpd which includes a decrease of approximately 25,000 gpd due to demolition of existing buildings.

EBMUD's demand projections indicate both densification and land use changes in a few existing land use classifications, including commercial and residential land use areas, thus increasing EBMUD's overall demand. EBMUD's 2010 UWMP projects water demands over time, accounting for estimated variations in demand usage less conservation and recycled supply sources as noted in Table 4-1, Water Demand Projections for Each Water Use Sector, of the 2010 UWMP. EBMUD's water demand projections are based on the 2040 Demand Study (Demand Study), which was completed in 2009. For planning purposes, the demands are estimated in five year increments, but it is recognized that actual incremental amounts may occur stepwise in shorter time increments. An increase in usage by one customer in a particular customer class does not require a strict gallon-for-gallon increase in conservation by other customers in that class as, in actuality, the amount of potable demand, conservation and recycled water use EBMUD-wide will vary somewhat. Future versions of the UWMP, which is updated every five years, will include an updated assessment of customer demand and water supply.

Project Area

The proposed Children's Hospital and Research Center Oakland Master Plan Project consists of the 11-acre CHRCO main campus and the 6.5-acre CHORI campus. The CHRCO campus is bounded by 53rd Street to the north, State Route 24 (SR-24) to the east, and Martin Luther King Jr. Way to the south and west, while the CHORI campus is located 0.4 miles north of CHRCO and is bounded by 58th Street to the north, Dover Street Park to the east, Aileen Street to the south, and Martin Luther King Jr. Way to the west. As described in the project's Notice of Preparation of a Draft Environmental Impact Report (EIR), the Children's Hospital and Research Center Oakland Master Plan Project will create new seismically compliant facilities. This will include renovating or demolishing existing structures while constructing new hospital facilities, office buildings, medical offices, residential units, parking structures, utility plants, and research and development facilities (i.e., demolishing approximately 79,000 square feet, constructing approximately 421,000 square feet, and renovating approximately 129,000 square feet, for a net increase of approximately 342,000 square feet).

EBMUD Water Demand Projections

Since the 1970s, water demand within EBMUD's service area has ranged from 200 to 220 million gallons per day (mgd) in non-drought years. The 2040 water demand forecast of 312 mgd for EBMUD's service area can be reduced to 230 mgd with the successful implementation of water recycling and conservation programs, as outlined in the 2010 UWMP. Although current demand is lower than estimated in the Demand Study, as a result of the recent multi-year drought and the downturn in the economy, the Demand Study still reflects a reasonable expectation for growth over the long term for demand in year 2040. The Alameda Point Project will not change EBMUD's 2040 demand projection.

EBMUD Water Supply and Water Rights

EBMUD has water rights permits and licenses that allow for delivery of up to a maximum of 325 mgd from the Mokelumne River, subject to the availability of Mokelumne River runoff and the senior water rights of other users. EBMUD's position in the hierarchy of Mokelumne River water users is determined by a variety of agreements between Mokelumne River water right holders, and the terms of the appropriative water rights permits and licenses, which have been issued by the State, pre-1914 rights, and riparian rights.

Conditions that could, depending on hydrology, restrict EBMUD's ability to receive its full entitlement include:

- Upstream water use by prior right holders.
- Downstream water use by riparian and senior appropriators and other downstream obligations, including protection of public trust resources.
- Variability in rainfall and runoff.

During prolonged droughts, the Mokelumne River supply cannot meet EBMUD's projected customer demands. To address this, EBMUD has completed construction of the Freeport Regional Water Facility and the Bayside Groundwater Facility, which are discussed below in the Supplemental Water Supply and Demand Management section of this assessment. EBMUD has obtained and continues to seek supplemental supplies.

EBMUD UWMP

The 2010 UWMP, adopted on June 28, 2011, by EBMUD's Board of Directors by Resolution No. 33832-11, is a long-range planning document used to assess current and projected water usage, water supply planning and conservation and recycling efforts. A summary of EBMUD's demand and supply projections, in 5-year increments for a 25-year planning horizon is provided in Table 4-3, EBMUD Demand and Supply Projections of the 2010 UWMP (Enclosure 3).

EBMUD's evaluation of water supply availability accounts for the diversions of both upstream and downstream water right holders and fishery releases on the Mokelumne River. Fishery releases are based on the requirements of a 1998 Joint Settlement Agreement (JSA) between EBMUD, United States (U.S.) Fish and Wildlife Service, and the California Department of Fish and Game. The JSA requires EBMUD to make minimum flow releases from its reservoirs to the lower Mokelumne River to protect and enhance the fishery resources and ecosystem of the river. As this water is released downriver, it is, therefore, not available for use by EBMUD's customers.

The available supply shown in the attached table (Enclosure 3) was derived from EBMUD's hydrologic model with the following assumptions:

- EBMUD Drought Planning Sequence is used for 1976, 1977 and 1978;
- Total system storage is depleted by the end of the third year of the drought;
- EBMUD will implement its Drought Management Program when necessary;
- The diversions by Amador and Calaveras Counties upstream of Pardee Reservoir will increase over time, eventually reaching the full extent of their senior rights;
- Releases are made to meet the requirements of senior downstream water right holders and fishery releases are made according to the JSA;
- Dry-year supply of Central Valley Project (CVP) water, through the Freeport Regional Water Facility, is available; and
- Bayside Groundwater Project, Phase 1, is available.

As discussed under the Drought Management Program section in Chapter 3 of the 2010 UWMP, EBMUD's system storage generally allows it to continue serving its customers during dry-year events. EBMUD imposes rationing based on the projected storage available at the end of September. By imposing rationing in the first dry year of potential drought periods, EBMUD attempts to minimize rationing in subsequent years if a drought persists while continuing to meet its current and subsequent-year fishery flow release requirements and obligations to downstream agencies. Table 3-2, Long-Term Drought Management Program Guidelines, in the 2010 UWMP summarizes the Drought Management Program guidelines for consumer water reduction goals based on projected system storage.

In Table 4-3, EBMUD Demand and Supply Projections (Enclosure 3), "Single Dry Water Year" (or Year 1 of "Multiple Dry Water Years") is determined to be a year that EBMUD would implement Drought Management Program elements at the "moderate" stage with the goal of achieving a reduction between 0 to 10 percent in customer demand. Year 2 of "Multiple Dry Years" is determined to be a year that EBMUD would implement Drought Management Program elements at the "severe" stage with the goal of achieving between 10 to 15 percent reduction in customer demand. Year 3 of "Multiple Dry Years" is a year in which EBMUD would implement Drought Management Program elements at the "critical" stage. Despite water savings from EBMUD's aggressive conservation and recycling programs and rationing of up to 15 percent, additional supplemental supplies beyond those provided through the Freeport Regional Water Facility and the Bayside Groundwater Facility will be needed during Years 2 and 3 of a three-year drought. Therefore, supplemental supplies are needed in a multiple-year drought periods while continuing to meet the requirements of senior downstream water right holders and the provisions of the 1998 JSA.

Supplemental Water Supply and Demand Management

The goals of meeting projected water needs and increased water reliability rely on supplemental supplies, improving reliability of existing water supply facilities, water conservation and recycled water programs.

By 2011, EBMUD completed construction of the Freeport Regional Water Facility and the Bayside Groundwater Facility to augment its water supply during drought periods. However, additional supplemental supplies beyond those provided through these facilities will still be needed, as noted above. Chapter 2 of the 2010 UWMP describes potential supplemental water supply projects that could be implemented to meet projected long-term water demands during multi-year drought periods.

The Freeport Regional Water Facility became operational in February 2011. EBMUD's ability to take delivery of water through the Freeport facility is based on its Long Term Renewal Contract (LTRC) with the U.S. Bureau of Reclamation. The LTRC provides for up to 133,000 acre-feet in a single dry-year, not to exceed a total of 165,000 acre-feet in three consecutive dry years. Under the LTRC, the CVP supply is available to EBMUD only in dry years when EBMUD's total stored water supply is forecast to be below 500 total acre feet on September 30 of each year.

Construction of the Bayside Groundwater Project, Phase 1, was completed in 2010. A permit from the Department of Public Health, which is pending, is required before the groundwater can be extracted and treated for municipal use. The project is designed to yield 2 mgd over a 6-month period, resulting in an average annual production capacity of 1 mgd per year.

Chapter 2 of the 2010 UWMP also lists other potential supplemental water projects, including northern California water transfers, Bayside Groundwater Project Expansion, Los Vaqueros Expansion and others that could be implemented as necessary to meet the projected long-term water supplemental need during multi-year drought periods. The 2010 UWMP identifies a broad mix of projects, with inherent scalability and the ability to adjust implementation schedules for a particular component, so that EBMUD will be able to continue to pursue the additional supplemental supplies that are projected to be necessary, while also minimizing the risks associated with future uncertainties such as project implementation challenges and global climate change. The EIR that EBMUD certified for the Water Supply Management Program 2040 examined the impacts of pursuing these supplemental supply projects at a program level. Separate project-level environmental documentation will be prepared, as appropriate, for specific components as they are developed in further detail and implemented in accordance with EBMUD's water supply needs.

In addition to pursuing supplemental water supply sources, EBMUD also maximizes resources through continuous improvements in the delivery and transmission of available water supplies, and investments in ensuring the safety of its existing water supply facilities. These programs, along with emergency interties and planned water recycling and conservation efforts, would ensure a reliable water supply to meet projected demands for current and future EBMUD customers within the current service area.

The Children's Hospital and Research Center Oakland Master Plan Project presents an opportunity to incorporate water conservation measures. Conditions of approval for the implementation of the Children's Hospital and Research Center Oakland Master Plan should require that the project comply with the California Model Water Efficient Landscape Ordinance (Division 2, Title 23, California Code of Regulations, Chapter 2.7, Sections 490 through 495). EBMUD staff would appreciate the opportunity to meet with the project sponsor to discuss water conservation programs and best management practices applicable to the integrated projects. A key objective of this discussion will be to explore timely opportunities to expand water conservation via early consideration of EBMUD's conservation programs and best management practices applicable to the project.

The project site is located more than a mile away from any existing or planned recycled water supply facilities and infrastructure within the East Bayshore Recycled Water Project. Although the proposed project is not a likely candidate for recycled water, EBMUD still requests that the project applicant maintain continued coordination and consultation with EBMUD during the project development and implementation to confirm the feasibility of providing recycled water service to the project site for appropriate non-potable uses.

The project sponsor should contact David J. Rehnstrom, Senior Civil Engineer, at (510) 287-1365 for further information.

Sincerely,

William R. Kirkpatrick
Manager of Water Distribution Planning Division

WRK:KSG:sb
sb13_195.doc

Enclosures: 1. Letter of Request for Water Supply Assessment dated July 31, 2013, w/o the NOP
2. EBMUD 2010 Urban Water Management Plan
3. EBMUD Demand and Supply Projections Table

cc: Board of Directors w/o Enclosure 2

APPENDIX H4

Request for Confirmation of Water Supply Assessment

Enclosure 1

CITY OF OAKLAND

DALZIEL BUILDING • 250 FRANK H. OGAWA PLAZA, SUITE 3315 • OAKLAND, CALIFORNIA 94612-2032

Department of Planning, Building and Neighborhood Preservation
Planning & Zoning Services Division

(510) 238-3941
FAX (510) 238-6538
TDD (510) 238-3254

July 31, 2013

Mr. William Kirkpatrick
East Bay Municipal Utility District
Manager, Water Distribution Planning Division
P.O. Box 24055, MS 701
Oakland, CA 94607

RE: Request for Confirmation of Water Supply Assessment for the proposed Children's Hospital and Research Center Oakland Master Plan Project

Dear Mr. Kirkpatrick:

Pursuant to Section 10910 of the Water Code, the City of Oakland is submitting this request to the East Bay Municipal Utility District (EBMUD) for a water supply assessment. The City is requesting EBMUD to determine whether the projected water demand associated with the proposed Children's Hospital and Research Center Oakland Master Plan Project (project) was included in the adopted Urban Water Management Plan and, if it was not included, to prepare a water supply assessment as outlined in Section 10910(c)(3) of the Water Code. The assessment is required in order to determine whether adequate water supply is available to meet the project water demand for the project. The project is currently in the planning stages. An Environmental Impact Report (EIR) is being prepared by the City of Oakland as lead agency, as indicated in the Notice of Preparation dated July 26, 2013 which you should already have received (and is attached for your reference).

Existing Children's Hospital and Research Center Oakland (CHRCO) facilities include the 11-acre CHRCO main campus and the 6.5-acre Children's Hospital Oakland Research Institute (CHORI) campus. The CHRCO main campus is located at 747 52nd Street and consists of 699,846 square feet of use. The CHORI campus is located at 5700 Martin Luther King Jr. Way, 0.4 mile north of the CHRCO campus and consists of 126,015 square feet of use. The proposed project would be constructed in two phases over the next several years. Ultimately, approximately 79,037 square feet of use would be demolished, 406,054 square feet would be constructed, and 128,745 square feet would be renovated, for a net increase of 342,364 square feet of use. (Approximately 15,350 square feet of the area to be renovated is the vacant CHROI Gymnasium, all other area to be renovated is currently occupied.)

The City respectfully requests that EBMUD prepare a water supply assessment for the proposed project as described in the Notice of Preparation. To assist EBMUD with the assessment, projected water demand calculations for the proposed project are also attached to this letter. The

City acknowledges that this request for an assessment is a required part of the environmental documentation for the project. We appreciate your prompt response to this request.

Please contact me if you need additional information. I can be reached at (510) 238-3659 or by email at HKlein@oaklandnet.com.

