Appendix I

Shadow Analysis for the Creekside Project at 5132 Telegraph Avenue

D U R I N G
A S S O C I A T E S

Environmental Analysis
Urban Planning

Shadow Analysis for the Creekside Project at 5132 Telegraph Avenue

The purpose of the shadow analysis is to evaluate the potential shadow impacts of the proposed Creekside Mixed-Use Development Project located at 5132 Telegraph Avenue in Oakland.

Standards of Significance

A project would have a significant impact under the California Environmental Quality Act if it would meet any of the following criteria:

- Introduce landscape that would now or in the future cast shadow on existing solar heat collectors (in conflict with California Public Resource Code Section 25980-25986);
- Cast a shadow that substantially impairs the functions of a building using passive solar collection, solar collectors for hot water heating, or photovoltaic collectors;
- Cast a shadow that substantially impairs the beneficial use of any public or quasi-public park, lawn, garden, or open space; or
- Cast a shadow on an historic resource, as defined by CEQA Section 15064.5(a), such that the shadow would materially impair the resource's historic significance by materially altering those physical characteristics of the resource that convey its historical significance and that justify its inclusion on or eligibility for listing in the National Register of Historic Places, the California Register of Historical Resources, a local register of historical resources or a historical resource survey form (DPR Form 523) with a rating of 1-5.

Impact Analysis

In order to identify the proposed project's potential shadow-related impacts, existing and project-generated shade patterns were compared for each of the four seasons (from 9:00 a.m. until 4:00 p.m.). Specifically, the following four dates were used for analysis purposes: the winter and summer solstices (December 22 and June 21), when the sun is at its lowest and highest point, respectively, and the spring and fall equinoxes (March 21 and September 23), when day and night are of approximately equal length. The shadow analysis was based on the attached charts and images. A three-dimensional digital model of the proposed project was used to calculate the shadows for each time of day and date evaluated. During the winter solstice in December, the sun is at its lowest and the project shadows would be at their longest. During the summer solstice in June, the sun is at its highest and the project shadows would be at their shortest. During the spring and fall equinoxes in March and September, respectively, shadows are midway through a period of shortening and lengthening. In general, new shadows from the project would fall in a westerly to northwesterly

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direction during the morning hours and sweep eastward to terminate in a northeasterly and then easterly direction as the afternoon progresses.

Solar Collectors

The site reconnaissance conducted for this analysis did not identify any existing passive solar heat collectors, solar collectors for hot water heating, or photovoltaic solar collectors in the areas adjacent to the project site. The project and proposed landscaping would not cast a shadow on a building using passive solar heat collection, solar collectors for hot water hearting or photovoltaic solar collectors.

Temescal Library

The Oakland City Library Temescal Branch located on the northwest corner of 52nd Street and Telegraph Avenue is City of Oakland Historical Landmark #43 and is, therefore, considered an historic resource under CEQA.

CEQA Section 21084.1 states "a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." A "substantial adverse change" is defined by CEQA Guidelines Section 15064.5 as "demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired." The significance of an historical resource is "materially impaired," according to Guidelines Section 15064.5(b)(2), when a project demolishes or materially alters, in an adverse manner, those physical characteristics of the resource that:

- convey its historic significance and that justify its inclusion in, or eligibility for inclusion in, the California Register of Historical Resources (including a determination by the lead agency that the resource is eligible for inclusion in the California Register); or

- account for its inclusion in a local register of historical resources adopted by local agency ordinance or resolution (in accordance with Public Resources Code Section 5020.1(k)); or account for its identification in an historical resources survey that meets the requirement of Public Resources Code Section 5024.1(g), including, among other things, that "the resource is evaluated and determined by the [State Office of Historic Preservation] to have a significance rating of Category 1 to 5 on DPR Form 523," unless the lead agency "establishes by a preponderance of evidence that the resource is not historically or culturally significant."

The attached figures illustrate the existing shadows and the shadows cast by the project for March, June, September and December and the attached chart depicts the period of time the new shadows would be cast on the Temescal Library. In November, December, January and February the proposed project would cast approximately 30 minutes of new shadow before 10:00 a.m. on the front (east) façade of the library. The project would not cast shadow on the library during the remainder of the day during the months of November to February nor cast shadow on the library at any time of day during the remaining months of the year. The amount of new shadow cast on the library is considered relatively minor due to the short duration of the shadow and due to the limited period of the year when it would be cast. Therefore, the shadow cast by the project would not result in a significant physical effect such that the shadow would materially impair the resource’s historical significance identified by the four criteria above (event, person, architecture, or informational potential) and would not affect the listing in the National Register of Historic Places, California Register of

Historical Resources, Local register of historical resources or a historical resource survey form (DPR Form 523) with a rating of 1-5.

Frog Park (Redondo Playground)

The Redondo Playground of Frog Park is situated to the northeast of the proposed project and contains a number of large evergreen (mostly Redwood) conifer trees, play areas, benches and a picnic area. The park is situated at the northwest corner of Clarke Street and Redondo Avenue directly across Clarke Street from the project site. The attached figures illustrate the existing shadows and the shadows cast by the project for March, June, September and December and the attached chart depicts the period of time the new shadows would be cast on the park. The existing mature trees in the park cast significant shadow on the park at all times of the year.

The project would cast afternoon shadow on the park during the months of September, October, November, December, January, February and March. During the fall equinox (September 23) the project would cast shadow on the park beginning at approximately 3:00 p.m. (4:00 p.m. during the spring equinox on March 21). This shadow would extend up to approximately ten feet into the southeast side of the park near Clarke Street at a width up to approximately 50 feet. The new 500 square feet of shadow cast by the project would shadow approximately four percent of the park