Sincerely,

Heather Klein
Planner III
Strategic Planning Division

cc: Doug Nelson, Children's Hospital & Research Center Oakland
Shannon Allen, LSA Associates

Attachments
Notice of Preparation
Water Demand Calculations

CITY OF OAKLAND

250 FRANK H. OGAWA PLAZA, SUITE 3315 • OAKLAND, CALIFORNIA 94612-2032

Department of Planning and Building
Planning & Zoning Division

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NOTICE OF PREPARATION (NOP) OF A DRAFT ENVIRONMENTAL IMPACT REPORT (EIR) CHILDREN'S HOSPITAL AND RESEARCH CENTER OAKLAND MASTER PLAN PROJECT

The Department of Planning and Building, Planning and Zoning Division, is preparing a Draft Environmental Impact Report (EIR) for the Children's Hospital and Research Center Oakland (CHRCO) Master Plan Project (project) as described below, and is requesting comments on the scope and content of the EIR. The Draft EIR will address the potential environmental effects for each of the environmental topics outlined in the California Environmental Quality Act (CEQA). The City has **not** prepared an Initial Study.

The City of Oakland is the Lead Agency for the project and is the public agency with the greatest responsibility for considering approval of the project and/or carrying it out. This notice is being sent to Responsible Agencies and other interested parties. Responsible Agencies are those public agencies, besides the City of Oakland, that also have a role in considering approval and/or carrying out the project. When the Draft EIR is published, it will be sent to all Responsible Agencies and to others who respond to this NOP or who otherwise indicate that they would like to receive a copy.

Responses to this NOP and any questions or comments should be directed in writing to: Heather Klein, Planner III, City of Oakland Department of Planning and Building, 250 Frank H. Ogawa Plaza, Suite 3315, Oakland, CA 94612; 510-238-3659 (phone); (510) 238-6538 (fax); or e-mail hklein@oaklandnet.com. Comments on the NOP must be received at the above mailing or e-mail address **by 5:00 p.m. on August 28, 2013**. Please reference **Case File Number ER12-0013** in all correspondence. In addition, comments may be provided at the EIR Scoping Meetings to be held before the City Landmarks Preservation Advisory Board, the Bicycle and Pedestrian Advisory Committee and City Planning Commission. Comments should focus on potential impacts on the physical environment, ways in which potential adverse effects might be minimized, and alternatives to the project in light of the EIR's purpose to provide useful and accurate information about such factors.

EIR SCOPING MEETINGS:

At **4:00 p.m. on August 12th, 2013,** members of the **City of Oakland Landmarks Preservation Advisory Board (LPAB)** and the public are invited on a special tour of the exterior of the CHRCO A/B and B/C Wings. **The tour will meet at the main hospital entrance at 747 52nd Street.** The **LPAB** will also conduct a public scoping meeting focusing on the Cultural Resource aspects of the Draft EIR for the project on **August 12, 2013 at 6:00 p.m. in Sgnt. Mark Dunakin Hearing Room 1, City Hall, 1 Frank H. Ogawa Plaza.**

The **City of Oakland Bicycle and Pedestrian Advisory Committee** will conduct a public scoping meeting focusing on bicycle and pedestrian aspects of the Draft EIR for the project on **August 15, 2013 at 5:30 p.m. in Hearing Room 4, City Hall, 1 Frank H. Ogawa Plaza.**

The **City of Oakland Planning Commission** will conduct a public scoping meeting on the Draft EIR for the project on **August 28, 2013 at 6:00 p.m. in Sgnt. Mark Dunakin Hearing Room 1, City Hall, 1 Frank H. Ogawa Plaza.**

PROJECT TITLE: Children's Hospital and Research Center Oakland Master Plan Project

PROJECT LOCATION: The project site includes two locations. The CHRCO main campus is located at 747 52nd Street and is generally bounded by 53rd 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 CHRCO campus consists of the following parcels, by Assessor's Parcel Numbers (APNs): 14-1205-19-1, 14-1204-14-5, 14-1206-26-1, 14-1206-14-2, 14-1206-27, 14-1206-28, 14-1206-3, 14-1215-25, 14-1215-26, 14-1215-27-2, 14-1215-21-2, 14-1215-20, 14-1215-19, 14-1215-23-1, 14-1215-28-3, 14-1214-020-00, 14-1207-036, 14-1206-4, 14-1215-24. The CHRCO Annex Parking Lot APN is 013-1163-005-4. The Children's Hospital Oakland Research Institute (CHORI) campus is located at 5700 Martin Luther King Jr. Way and is generally bounded by 58th Street to the north, Dover Street Park to the east, Aileen Street to the south, and Martin Luther King Jr. Way and the elevated BART tracks to the west (see attached Figure 1). The CHORI campus consists of APN 15-1281-02-8.

PROJECT SPONSOR: Children's Hospital and Research Center Oakland

EXISTING CONDITIONS: The approximately 11-acre CHRCO campus is located at 747 52nd Street in the northern portion of Oakland. The campus is an existing, approximately 699,846 square-foot medical campus with 190 beds, 170 of which are located at the main campus and 20 of which are located off-site at Alta Bates Summit Medical Center. Buildings and structures located in the northern area (north of 52nd Street) of the CHRCO campus include the Outpatient Center, parking garage structure, 14 CHRCO-owned properties (11 of which are residential buildings) and 2 private residences. Buildings and structures located in the southern area (south of 52nd Street) include the main hospital facilities, comprised of the 1982 Patient Tower (1982 Tower), Ford Diagnostic and Treatment Center (D&T Building), Cardiac Catheterization Lab (Cath Lab), B/C Wing, A/B Wing (Baby Hospital), Cafeteria, the Western Addition, and the Central Utility Plant. Other buildings and structures in the southern area include the helistop structure, Bruce Lyon Memorial Research Center, Hematology Oncology (HemOnc) Administrative Building, and five temporary trailers that house office and administrative uses. The majority of the existing CHRCO campus is designated Institutional per the City's Land Use and Transportation Element of the City's General Plan; the northeastern corner of the CHRCO campus is designated Mixed Housing Type Residential. The majority of the campus is zoned Medical Center (S-1) per the City's zoning map; the northeastern corner of the CHRCO campus is zoned Mixed Housing Type Residential (RM-2). The CHRCO campus does not include any Cortese list sites; however, the CHRCO annex employee parking lot west of Martin Luther King Jr. Way is on the Cortese list.

The approximately 6.5-acre CHORI campus is located at 5700 Martin Luther King Jr. Way, 0.4 mile north of the CHRCO campus. The CHORI campus includes three buildings which total approximately 126,015 square feet: the former University High School main building; the former University High gymnasium; and the Hedco Building, north of and adjacent to the other two buildings. The CHORI campus currently functions as a medical research facility and contains laboratory facilities and associated equipment, as well as surface parking lots. The gymnasium is currently vacant. The property that includes the CHORI building is designated Neighborhood Center Mixed Use per the City's Land Use and Transportation Element of the City's General Plan and is zoned Neighborhood Commercial (CN-3). The property that includes the CHORI gymnasium is designated Mixed Housing Type Residential in the City's General Plan and is zoned Mixed Housing Type Residential (RM-2).

PROJECT PURPOSE: The main purpose of the proposed project is to create new seismically compliant acute care facilities that meet the seismic safety requirements of 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.

PROJECT DESCRIPTION: The proposed project would be constructed in two phases; the sequencing for Phase 1 is provided in Figure 2 and the sequencing for Phase 2 is provided in Figure 3, attached. Table 1 provides a summary of the existing building area, hospital beds, parking spaces and employees as well as changes that would result from implementation of Phase 1 and Phase 2.

Phase 1 would include the demolition of four residential buildings (currently owned by the hospital) south of 53rd Street to accommodate the construction of the six-story Outpatient Center Building 2 (OPC2) with a helistop on the roof, and a new entrance to the existing parking garage from Dover Street (see Figure 2). Phase 1 would also include construction of internal hospital renovations in the 1982 Tower, the D&T Building, and the Cath Lab building, as well as construction of a central utility plant near the southwest boundary of the campus to serve utilities to the renovated areas. Phase 1 would include the loss of thirty on-site hospital beds (as a result of interior renovations). The net loss in parking spaces during Phase 1 is 137; 23 new spaces would be constructed at the new Emergency Parking area on the ground floor of the new OPC2 and 160 spaces would be lost when CHRCO's lease expires on a lot at 51st Street and Clarke Street. As part of Phase 1, approximately 8,602 square feet of use would be demolished, 97,150 square feet would be constructed, and 86,403 square feet would be renovated. Total Phase 1 project construction is anticipated to take 42 months.

Phase 2 would include the demolition of the following structures: six residential buildings south of 53rd Street (currently owned by the hospital), the B/C Wing, Bruce Lyon Memorial Research Center, HemOnc Administrative Building, helistop structure and trailers. Phase 2 would include construction of an Administrative Building, Family Residence Building (containing 12-16 units), Link Building Acute Care Patient Pavilion with an additional helistop on the roof, expansion to the Central Utility Plant, and a 334-stall parking structure (see Figure 3). New buildings 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. Dover Street between 52nd and 53rd Streets would be realigned and either remain a through-street or be changed to a cul-de-sac. The intersection of Dover Street and 52nd Street would be realigned to create a 4-legged intersection. The PG&E duct bank that extends east-west across the campus would be rerouted around the southern tip of the campus. Phase 2 includes the acquisition and improvement of a portion of the SR-24 right-of-way currently owned by the California Department of Transportation (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 an increase of 295 parking spaces on the CHRCO campus.

Phase 2 also includes the renovation of the 24,150 square-foot gymnasium (currently vacant) on the CHORI campus to accommodate research and development, office and storage uses. The gymnasium is on the National Register of Historic Places as a contributor to the CHORI (University High School) campus which was listed in 1992. Renovations to the gymnasium would be undertaken in conformance with the *Secretary of the Interior's Standards for Rehabilitation*. As part of Phase 2, approximately 70,435 square feet of use would be demolished, approximately 308,904 square feet would be constructed, and approximately 42,342 square feet would be renovated. Phase 2 project construction is expected to take approximately 36 months.

The project sponsor is proposing to request a General Plan Amendment for the northeastern corner of the CHRCO site and the CHORI site to redesignate those areas to Institutional, and a rezoning of the CHRCO site and the CHORI site to S-1. A Planned Unit Development (PUD) permit would also be requested, in addition to other land use entitlements. Instead of rezoning to S-1 and applying for a PUD permit and these other entitlements, the project sponsor may request creation of a special zoning district for the project.

PROBABLE ENVIRONMENTAL EFFECTS: It is anticipated that the proposed project may have environmental impacts on land use and planning; aesthetics and shadow; cultural and historical resources; transportation and circulation; air quality; greenhouse gas emissions; noise; geology, seismicity and soils; hydrology and water quality; hazards and hazardous materials; and utilities. It is anticipated that the project would have no impact or less-than-significant environmental impacts on agricultural and forestry resources;

biological resources; mineral resources; population and housing; public services; and recreation. Nevertheless, these environmental factors will be analyzed in the Draft EIR.

The Draft EIR will also examine a reasonable range of alternatives to the project, including the CEQA-mandated No Project Alternative and other potential alternatives that may be capable of reducing or avoiding potential environmental effects.

Scott Miller

July 26, 2013
Case File Number 12-0013

Scott Miller
Zoning Manager and Environmental Review Officer

Attachments: Table 1: Proposed Development By Phase and Total Buildout
Figure 1: Project Location Map
Figure 2: Phase 1 Proposed Site Plan
Figure 3: Phase 2 Proposed Site Plan

Table 1: Proposed Development by Phase and Total Buildout

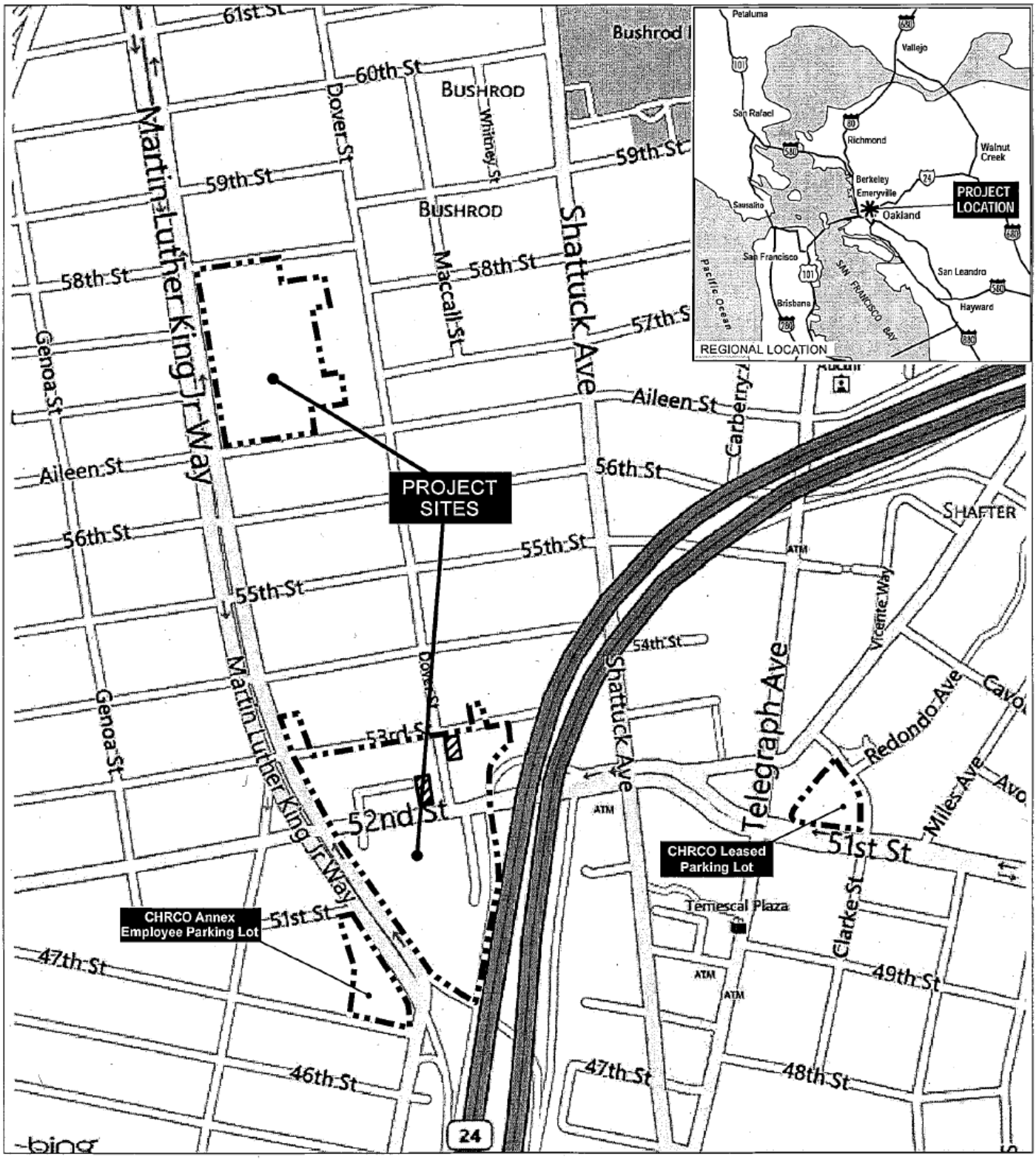
	CHRCO Campus	CHORI Campus	Total	Change[a]
Existing				
Site Acres	11	6.5	17.5	
Building Area (sq. ft.)	699,846	126,015	825,861	
Parking Spaces	1,246	183	1,429	
On-Site Hospital Beds (#)	170	0	170	
Off-Site Hospital Beds (#)	20	0	20	
Patients[b] (daily)	852	0	852	
Visitors (daily)	604	0	604	
Total Employees (FTE[c]) (daily)	2,086	246	2,332	
Phase 1- Completed in 42months				
Site Acres	11	6.5	17.5	0
Demolished Building Area	(8,602)	0		(8,602)
New Building Area	97,150	0		97,150
Net Building Area	788,394	126,015	914,409	88,548
Removed Parking Spaces	(160)	0		(160)
New Parking Spaces	23	0		23
Net Parking Spaces	1,109	183	1,292	(137)
On-Site Hospital Beds (#)	140	0		(30)
Off-Site Hospital Beds (#)	40	0		20
Patients[b] (daily)	853	0		1
Visitors (daily)	604	0		0
Total Employees (FTE[c]) (daily)	2,111	246		25
Phase 2–Anticipated to begin in 2020; completed in 36 months				
Site Acres	14.4	6.5	20.9	2.4
Demolished Building Area	(70,435)	0		(70,435)
New Building Area	308,904	0[d]		308,904
Net Building Area	1,026,863	126,015	1,152,878	238,469
Removed Parking Spaces	(48)	0		(48)
New Parking Spaces	343	0		343
Net Parking Spaces	1,404	183	1,587	295
On-Site Hospital Beds (#)	210	0		70
Off-site Hospital Beds (#)	0			(40)
Patients[b] (daily)	923	0		70
Visitors (daily)	761	0		157
Total Employees (FTE[c]) (daily)	2,291	271		205
Total Buildout				
Site Acres	14.4	6.5	20.9	2.4
Total Building Area	1,026,863	126,015	1,152,878	327,017
Parking Spaces	1,404	183	1,587	158
On-Site Hospital Beds (#)	210	0	210	40
Off-Site Hospital Beds (#)	0	0	0	(20)
Patients[b] (daily)	923	0	923	71
Visitors (daily)	761	0	761	157
Total Employees (FTE[b])	2,291	271	2,562	205

[a] The change column under Phase 1 represents change from existing conditions to implementation of Phase 1. The change column under Phase 2 represents change from Phase 1 to implementation of Phase 2. The change column under Total Buildout represents change from existing conditions to Total Buildout. The EIR will analyze the change associated with Phase 1 and the change at total buildout.

[b] Patients include census, emergency department and outpatients

[c] FTE = full time equivalents

[d] While not the construction of new square footage, Phase 2 will include the redevelopment and activation of the 24,150 square-foot CHORI Gymnasium.



LSA

FIGURE 1

Project Sites

Private Residence, Parcel Not Owned by CHRCO

0 300 600
FEET

CHRCO Master Plan NOP

Project Vicinity and Regional Location

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

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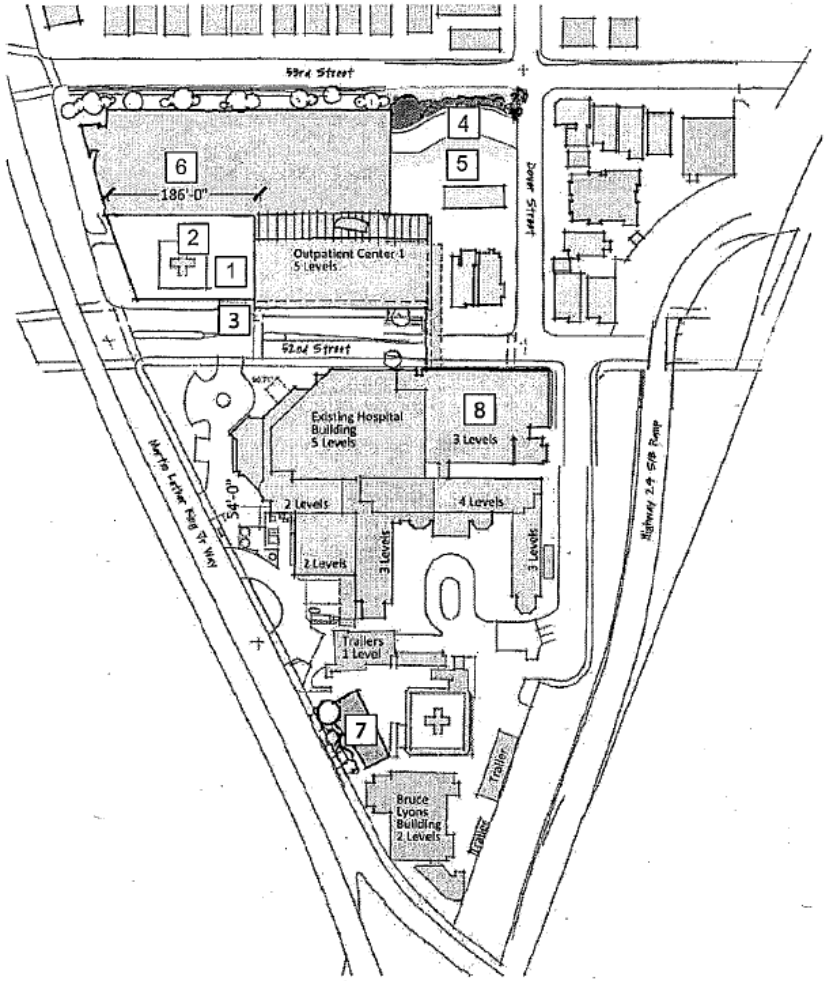

MASTER PLAN PHASE 1 SEQUENCING

SEQUENCE 1A:

Bulk Oxygen Tank Replacement - completed under HAZUS Project.

Engage in the EIR process and initiate dialogue with the community and neighbors.

Remodel the Second Floor MPOE.

SEQUENCE 1B:

Remove 4 hospital-owned structures between 52nd and 53rd Streets to prepare site for construction.

Build a 6-story; 92,700 square foot Outpatient Building 2 (OPC2) with a helistop on the roof. Emergency Room parking at grade on Level 1. Many non-acute care services will be relocated from the hospital to this building.

Provide new entrance driveway to the existing Parking Garage from Dover Street.

SEQUENCE 1C:

Remove temporary trailer.

Build a 4,450 sf Central Utility Plant to support Inpatient Remodels and capable of future expansion in a later phase.

SB 90/Interior Hospital Reonvations: The space vacated by non-acute care services from the existing Hospital to the new OPC2 will allow for interior renovations of the inpatient floors of the existing hospital. The Morgue, CSPD, Pharmacy, EVS, PBX, Main Entry, PICU, NICU, Surgery/PACU, Inpatient Rehab, Admit Holding, Medical Surgical Overflow, and Child Life department will be renovated and will undergo technological upgrades.

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NOT TO SCALE

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PHASE 1 SCOPE OF WORK

1. NEW 6 STORY OUTPATIENT CENTER (OPC 2)
2. NEW HELISTOP AT ROOF LEVEL OF OPC2
3. EMERGENCY DEPARTMENT PARKING ENTRANCE & EXIT
4. NEW PERMANENT ENTRANCE/EXIT DRIVE TO EXISTING PARKING GARAGE
5. NEW SERVICE YARD & DELIVERY PARKING
6. BICYCLE PARKING LOCATION
7. NEW "MINI" CENTRAL PLANT
8. INPATIENT HOSPITAL INTERIOR RENOVATIONS

FIGURE 2

CHRCO Master Plan NOP
Phase 1
Proposed Site Plan

SOURCE: HDR/TAYLOR, 2013. [G0.02]

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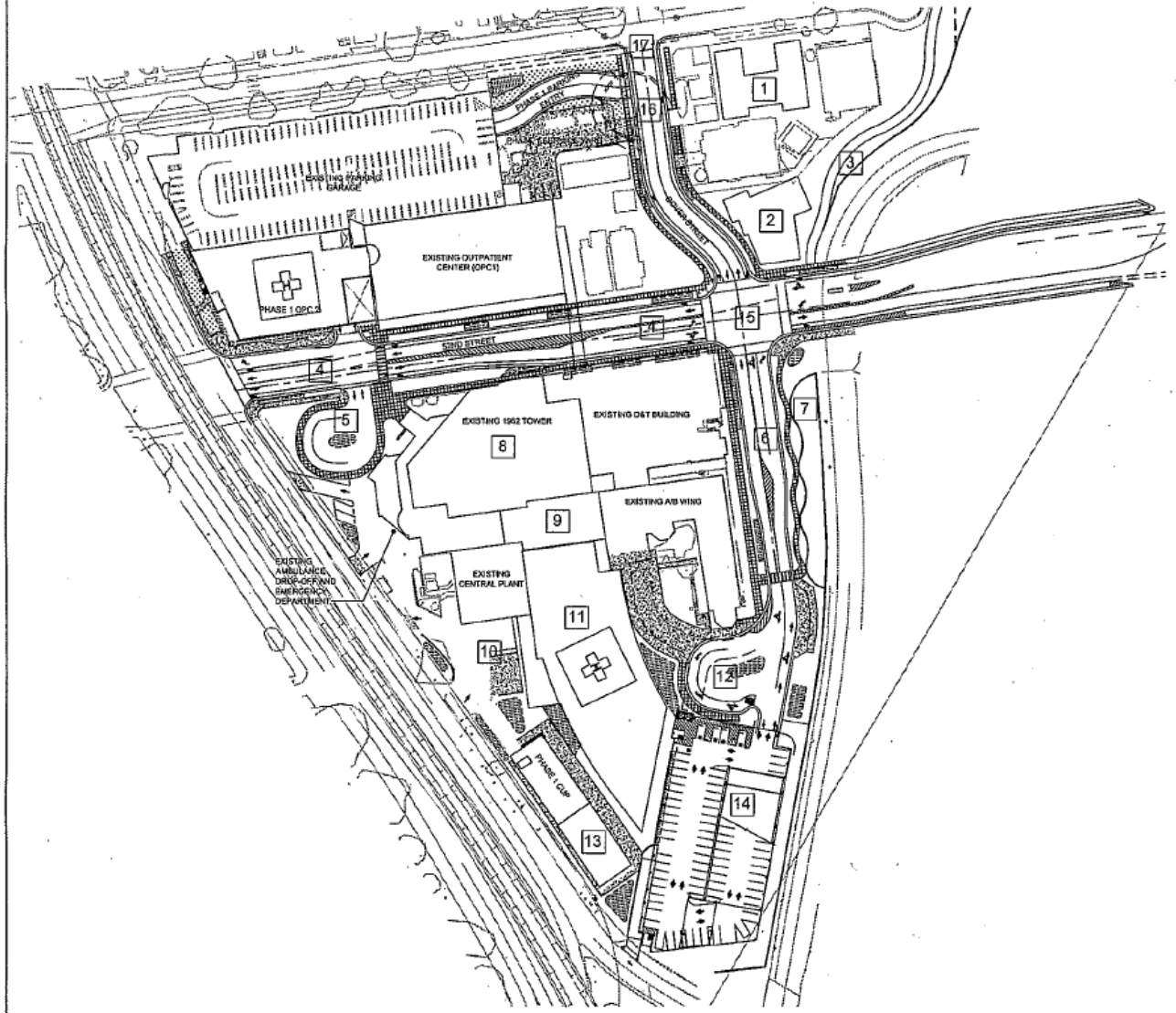

MASTER PLAN PHASE 2 SEQUENCING

SEQUENCE 2A:

SB90/Interior Hospital Renovations will continue in Phase 2 to include the Emergency Department, Radiology/Imaging, and the new IMRI.

SEQUENCE 2B:

Acquire CalTrans Right of Way land adjacent to the western edge of SR 24. Land is for incorporation of future campus building elements.

Remove 6 hospital-owned structures between 52nd and 53rd Streets, 3 east of Dover Street to prepare site for construction.

Build a two-story 14,500 sf Family Residence Building over parking on the south side of 53rd Street, east of Dover.

Build a five-story, 31,300 sf Administration Building at the Northeast corner of Dover and 52nd Street. An optional cul-de-sac at Dover and 53rd discourages hospital parking in the neighborhood to the north.

Reconfigure Dover Street between 52nd Street and 53rd Streets to align with Dover's southern terminus. Dover becomes the primary entry to the South Campus, and helps to organize the campus into distinct Outpatient and Inpatient zones (south and north of 52nd Street).

SEQUENCE 2C:

The existing BC Wing will be demolished. All departments housed within this building will be relocated to the existing hospital, OPC2, or other hospital owned properties renovated in Phase 1.

Build a three-story, 19,020 sf Link Building, connecting the services of the existing hospital's east and west areas.

SEQUENCE 2D:

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

SEQUENCE 2E:

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, 114,901 sf, 334-stall parking structure. This structure will provide parking to support the inpatient population of the campus.

Build a 3,870 sf Central Utility Plant expansion to the Phase 1 Central Utility Plant. This expansion will provide service to the new Patient Pavilion.

Site improvements south of 52nd Street along with the existing drop-off area.

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

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NOT TO SCALE

PHASE 2 SCOPE OF WORK

1. NEW FAMILY RESIDENCE BLDG. 2 STORIES
2. NEW ADMINISTRATION BUILDING 5 STORIES
3. NEW PEDESTRIAN GREEN BELT TO 53RD STREET
4. SITE IMPROVEMENTS TO 52ND STREET STREET WIDENED IMPROVED TRAFFIC FLOW
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 IF ROW ACQUIRED
8. INPATIENT RENOVATIONS: LEVEL 1 - EMERGENCY DEPARTMENT LEVEL 2 - RADIOLOGY DEPARTMENT LEVEL 3 - IMRI
9. NEW "LINK" BUILDING 3 STORIES
10. NEW LOADING DOCK
11. NEW PATIENT PAVILION 5 STORIES HELISTOP ON ROOF
12. NEW MAIN HOSPITAL ENTRANCE DRIVE & DROP-OFF
13. NEW EXPANDED CENTRAL UTILITY PLANT
14. NEW PARKING GARAGE 4 STORIES 334 PARKING STALLS
15. NEW REALIGNED DOVER STREET
16. NEW DOVER STREET OPTIONAL CUL-DE-SAC
17. NEW DOVER STREET OPTIONAL THROUGH-STREET

SOURCE: HDR/TAYLOR, 2013 [B1.10]

I:\CHR1201 Childrens Hospital\figures\NOP\Fig_3.ai (7/23/13)

FIGURE 3

CHRCO Master Plan EIR

Phase 2

Proposed Site Plan

Children's Hospital Oakland Master Plan Water Demand Calculation

Phase 1	Use	Square Footage	Average Daily Sewer Flow (gpd/unit)[a]	Water Demand (gpd)[b]
Construction				
Outpatient Center 2 Building (OPC2) - medical[c]	Medical Office	85,700	300 gpd/1,000 gsf	30,081
Outpatient Center 2 Building (OPC2) - parking	Parking	7,000	0	0
Central Utility Plant	Utility	4,450	0	0
Demolition				
715 53rd Street	Office	1,530	200 gpd/1,000 gsf	358
707 53rd Street	Residential	1,923	330 gpd/du	386
5225 Dover Street	Office	2,000	200 gpd/1,000 gsf	468
5204 MLK Jr. Way	Office	1,041	200 gpd/1,000 gsf	244
Trailer (Ed Administration)	Office	2,108	200 gpd/1,000 gsf	493
Phase 1 Net New Construction & Water Demand		**88,548**		**28,132**

Notes:

a. Sanitary Sewer Generation Rates, City of Oakland Sanitary Sewer Design Standards, 2008.

b. Water demand was calculated by multiplying square footage of use (or number or dwelling units) by average daily sewer rate by 117%, as was the methodology used in the Alta Bates/Summit Medical Center Draft EIR.

c. OPC2 square footage above does not include 9,700 square foot mechanical penthouse and helistop

Phase 2	Use	Square Footage	Average Daily Sewer Flow (gpd/unit)[a]	Water Demand (gpd)[b]
Construction				
Family Residences Building (12-16 units, assume 16)	Residential	14,500	250 gpd/du	4,680
Administrative Building	Office	31,300	200 gpd/1,000 gsf	7,324
Link Building	Medical Office	19,020	300 gpd/1,000 gsf	6,676
Patient Pavilion (210 Beds)[c]	Hospital	125,403	500 gpd/bed	122,850
Central Utility Plant	Utility	3,780	0	0
Parking Garage	Parking	114,901	0	0
CHROI Gymnasium - Office	Office	6,900	200 gpd/1,000 gsf	1,615
CHROI Gymnasium - R&D[d]	R&D	8,450	300 gpd/1,000 gsf	2,966
Total New Construction and Water Demand		**324,254**		**146,111**
Demolition				
679 53rd Street	Office	2,106	200 gpd/1,000 gsf	493
675 53rd Street	Office	1,277	200 gpd/1,000 gsf	299
671 53rd Street	Office	1,030	200 gpd/1,000 gsf	241
5212 Dover Street (2,253 square feet)	Vacant	2,253	200 gpd/1,000 gsf	0
688 52nd Street	Office	1,472	200 gpd/1,000 gsf	344
682 52nd Street	Office	1,400	200 gpd/1,000 gsf	328
B/C Wing	Medical Office	33,510	300 gpd/1,000 gsf	11,762
Trailer (Facilities Design & Construction)	Office	480	200 gpd/1,000 gsf	112
Trailer (HemOnc)	Office	628	200 gpd/1,000 gsf	147
Trailer (Education/HIS)	Office	1,779	200 gpd/1,000 gsf	416
Bruce Lyon Memorial Research Center	R&D	20,000	300 gpd/1,000 gsf	7,020
Bruce Lyon's Addition/HemOnc Office	R&D	4,500	300 gpd/1,000 gsf	1,580
Total Demolition and Decrease in Water Demand		**70,435**		**22,742**
Phase 2 Net New Construction & Water Demand		**253,819**		**123,369**

Notes:

a. Sanitary Sewer Generation Rates, City of Oakland Sanitary Sewer Design Standards, 2008.

b. Water demand was calculated by multiplying square footage of use (or number or dwelling units) by average daily sewer rate by 117%, as was the methodology used in the Alta Bates/Summit Medical Center Draft EIR.

c. Patient Pavilion square footage above does not include helistop.

d. The 8,850 square feet of storage proposed in the CHROI Gymnasium is not included above.

TOTAL PROJECT Net New Construction & Water Demand	**342,367**	**151,501**

EAST BAY MUNICIPAL UTILITY DISTRICT DEMAND AND SUPPLY PROJECTIONS
(Reference: Table 4-3, UWMP 2010 – EBMUD)

	2010	2015	2020	2025	2030	2035[1]	2040
PROJECTED DEMAND (MGD)							
CUSTOMER DEMAND [2]	251	266	280	291	304	308	312
ADJUSTED FOR CUMULATIVE CONSERVATION [3]	(26)	(32)	(43)	(49)	(56)	(59)	(62)
ADJUSTED FOR RECYCLED WATER [4]	(9)	(11)	(16)	(18)	(19)	(20)	(20)
PLANNING LEVEL OF DEMAND	216	223	221	224	229	229	230
PROJECTED AVAILABLE SUPPLY AND NEED FOR SUPPLEMENTAL SUPPLY (MGD)[5]							
NORMAL YEAR	>216	>223	>221	>224	>229	>229	>230
SUPPLEMENTAL SUPPLY NEED	0	0	0	0	0	0	0
SINGLE DRY YEAR (MULTIPLE DRY YEARS – YEAR 1)							
AVAILABLE SUPPLY	211	217	215	218	223	222	222
CUSTOMER RATIONING [6]	2%	3%	3%	3%	3%	3%	4%
SUPPLEMENTAL SUPPLY NEED [7]	5	6	6	7	7	8	8
MULTIPLE DRY YEARS – YEAR 2							
AVAILABLE SUPPLY	183	189	188	190	194	194	195
CUSTOMER RATIONING [6]	15%	15%	15%	15%	15%	15%	15%
SUPPLEMENTAL SUPPLY NEED [7]	21	21	21	21	22	22	22
MULTIPLE DRY YEARS – YEAR 3							
AVAILABLE SUPPLY	183	189	188	190	183	164	144
CUSTOMER RATIONING [6]	15%	15%	15%	15%	15%	15%	15%
SUPPLEMENTAL SUPPLY NEED [7]	21	21	21	21	33	53	73
THREE-YEAR DROUGHT							
TOTAL SUPPLEMENTAL SUPPLY NEED (TAF)[7]	53	54	54	55	69	93	115

[1] Projected demand for 2035 is interpolated.

[2] Customer demand values are based on the demand projections from the "2040 Demand Study," Feb 2009. These projected water demands are based on land use in EBMUD's ultimate service area and is unadjusted for conservation and non-potable water. The values are also unadjusted for the current suppressed demand due to the 2007-2010 rationing period and the economic downturn.

[3] Existing conservation saving from the "1994 Water Conservation Master Plan" and planned conservation program savings based on the "2011 Water Conservation Master Plan".

[4] Existing recycled water achieved per the "1993 Water Supply Management Program" and planned recycled water program savings as outlined in Chapter 5 of the UWMP 2010.

[5] Projected available supply data includes dry year supply deliveries from the Freeport Regional Water Project (FRWP) and Bayside Groundwater Project, Phase 1. Delivery rules for the FRWP follow the rules as developed in the Freeport EIR, 2003.

[6] Rationing reduction goals are determined according to projected system storage levels in the Long-Term Drought Management Program guidelines per Table 3-2 in Chapter 3 of the UWMP 2010.

[7] The supplemental supply need is based on EBMUDSIM modeling studies. It is the amount of water needed based on EBMUD's updated demand projections, the provisions of the 1998 Joint Settlement Agreement and the rationing policy stated in Table 3-2, Chapter 3 of the UWMP 2010. The actual need will be dependent on antecedent conditions and the severity of actual drought conditions. Supplemental supply stored during the initial year of the drought could be later released, diminishing supplemental supply needs. During the drought that continued into 2010, the combined effects of water rationing and an economic downturn suppressed demand below the planning level of demand to maintain a sufficient water supply and deferred the need for supplemental water. However, if the drought had continued into its second year, most likely supplemental supplies would have been obtained from the Freeport Regional Water Facility as anticipated in the Interim Drought Management Program Guidelines discussed in Appendix G-2.

Children's Hospital Oakland Master Plan Water Demand Calculation

Existing	Use	Square Footage	Average Daily Sewer Flow (gpd/unit)[a]	Water Demand (gpd)[b]	Wastewater Output (gpd)
North of 52nd					
Outpatient Center 1 Building (OPC1)- medical	Medical Office	115,669	300 gpd/1,000 gsf	40,600	34,701
5204 MLK Way	Office	1,041	200 gpd/1,000 gsf	244	208
715 53rd Street	Office	1,530	200 gpd/1,000 gsf	358	306
707 53rd Street	Residential	1,923	330 gpd/du	386	330
5225 Dover Street	Office	2,000	200 gpd/1,000 gsf	468	400
744 52nd Street-Sports Rehab Dept.	Office	1,600	200 gpd/1,000 gsf	374	320
5203 Dover Street	Office	1,477	200 gpd/1,000 gsf	346	295
679 53rd Street	Office	2,106	200 gpd/1,000 gsf	493	421
675 53rd Street	Office	1,277	200 gpd/1,000 gsf	299	255
671 53rd Street	Office	1,030	200 gpd/1,000 gsf	241	206
665 53rd Street	Office	2,800	200 gpd/1,000 gsf	655	560
5222 Dover Street-The Family House (16 units)	Residential	12,622	85 gpd/bed	1,360	1,156
5212 Dover Street	Vacant	2,253	n/a	0	0
688 52nd Street	Office	1,472	200 gpd/1,000 gsf	344	294
682 52nd Street	Office	1,400	200 gpd/1,000 gsf	328	280
670 53rd Street	Office	2,412	200 gpd/1,000 gsf	564	482
770 53rd Street	Office	13,795	200 gpd/1,000 gsf	3,228	2,759
			Subtotal	**50,288**	**42,975**
South of 52nd					
1982 Patient Tower (82 Tower)	Medical Office	105,371	300 gpd/1,000 gsf	36,985	31,611
Ford Diagnostic, Treatment Center, Cardiac Catheterization Lab (D&T)	Medical Office	45,958	300 gpd/1,000 gsf	16,131	13,787
Western Addition	Hospital	7,715	500 gpd/bed	85,000	72,250
B/C Wing	Medical Office	33,510	300 gpd/1,000 gsf	11,762	10,053
A/B Wing	Medical Office	45,177	300 gpd/1,000 gsf	15,857	13,553
Cafeteria	Restaurant	7,779	300 gpd/1,000 gsf	2,730	2,334
Central Utility Plant	Utility	12,217	n/a	0	0
Bruce Lyon Memorial Research Center	Medical Office	12,570	300 gpd/1,000 gsf	4,412	3,771
Bruce Lyon Addition	Medical Office	4,500	300 gpd/1,000 gsf	1,580	1,350
Temp. Trailor 1 (Fac. Des. & Con.)	Office	480	200 gpd/1,000 gsf	112	96
Temp. Trailor 2 (Social Serv.)	Office	2,108	200 gpd/1,000 gsf	493	422
Temp. Trailor 3 (ED Admin.)	Office	1,772	200 gpd/1,000 gsf	415	354
Temp. Trailor 5 (CVC Center for Children)	Office	4,555	200 gpd/1,000 gsf	1,066	911
Temp. Trailor 7 (ED. HIS)	Office	1,779	200 gpd/1,000 gsf	416	356
Temp. Trailor 8 (Con. Mgmt. Off.)	Office	628	200 gpd/1,000 gsf	147	126
			Subtotal	**177,107**	**150,974**
Total Existing Water Demand		**452,526**	**sq/ft**	**227,395**	**193,949**

Phase 1	Use	Square Footage	Average Daily Sewer Flow (gpd/unit)[a]	Water Demand (gpd)[b]	Wastewater Output (gpd)
Construction					
Outpatient Center 2 Building (OPC2) - medical[c]	Medical Office	82,097	300 gpd/1,000 gsf	28,816	24,629
Outpatient Center 2 Building (OPC2) - parking	Parking	7,000	0	0	0
Central Utility Plant	Utility	1,025	0	0	0
	Subtotal	**90,122**		**28,816**	**24,629**
Demolition					
707 53rd Street	Residential	500	330 gpd/du	386	330
5204 MLK Jr. Way	Office	1,041	200 gpd/1,000 gsf	244	208
	Subtotal	**1,541**		**630**	**538**
Phase 1 Net New Construction & Water Demand		**88,581**	**sq/ft**	**28,186**	**24,091**

Notes:

a. Sanitary Sewer Generation Rates, City of Oakland Sanitary Sewer Design Standards, 2008.

b. Water demand was calculated by multiplying square footage of use (or number or dwelling units) by average daily sewer rate by 117%, as was the methodology used in the Alta Bates/Summit Medical Center Draft EIR.

c. OPC2 square footage above does not include 9,700 square foot mechanical penthouse and helistop

Phase 2	Use	Square Footage	Average Daily Sewer Flow (gpd/unit)[a]	Water Demand (gpd)[b]	Wastewater Output (gpd)
Construction					
Family Residences Building (12-16 units, assume 16)	Residential	14,500	250 gpd/du	4,680	4,000
Clinical Support Building	Office	31,300	200 gpd/1,000 gsf	7,324	6,260
Link Building	Medical Office	43,500	300 gpd/1,000 gsf	15,269	13,050
Patient Pavilion (210 Beds)[c]	Hospital	100,923	500 gpd/bed	122,850	105,000
Central Utility Plant	Utility	3,780	0	0	0
Parking Garage	Parking	114,901	0	0	0
Total New Construction and Water Demand		**308,904**		**150,123**	**128,310**
Demolition					
665 53rd Street	Office	2,800	200 gpd/1,000 gsf	655	560
679 53rd Street	Office	2,106	200 gpd/1,000 gsf	493	421
675 53rd Street	Office	1,277	200 gpd/1,000 gsf	299	255
671 53rd Street	Office	1,030	200 gpd/1,000 gsf	241	206
5212 Dover Street	Vacant	2,253	200 gpd/1,000 gsf	0	0
B/C Wing	Medical Office	33,510	300 gpd/1,000 gsf	11,762	10,053
Trailer 1 (Facilities Design & Construction)	Office	480	200 gpd/1,000 gsf	112	96
Trailer 3 (ED Administration)	Office	2,108	200 gpd/1,000 gsf	493	422
Trailer 8 (Con. Mgmt. Off.)	Office	628	200 gpd/1,000 gsf	147	126
Trailer 7 (Education/HIS)	Office	1,779	200 gpd/1,000 gsf	416	356
Bruce Lyon Memorial Research Center	R&D	12,570	300 gpd/1,000 gsf	4,412	3,771
Bruce Lyon's Addition/HemOnc Office	R&D	4,500	300 gpd/1,000 gsf	1,580	1,350
Total Demolition and Decrease in Water Demand		**65,041**		**20,610**	**17,616**
Phase 2 Net New Construction & Water Demand		**243,863**	**sq/ft**	**129,512**	**110,694**

Notes:

a. Sanitary Sewer Generation Rates, City of Oakland Sanitary Sewer Design Standards, 2008.

b. Water demand was calculated by multiplying square footage of use (or number or dwelling units) by average daily sewer rate by 117%, as was the methodology used in the Alta Bates/Summit Medical Center Draft EIR.

c. Patient Pavilion square footage above does not include helistop.

TOTAL PROJECT Net New Construction & Water Demand	**332,444**	**157,699**	**134,785**

APPENDIX I

ARBORIST REPORTS

APPENDIX I1: ***Tree Inventory Report***

APPENDIX I2: ***Southern Magnolia Tree Report***

APPENDIX I3: ***Magnolia Tree #82 Transplant Feasibility Analysis***

APPENDIX I1

Tree Inventory Report

Tree Inventory Report

Children's Hospital
Oakland, CA

Prepared for:
CLEO Construction Management
747 52nd Street
Oakland, CA 94609

Prepared by:
HortScience, Inc.
325 Ray St.
Pleasanton, CA 94566

May 2014

HORT SCIENCE

Tree Inventory Report

Children's Hospital
Oakland CA

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Attachments

Introduction and Overview

CLEO Construction Management is overseeing future new construction and remodeling of existing buildings at Children's Hospital in Oakland, CA. The plan is still in the design phase and the final determination of tree impacts has not been made. HortScience, Inc. was asked to prepare a **Tree Inventory Report** for the site to meet the EIR/CEQA requirements for the City of Oakland

This report provides the following information:

1. An evaluation of the health and structural condition of the trees within and immediately adjacent to the proposed project area based on a visual inspection from the ground.

Assessment Methods

Trees were assessed on January 30, 2014. The assessment includes all trees within proposed construction areas and within 30 feet of the project development that meet the following requirements: Trees measuring 9" and greater in diameter, excluding Monterey pine (*Pinus radiata*) and *Eucalyptus* species; all coast live oaks (*Quercus agrifolia*) measuring 4" and greater; and all City street trees regardless of size. The assessment procedure consists of the following steps:

1. Identifying the tree as to species;
2. Tagging each tree with a numerically coded metal tag and recording its location on a map;
3. Measuring the trunk diameter at a point 54" above grade;
4. Evaluating the health and structural condition using a scale of 1 – 5:
   - ***5*** - A healthy, vigorous tree, reasonably free of signs and symptoms of disease, with good structure and form typical of the species.
   - ***4*** - Tree with slight decline in vigor, small amount of twig dieback, minor structural defects that could be corrected.
   - ***3*** - Tree with moderate vigor, moderate twig and small branch dieback, thinning of crown, poor leaf color, moderate structural defects that might be mitigated with regular care.
   - ***2*** - Tree in decline, epicormic growth, extensive dieback of medium to large branches, significant structural defects that cannot be abated.
   - ***1*** - Tree in severe decline, dieback of scaffold branches and/or trunk; most of foliage from epicormics; extensive structural defects that cannot be abated.
5. Rating the suitability for preservation as "high", "moderate" or "low". Suitability for preservation considers the health, age and structural condition of the tree species, and its potential to remain an asset to the site.

   High: Trees with good health and structural stability that have the potential for longevity at the site.

   Moderate: Trees with somewhat declining health and/or structural defects than can be abated with treatment. The tree will require more intense management and monitoring, and may have shorter life span than those in 'high' category.

   Low: Trees in poor health or with significant structural defects that cannot be mitigated. Tree is expected to continue to decline, regardless of treatment. The species or individual tree may have characteristics that are undesirable for landscapes, and generally are unsuited for use areas.

Description of Trees

One hundred fifty-one (151) trees, representing 31 species, were evaluated (**Table 1**). Trees located on Children's Hospital (66 trees) and City property (33 trees) are tagged with numbers 1 through 99; and 52 trees located on CalTrans property, located between the Hospital and State Highway 24, are tagged with numbers 201 through 252.
The City of Oakland defines all single-stem trees with a diameter of 9 inches or greater and coast live oaks with a trunk diameter of 4 inches or greater as *Protected*, excluding Monterey pine (*Pinus radiata*) and *Eucalyptus* species. All trees evaluated on Hospital and Caltrans property qualify as *Protected* under the City of Oakland Tree Preservation Ordinance 12.36. Eighteen (18) of the 33 street trees measure smaller than 9"; however, City-owned trees are subject to the tree removal permit process. Therefore all street trees were evlauated regardless of size.

Table 1. Condition ratings and frequency of occurrence of trees Children's Hospital, Oakland CA

Common name	Scientific name	Poor (1-2)	Fair (3)	Good (4-5)	No. of trees Total
Bailey acacia	*Acacia baileyana*	4	4	-	8
Blackwood acacia	*Acacia melanoxylon*	3	6	2	11
Fern pine	*Afrocarpus falcatus*	-	-	2	2
Norfolk island pine	*Araucaria heterophylla*	-	-	1	1
Strawberry tree	*Arbutus unedo*	-	1	-	1
Camphor	*Cinnamomum camphora*	-	3	-	3
Hawthorn	*Crataegus laevigata*	-	1	-	1
Fig	*Ficus carica*	-	3	-	3
Raywood ash	*Fraxinus oxycarpa* 'Raywood'	-	-	1	1
Evergreen ash	*Fraxinus uhdei*	-	3	8	11
Silk oak	*Grevillea robusta*	-	-	1	1
English holly	*Ilex aquifolium*	-	-	1	1
Hollywood juniper	*Juniperus chinensis* 'Torulosa'	-	-	1	1
Chinese lantern	*Koelreuteria paniculata*	-	1	3	4
Brisbane box	*Lophostemon confertus*	-	-	1	1
Southern magnolia	*Magnolia grandiflora*	-	7	6	13
Chinese magnolia	*Magnolia x soulangeana*	-	-	1	1
Flaxleaf paperbark	*Melaleuca linarifolia*	-	3	7	10
Myoporum	*Myoporum laetum*	1	-	-	1
Olive	*Olea europaea*	-	1	-	1
Victorian box	*Pittosporum undulatum*	-	1	3	4
London plane	*Platanus acerifolia*	1	4	2	7
Carolina cherry	*Prunus caroliniana*	-	2	1	3
Purple leaf plum	*Prunus cerasifera*	-	2	1	3
Plum	*Prunus domestica*	-	1	-	1
Cherry	*Prunus x yedoensis*	-	1	-	1
Callery pear	*Pyrus calleryana*	-	2	-	2
Evergreen pear	*Pyrus kawakamii*	-	2	-	2
Coast live oak	*Quercus agrifolia*	-	12	18	30
Idaho locust	*Robinia x ambigua* 'Idahoensis'	-	1	-	1
Coast redwood	*Sequoia sempervirens*	-	2	19	21
Total		**9**	**63**	**79**	**151**
		6%	42%	52%	100%

Trunk diameters of the trees evaluated on CalTrans property range from 4 to 24 inches with an average trunk diameter of 10 inches. The remaining trees, located on Hospital or

City property, range from 2 to 78 inches in diameter with an average trunk diameter of 14 inches. Descriptions of each tree are found in the ***Tree Assessment Form*** and approximate locations are plotted on the ***Tree Assessment Map*** (see Attachments).

Coast live oak, with 30 trees or 20% of the population, is the most frequently occurring species. Coast live oaks are in fair (12 trees) to good (18 trees) condition, and their trunk sizes range from 4 inches to 22 inches in diameter. In general, trees in fair condition have thin and/or asymmetrical crowns, and structural deficiencies such as bowed trunks or codominant trunks with narrow attachments. Trees in good condition have dense crowns and good form and few structural issues. Overall, trees are performing well on the hillside with little to no care.

Coast live oaks are located within CalTrans property, many growing on a steep hillside and crowded by a variety of trees and shrubs, including eight (8) *Protected* Bailey acacia (*Acacia baileyana*), 11 *Protected* blackwood acacia (*Acacia melanoxylon*), cotoneaster (*Cotoneaster sp.*), fennel (*Foeniculum vulgare*), English ivy (*Hedera helix*), Chinese juniper (*Juniperus chinensis*), myoporum (*Myoporum laetum*), and Fraser's photinia (*Photinia fraseri*). Most trees in this area have trunks that are smaller than 9 inches.

Coast redwood, with 21 trees and 14% of the population, is the second most common species. Coast redwoods are located in three general areas on Hospital property: on the north side of the parking structure along 53rd St.; in the rear yard of the Children's Hospital Family House; and on the west side of the main hospital grounds along Martin Luther King Jr. Way. These are all semi-mature to mature in development. Trunks range from 10 inches to 36 inches in diameter. Two trees are in fair condition: tree #22 has a thin crown, and #94 has multiple trunks attached at the base and dry, brown needles throughout the crown. The remaining trees are in good condition with dense, green crowns and good form (Photo 1). None are in poor condition.

Photo 1: Coast redwoods #97-99 (l-r), growing near the corner of MLK Way and 52nd St., are in good condition.

Southern magnolia is the third most common species, with 13 trees or 9% of the population. All but one tree (#82) are street trees growing along 53rd St. Street trees are in fair to good condition, and they are either young or stunted, with trunk diameters from 3 to 11 inches. Overall, the trees have good form and structure, but many suffer from mild drought stress, resulting in slightly thin crowns and twig dieback. Many trees in fair condition exhibit yellowing of their leaves, or chlorosis, a condition in which leaves produce insufficient chlorophyll typically caused by nutrient deficiencies and/or drought stress.

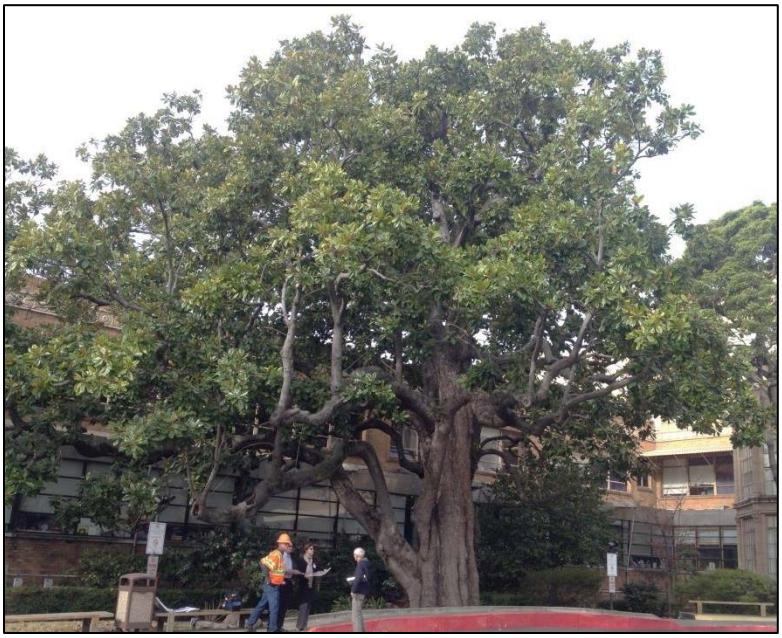


Photo 2: Southern magnolia #82, located in the Hospital's interior courtyard, is the largest tree evaluated and is in good condition.

Southern magnolia #82 is the largest tree evaluated. It is mature in development, with a trunk diameter of 78 inches. Many large lateral limbs have been cabled. I noted six cables throughout the canopy, the majority of which support limbs on the south half of the canopy. The tree is in good condition despite its size and age. The canopy is dense with dark green leaves, and shoot growth appears normal. A portion of the canopy extends over the building that is located approximately 25 feet west of the base of the tree. This tree is unique in its size and age, and in its condition given these two factors.

Flaxleaf paperbark represented 7% of the population with 11 trees each. These are grouped in planters on the south and west side of the parking structure. Most are in good condition, with three in fair condition (#8, 10, and 15). All trees have multiple or codominant trunks and significant surface roots. Trees in good condition have good form while those in fair condition have fair form and significant trunk leans (Photo 3).

Seven (7) London plane trees are growing on City right-of way along 53rd street. They are young to semi-mature in development with trunk diameters from 2 inches to 13 inches. Most are in fair and good condition, with one (#64) in poor condition.

The remaining species are represented by four (4) or fewer trees, and include Victorian box, Chinese lantern, purple leaf plum, Carolina cherry, and several other species.

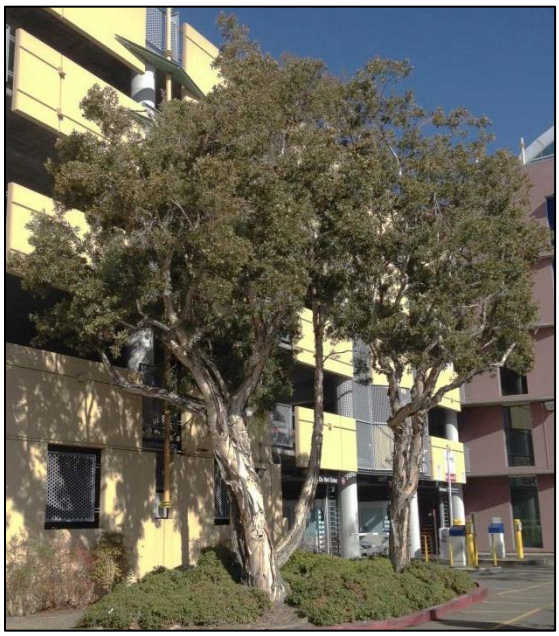


Photo 3: Flaxleaf paperbark #7 (r) and 9 (l) are in good condition with good form and structure.

Suitability for Preservation

Before evaluating the impacts that will occur during development, it is important to consider the quality of the tree resource itself, and the potential for individual trees to function well over an extended length of time. Trees that are preserved on development sites must be carefully selected to provide greater assurance they survive development impacts, adapt to a new environment, and perform well in the landscape.

Our goal is to identify trees that have the potential for long-term health, structural stability and longevity. Evaluation of suitability for preservation considers several factors:

- **Tree health**
  Healthy, vigorous trees are better able to tolerate impacts such as root injury, demolition of existing structures, changes in soil grade and moisture, and soil compaction than are non-vigorous trees.

- **Structural integrity**
  Trees with significant amounts of wood decay and other structural defects that cannot be corrected are likely to fail. Such trees should not be preserved in areas where damage to people or property is likely. Trees with decay or poor branch attachments are not good candidates for preservation.

- **Species response**
  There is a wide variation in the response of individual species to construction impacts and changes in the environment. In general, coast redwood and London plane are relatively tolerant of construction impacts and site changes while purple leaf plums are less tolerant. Response to impacts by southern magnolia ranges from poor to good and depends on severity of root pruning and quality of after-care.

- **Tree age and longevity**
  Old trees, while having significant emotional and aesthetic appeal, have limited physiological capacity to adjust to an altered environment. Young trees are better able to generate new tissue and respond to change.

- **Invasiveness**
  Species that spread across a site and displace desired vegetation are not always appropriate for retention. This is particularly true when indigenous species are displaced. The California Invasive Plant Inventory Database (http://www.cal-ipc.org/paf/) lists species identified as having being invasive. Oakland is part of the Central West Floristic Province. Blackwood acacia has a *Limited* rating of invasiveness, and English ivy has a *High* rating. No other invasive species were evaluated at the Children's Hospital site.

Each tree is rated for suitability for preservation based upon its age, health, structural condition and ability to safely coexist within a development environment. Table 2 (following page) provides a summary of suitability ratings. Suitability ratings for individual trees are provided in the ***Tree Assessment Forms*** (see attachments).

We consider trees with high suitability for preservation to be the best candidates for preservation. We do not recommend retention of trees with low suitability for preservation in areas where people or property will be present. Retention of trees with moderate suitability for preservation depends upon the intensity of proposed site changes.

Table 2. Tree suitability for preservation
Children's Hospital, Oakland CA

High These are trees with good health and structural stability that have the potential for longevity at the site. Forty-nine (49) trees are highly suitable for preservation.

Tree No.	Species	Diameter (in.)
9	Flaxleaf paperbark	15
11	Flaxleaf paperbark	14
12	Flaxleaf paperbark	20
13	Flaxleaf paperbark	15
14	Flaxleaf paperbark	11
18	Southern magnolia*	7
21	Coast redwood	16
23	Coast redwood	17
27	Southern magnolia*	4
28	Southern magnolia*	6
29	Coast redwood	18
30	Coast redwood	14
31	Coast redwood	15
32	Southern magnolia*	9
36	Coast redwood	21
38	Evergreen ash	17
42	Evergreen ash	22
53	Coast redwood	27
54	Coast redwood	23
55	Coast redwood	21
56	Coast redwood	23
57	Coast redwood	24
58	Coast redwood	22
59	Coast redwood	28
66	London plane*	11
67	Brisbane box*	15
89	Coast redwood	23
90	Coast redwood	27
91	Evergreen ash*	34
96	Blackwood acacia*	31
97	Coast redwood	28
98	Coast redwood	36
99	Coast redwood	35
201	Coast live oak	5,2
202	Coast live oak	6
203	Coast live oak	4
207	Coast live oak*	6
208	Coast live oak	8,8,7,7,7,4
209	Coast live oak	9
210	Coast live oak	5,4
211	Coast live oak	10,9,6,6
220	Coast live oak	13,10,7
225	Coast live oak	18
231	Coast live oak	22
234	Coast live oak	10
237	Coast live oak	11,9,5
243	Coast live oak	7,5
245	Coast live oak	8
251	Norfolk island pine	24

*street tree

(Continued on following page)

Table 2. Tree suitability for preservation, continued
Children's Hospital, Oakland CA

Moderate Trees in this category have fair health and/or structural defects that may be abated with treatment. These trees require more intense management and monitoring, and may have shorter life-spans than those in the "high" category. Seventy-nine (79) trees are of moderate suitability for preservation.

Tree No.	Species	Diameter (in.)
1	Goldenrain tree	11
2	Goldenrain tree	11
3	Goldenrain tree	11
4	Goldenrain tree	14
5	Fig	11
6	Fig	10
7	Flaxleaf paperbark	16
8	Flaxleaf paperbark	10,10
10	Flaxleaf paperbark	12
15	Flaxleaf paperbark	15
16	Flaxleaf paperbark	12
17	London plane*	2
20	Camphor	23
22	Coast redwood	10
25	Southern magnolia*	4,3
26	Southern magnolia*	5
33	Southern magnolia*	11
34	Southern magnolia*	5
35	Southern magnolia*	5
37	Southern magnolia*	4
39	Evergreen ash	14
40	Evergreen ash	14
41	Evergreen ash	14
43	Camphor*	29
45	Hollywood juniper	19
46	Carolina cherry*	17,12
47	Callery pear*	13
48	Callery pear*	11
49	Purple leaf plum*	10
50	Blackwood acacia*	15,10
51	Blackwood acacia	24
52	Fig	13,8
60	Olive	28
61	London plane*	7
62	London plane*	13
63	London plane*	9
65	London plane*	9
69	Fern pine	10
70	Evergreen pear*	8
71	Fern pine	9
72	Purple leaf plum*	4
73	Hawthorn*	6
74	Holly	10
75	Carolina cherry	16
76	Victorian box	30
77	Cherry	11,8
78	Victorian box	37
79	Chinese magnolia	8,7,6
80	Silk oak	12,11,9
81	Victorian box	23
82	Southern magnolia	78
83	Strawberry tree	16
84	Victorian box	12,10
85	Coast redwood	30
86	Evergreen ash	19,16
87	Evergreen ash	12
88	Evergreen ash	16
92	Raywood ash	8
93	Evergreen ash	26
94	Coast redwood	27,16,15,13
204	Bailey acacia	10,10,7,6
205	Bailey acacia	9,5,5,5
212	Coast live oak	10
213	Coast live oak	4
217	Blackwood acacia	10
219	Coast live oak	8
221	Coast live oak	8
222	Coast live oak	13
223	Coast live oak	13
224	Coast live oak	18,8
227	Bailey acacia	12,10,9
233	Carolina cherry	9
235	Coast live oak	7
238	Coast live oak	6,4,2
242	Coast live oak	5,4
244	Coast live oak	9,7,5,5
247	Coast live oak	11
248	Purple leaf plum	16,12
252	Plum	10,8,5,5,3

*street tree

(Continued on following page)

Table 2. Tree suitability for preservation, continued
Children's Hospital, Oakland CA

Low Trees in this category are in poor health or have significant defects in structure that cannot be abated with treatment. These trees can be expected to decline regardless of management. The species or individual tree may possess either characteristics that are undesirable in landscape settings or be unsuited for use areas. Five (5) trees have low suitability for preservation, all of which are purple-leaf plums.

Tree No.	Species	Diameter (in.)
19	Southern magnolia*	3
24	Southern magnolia*	4
44	Camphor*	16
64	London plane*	3
68	Evergreen pear*	7
95	Idaho locust*	6
206	Bailey acacia	10,8,7
214	Blackwood acacia	10
215	Blackwood acacia	10
216	Blackwood acacia	13
218	Blackwood acacia	13
226	Coast live oak	5
228	Bailey acacia	9
229	Myoporum	9,8,7
230	Coast live oak	4
232	Bailey acacia	13
236	Blackwood acacia	10
239	Bailey acacia	12,10
240	Bailey acacia	12
241	Blackwood acacia	10
246	Coast live oak	12,8
249	Blackwood acacia	10,9
250	Evergreen ash	14,5

*street tree

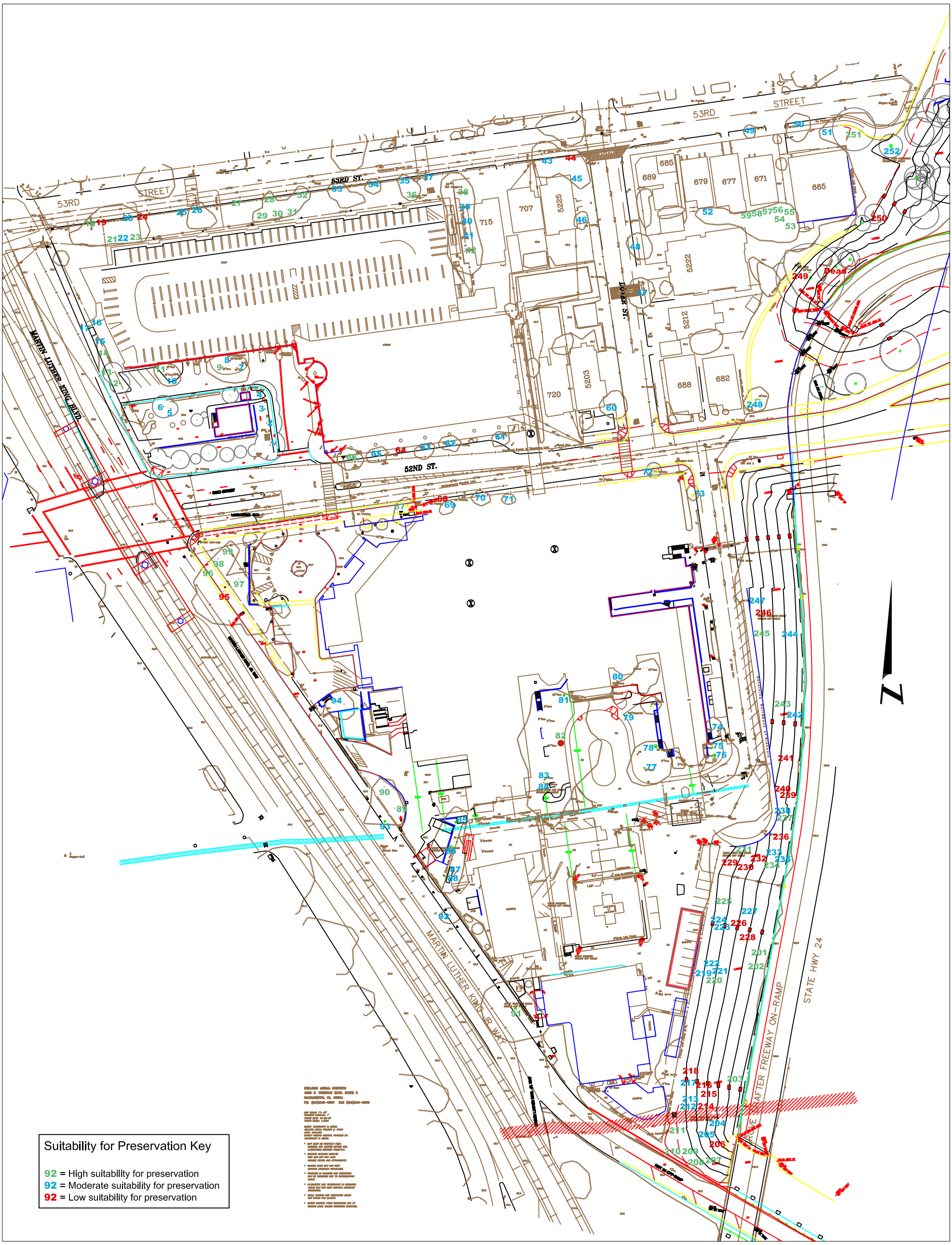
Once plans have been developed and reviewed by the Consulting Arborist, appropriate recommendations for tree preservation and removal can be provided.

If you have any questions regarding my observations, please contact me.

HortScience, Inc.

Deanne Ecklund
Consulting Arborist

Attached: ***Tree Assessment Form***
Tree Assessment Map



Notes:
Base map provided by:
Kellogg Aerial Surveys
Sacramento, CA

Numbered tree locations
are approximate.

Trees smaller than 9" that are NOT oaks or street trees are not included in this assessment (per City of Oakland's tree ordinance).

HORT SCIENCE
325 Ray Street
Pleasanton, CA 94566
Phone 925.484.0211
Fax 925.484.0596
www.hortscience.com

Tree Assessment Map

Oakland Children's Hospital
Oakland, CA

Prepared for:
CLEO
Oakland, CA

January 2014

No Scale

APPENDIX I2

Southern Magnolia Tree Report

THE DAVEY TREE EXPERT CO.

1055 Commercial Court
San Jose, CA 95112
(408) 453-3389
(408) 453-2940 - Fax
CA License #694001

October 25, 2013

Cleo Construction Management
34 Calle Castillo
San Clemente, CA 92673
Attn: Jeff Fyffe

Re: One Southern magnolia tree located at the Oakland Children's Hospital in Oakland, California

Dear Mr. Fyffe,

At your request, I visited the Oakland Children's Hospital on October 11th of this year to inspect and perform a Level 1 Tree Health Assessment of one Southern magnolia (*Magnolia grandiflora*) tree. The inspection was done from the ground and the tree was not climbed. No diagnostic tools or procedures were used or done during the evaluation. Based upon my visual assessment it is my opinion that a resistograph core drilling analysis was not needed. This letter serves as a summary of my inspection. Five photographs (Figures 1-5) are included with this letter and serve as visual aids in the discussion of the tree. The building to the left of the tree (Figure 1) is oriented north-south for the purposes of this letter.

The magnolia tree was planted in 1860. It is located directly adjacent to a driveway (Figure 1). The trunk measures 74 inches in diameter at approximately 16 inches above ground and just below the primary crotch of the tree. The tree is approximately 62 feet tall with a foliar spread of approximately 82 feet north-south and approximately 72 feet measured west-east. The canopy is out of balance to the south and to the west. I have included two photographs (Figure 4-5) which show a 97 year old magnolia tree that is in very good health. This tree, although approximately 60 years younger, can serve as an example of what a magnolia tree in very good health could look like.

The magnolia tree at Oakland Children's Hospital appears to be at natural grade. The soil was recently irrigated judging by the amount of moisture that was on the soil surface. The root crown appears to be sound and solid. It can be assumed that up to 50 percent of the root zone of the tree is located under the sidewalk and pavement.

The primary crotch is approximately five feet off the ground. There is a 27.5 inch diameter scaffold branch that grows towards the south and it is supported with a cable. There is a 'pinched' scaffold branch growing towards the east that is supported with a cable. There is a 30 inch diameter scaffold branch that grows towards the northwest that is supported with a cable. There is a scaffold branch that originates approximately 15 feet above ground line that is supported with a cable.

The tree was topped in the past. But I don't know when it was topped. The west and north sides of the canopy show dieback of twigs and much yellower foliage than what I would consider to be average. The south and east sides do not show twig dieback. There is inconsistent water sprout growth on the scaffold branches. The top center of the crown shows pruning cuts of up to six inches in diameter. There appears to be little water sprout growth in the region of these cuts. I took random samples of twig growth and found that growth in years 2009-2012 were consistent in length but the growth in 2013

was approximately 40 percent less. I did not see any evidence of insects or disease. All of the older pruning wounds that are located in the lower portion of the canopy are callusing over.

The color of the foliage, the evidence of twig dieback, and the sporadic nature of water sprout growth throughout the canopy are indications to me that the tree is in fair health.

Respectfully submitted,

Gil Mitchell, RCA #317
ISA Certified Arborist WE-0134A

Enclosure: Figure 1-5

Cc by email: Kevin Peters
Western Operations Manager
ISA Board Certified Master Arborist NE-0625b
The Davey Tree Expert Company

Figure 1. The Southern magnolia tree at the Oakland Children's Hospital. The tree was planted in 1860. The trunk measures 74 inches in diameter at approximately 16 inches above grade and just below the primary crotch of the tree. The tree is approximately 62 feet tall with a foliar spread of approximately 82 feet measured north-south. The foliar spread is approximately 72 feet measured west-east. The canopy of the tree is out of balance to the west and south.

Figure 2. The foliage is remarkably lighter in color for what I would expect for this time of year. It is my opinion that the tree is in fair health.

Figure 3. The tree was topped in the past and there are pruning wounds throughout the upper canopy that appear to be up to six inches in diameter.

Figure 4. This Southern magnolia is located at the Farrington House in San Jose. The tree was planted circa 1920. Measurements were not taken but the tree has approximately the same size of trunk. It is narrower but much taller than the magnolia at the Children's Hospital. The tree is in very good health judging by the color, the size, and the amount of foliage. This tree was thinned last August.

Figure 5. A close up of the foliage of the Farrington magnolia. The color is a deep and rich green.

APPENDIX I3

Magnolia Tree #82
Transplant Feasibility Analysis

May 30, 2014

Jeff Fyffe
CLEO Construction Management
747 52nd Street
Oakland, CA 94609

Subject: Magnolia #82 transplant feasibility analysis
Children's Hospital Oakland

Dear Mr. Fyffe:

CLEO Construction Management is coordinating documents for the EIR associated with Children's Hospital Oakland's Master Plan Project. The project proposes to demolish the B/C Wing within the hospital's main campus and replace it with a new Patient Pavilion to provide space for acute care, and a new Link Building to connect the Patient Pavilion to other structures within the campus.

A mature southern magnolia (*Magnolia grandiflora*) is located within the footprint of the proposed Link Building and Patient Pavilion, which cannot be constructed with the tree remaining in its current location. HortScience, Inc. was asked to explore the biological feasibility of relocating the tree to one of four locations provided by the project's landscape architect, see Exhibit-A titled "Proposed Locations to Relocate Existing Magnolia Tree", dated May 30, 2014. Three of the proposed locations are located at different places around the campus and one is located a few feet away from the tree's current location in the proposed new courtyard. This analysis responds to that request.

Description of Tree

I evaluated the southern magnolia on January 30 and April 1, 2014. The tree is mature in form and development. A plaque at the base of the tree indicates it was planted in 1860.

The trunk is 78 inches in diameter and appears typical for the species. The tree appears healthy with good vigor, spreading form, and fair structure (Photo 1). Multiple large-diameter limbs extend south and north, arising at approximately 8 feet. Several limb-supporting cables suggest the presence of structural weaknesses in the tree.

Photo 1: The large, over-mature southern magnolia (#82) is located in the hospital courtyard east of the B/C wing.

Canopy spread is approximately 80 feet north to south and 70 feet east to

west. The lower canopy is dense with dark green leaves. The upper canopy is slightly thin, and leaves in this portion of the crown appear slightly yellowed or chlorotic. Shoot growth and new leaf growth appears normal throughout the crown.

I noticed no visible signs of trunk damage or decay, and no unusual trunk shape that might indicate below-ground issues such as girdling roots. Surface roots extend in all directions, particularly in the landscaped areas north and south of the tree. Mounds and cracks in the asphalt and roots in the circular planter across the road suggest that roots extend east beneath the circular driveway.

Description of the site

The tree is growing in an interior courtyard, with the base of the trunk approximately 25 feet east of the existing B/C Wing proposed for demolition. The growing area is narrow, restricted by the B/C Wing to the west and the sidewalk and circular driveway approximately 3 feet east of the trunk.

Potential for relocation

I evaluated four possible locations for the relocation and replanting of the tree, see Exhibit-A titled “Proposed Locations to Relocate Existing Magnolia Tree”, dated May 30, 2014. Many factors must be considered when determining feasibility for transplanting any tree; among them are species response, tree age, health and structural condition, size, and site constraints. Based on these factors, I believe that relocating the tree to any of the four proposed locations risks the continued survival of the tree.

Species response to transplanting

Some species have a higher rate of transplant success than others. This variability has to do with species’ tolerance to root loss and ability to generate new roots, because the transplantation process removes most of a tree’s roots.

In the book *Trees and Development: A Technical Guide to Preservation of Trees during Land Development* (Matheny and Clark, 1998), the authors classify magnolias’ tolerance to impacts as “Poor to good – Response dependent upon location: good within native range [Southern US]; poor outside it. In California, it declines following root injury and site disturbance.”

The environment the magnolia is planted in plays a role in how well it recovers from root loss. Southern magnolias are native to the southern region of the United States where high relative humidity and frequent rainfall minimizes water stress and evapotranspiration rates of trees. Transplanted trees have a reduced ability to absorb water from the soil, and they lose less water through their leaves in their native environment compared to California’s arid climate.

In our experience, southern magnolias tend to drop their leaves when roots are disturbed. It usually takes several years for them to restore a full crown and normal appearance after leaf drop. In many cases they can recover, but others will experience decline.

Tree age

While young trees (e.g. less than 12” in trunk diameter) are likely to be successfully relocated, old trees tend to be less resilient. As trees age, their ability to resist insects, diseases, and environmental stresses declines. They also lose their ability to recover from root and foliage loss.

In its native habitat, southern magnolia is considered to have an average life span of 80 years, and a maximum of 120 years (http://bigtree.cnre.vt.edu/TreeAge.htm). At 154

years old, this tree is over-mature. Because of its age, its ability to tolerate the impacts of transplanting will be reduced.

Tree size
Small plants transplant more successfully than large plants, and they are significantly less expensive to dig and move. The larger the tree, the larger the root mass that must be dug; the sheer size of the transplant becomes an engineering and mechanical challenge. The traditional transplant size of a root ball is 1 foot per 1 inch of trunk diameter, but for a tree this size, a 1 foot per 1 inch radius -- a 78-foot radius with an area of 19,113 ft² -- would be a better guideline.

Based on estimates by Environmental Design, the tree moving consultant for this project, this rootball would be considerably smaller. Buildings located to the north and west and infrastructure to the south and east of the tree would restrict excavation to approximately 17' to the west, 25' to the north, east, and south. The estimated area of the rootball would be 1,570 ft². Given the physical limitations of excavating a root ball of this approximate size, the southern magnolia will lose most of its root system.

Tree health and structural condition
Trees in good health and with good structure are more likely to survive the relocation process than those in poor health or those possessing significant structural defects. For its age, this tree is in good health with good vigor, suggesting it may be able to tolerate the transplant process. The upper canopy of this tree was slightly thin, and leaves in this portion of the crown appeared slightly yellowed or chlorotic. This is an indication of declining health and vitality.

Site Constraints
The following site constraints were discovered during the evaluation of the four proposed locations for the relocated tree:

Site A; Relocate to the end of 53rd Street east of Dover, adjacent to the relocated homes in Phase 2 of the project. There were two paths of travel evaluated to transport the tree to this location.

- Path 1 – Travel across 52nd Street and continue north on Dover Street, then turn east on 53rd Street and continue east to the Site A location.
    - There are numerous existing overhead power lines and telephone cables that service the residential properties along the path that would be difficult to temporarily remove during the transport process to this location. It does not appear to be feasible to physically relocate the tree using this path of travel.
- Path 2 – Travel across 52nd Street and continue north-east utilizing the vacant land along the 24 freeway. This path of travel would require that the construction of the Caltrans ROW retaining wall, as part of Phase 2 of the project, be constructed first.
    - There is one existing overhead power line that could be temporarily removed during the transport process to this location. It appears feasible to physically relocate the tree to this location.

Site B; Relocate to the new planter in the center of the turn-around / patient drop-off area in Phase 2 of the project.

- There are no site constraints to physically relocate the tree to this location.

Site C; Relocate to an existing property west of Martin Luther King Jr. Way between 52nd Street and 53rd Street.

- The existing BART tracks that are suspended above MLK Jr. Way do not provide sufficient vertical clearance to relocate the tree to this location.

Site D; Relocate a few feet east of the tree's current location within the new courtyard in Phase 2 of the project.

- Based on a Relocation Study conducted by HDR Architects to determine the feasibility of locating the tree within the new courtyard, there is not enough room within the new courtyard to accommodate the relocated tree, see the study shown in Exhibit-B titled "Existing Magnolia Tree Relocation Study – Option D Courtyard", dated May 30, 2014.

Based on our study and the site constraints described above, it is feasible to physically relocate the tree only to either Site A or Site B as shown on Exhibit-A. This physical feasibility does not take into account the biological risks with the actual relocation and transplanting of the tree, discussed elsewhere in this analysis.

Other considerations

Root ball preparation

Ideally, root ball preparation would take place over a minimum of 9 to 12 months, where incremental root pruning will allow the tree to gradually adapt to root loss.

Transplant timing

The ideal time to transplant trees is in the fall, when temperatures are cooler and atmospheric humidity is higher.

Holding in the nursery

Success of transplanting decreases the longer a tree is stored, before it is planted in the final location. Trees stored above ground are exposed to increased temperatures, increasing the potential for desiccation and damage to above- and below-ground parts of the plant. Trees that are immediately planted into the final landscape are able to begin establishing a new root system immediately.

Due to the proposed sequence and durations of construction for Phase 2 of the project, as shown below, both of the proposed Site A and Site B planting locations would require that the tree be stored for approximately three to five years. This delay exposes the tree to much greater physiological stress than if it were planted immediately after excavation, and reduces the likelihood for survival. Monitoring soil moisture would be critical during the holding period.

Proposed sequence and timeline of construction For Phase 2:

Demolition of the B/C Wing	2020
New Link Building construction	2020 - 2021
New Family Residence Bldg.	2022
Relocate (2) Existing Homes	2022
New Clinical Support Bldg. construction	2022
New Caltrans ROW Retaining Wall construction	2023
New Patient Pavilion & Parking Structure construction	2023 – 2025

Site A - Based on the tree removal being required prior to the demolition of the B/C Wing in 2020, and the replanting occurring after the new Caltrans ROW Retaining Wall is completed in 2023, the tree would be stored for approximately three years.

Site B - Based on the tree removal being required prior to the demolition of the B/C Wing in 2020, and the replanting occurring after the new Patient Pavilion and Parking

Structures are completed 2025, the tree would be stored for approximately five years.

After-care
Post-transplant maintenance of the tree will be the most important phase of the process, and would require close monitoring by qualified arborists for a minimum of 5 to 8 years.

Summary and Opinion
Transplanting trees under the best of circumstances is a risky and costly endeavor with no guarantee that the tree will survive through each step of the process. We can only weigh what is known – species response, age, condition, size, and site constraints – against the cost and our willingness to accept the risk that the tree may not survive, yielding zero return on the financial and time investment. Considering the relative importance of each of these four factors, I would rank tree age as the most important, followed closely by species response.

Although this southern magnolia is in moderately good condition, the advanced age of the tree and exceptionally large size is a concern. Because of its age, the tree has a limited physiological capacity to recover from root loss and from any foliage loss that may occur. The tree will lose a significant amount of roots due to the tree's large size, and post-transplant water management will be critical, particularly outside the tree's natural environment.

While it is mechanically possible to move large, mature trees, it is an exceptional process that should warrant the expense. The hospital has received estimates to relocate the tree and provide after-move maintenance for two years that range between $400,000.00 and $600,000.00, depending upon the site for relocation. However, serious consideration must be given to the value of the tree and its ability to survive and perform well in the new landscape. For the same amount of money, many new young trees could be planted that will one day provide more benefits than a single transplanted tree.

Given what we know, I believe the southern magnolia has a greater potential for decline than the likelihood it will survive and thrive for many years after relocation. This conclusion would remain the same regardless of whether Site A or B might be identified for relocation.

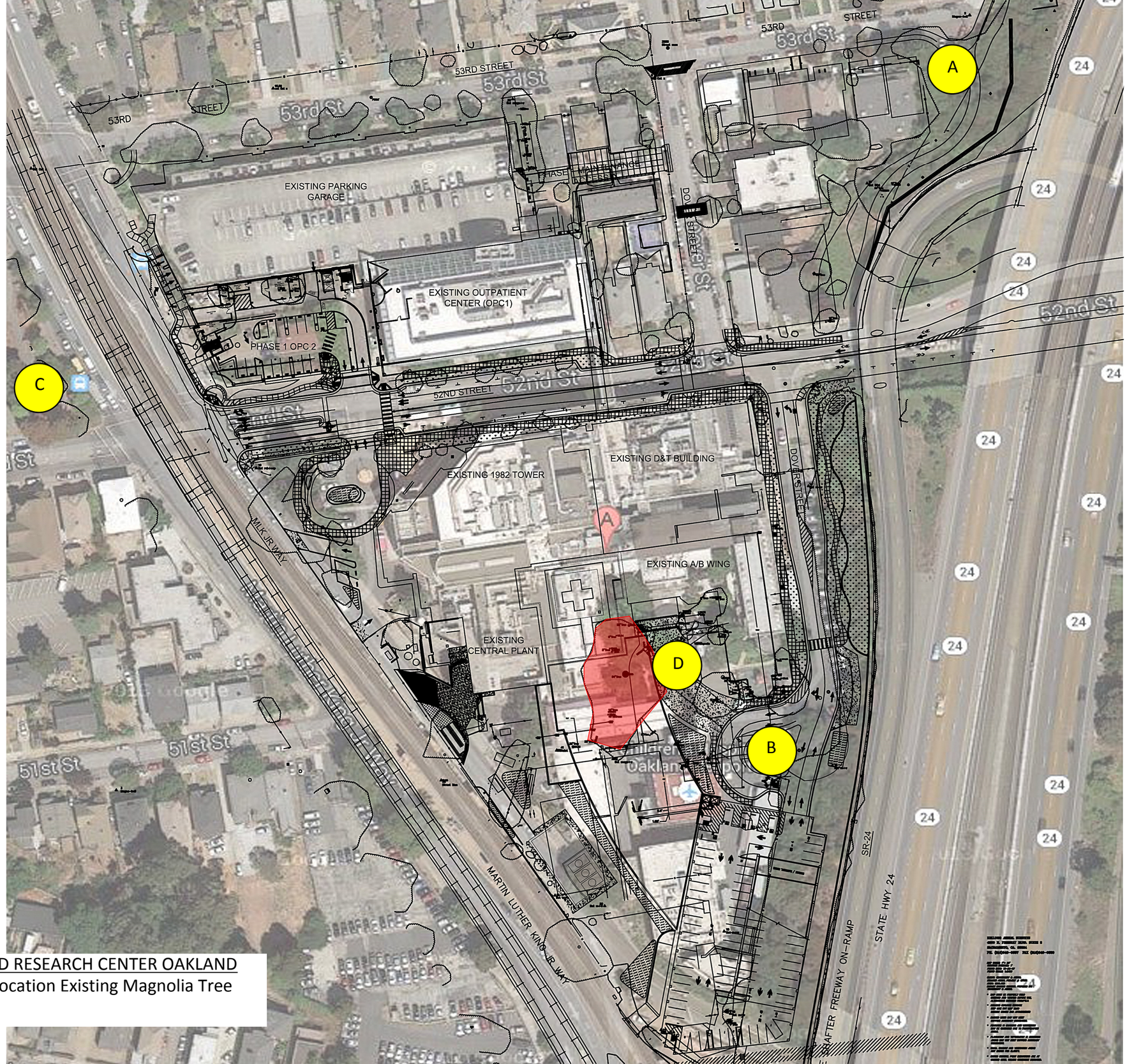
If you have any questions regarding my observations or opinion, please feel free to contact me.

Sincerely,

Deanne Ecklund

Deanne Ecklund
Certified Arborist WE-9067A

Exhibits
A - Proposed Locations to Relocate Existing Magnolia Tree
B - Existing Magnolia Tree Relocation Study – Option D Courtyard



LOCATION A:
Caltrans area South of 53rd Street

LOCATION B:
Phase 2 Drop-Off Island

LOCATION C:
Existing park at Martin Luther King Jr. Way & 52nd Street

LOCATION D:
Phase 2 Courtyard

Existing Magnolia Tree Location

CHILDREN'S HOSPITAL AND RESEARCH CENTER OAKLAND
Proposed Locations to Relocation Existing Magnolia Tree
May 30, 2014

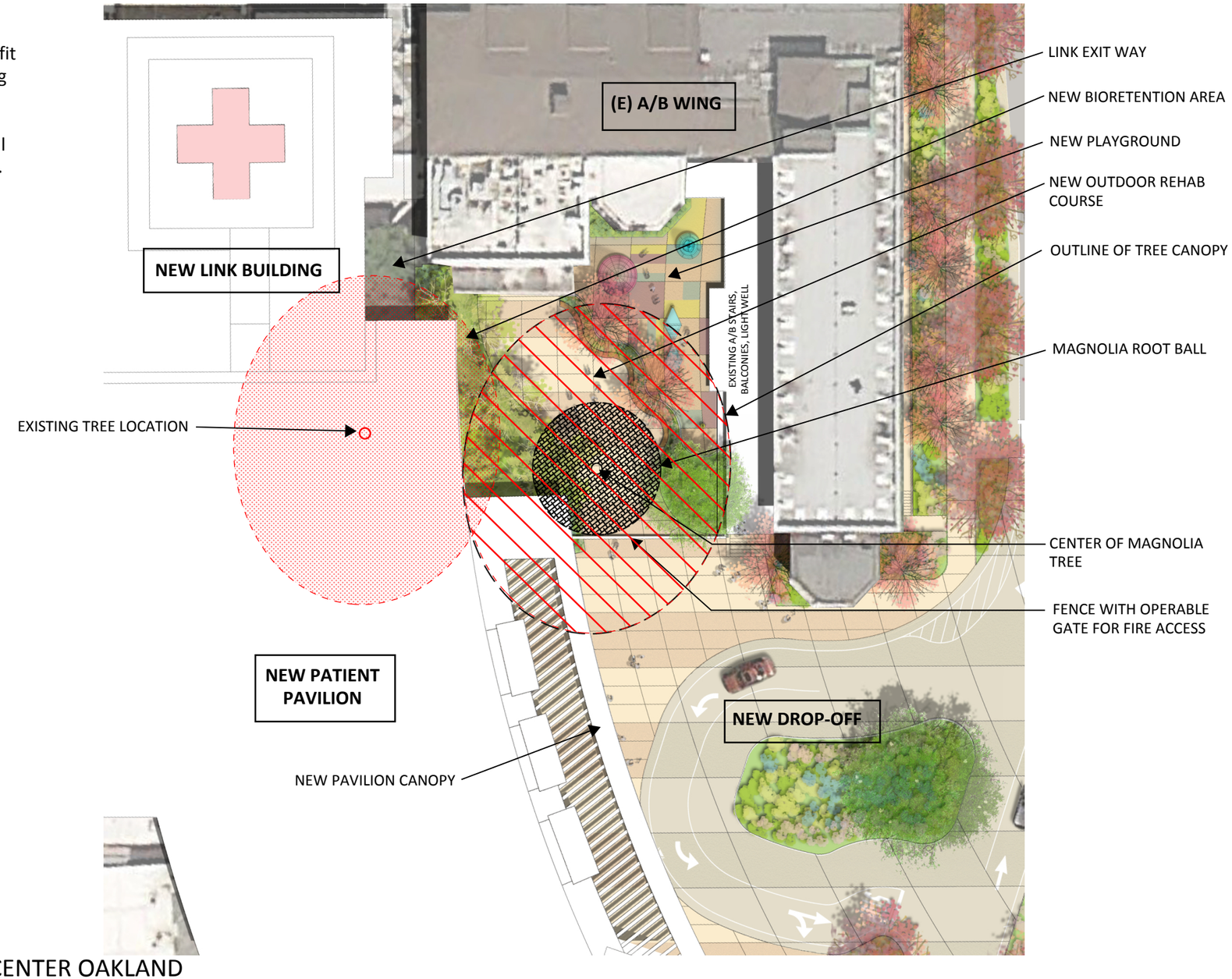
EXHIBIT A

CONSTRAINTS

1. The root ball requires a great deal of underground space. It's location will need to be clear of the retaining walls adjacent to the A/B Wing.

2. The tree canopy will need significant trimming to fit within the courtyard without conflicting with building facades and canopies.

3. The only possible location proximate to its original location is in the center of the outdoor rehab course. This space also provides surface area for a fire truck. Clear space is needed for the truck's support outriggers used during ladder deployment. The tree would be in the way.



CHILDREN'S HOSPITAL & RESEARCH CENTER OAKLAND
Existing Magnolia Tree Relocation Study
Option D: Courtyard
May 30, 2014

EXHIBIT B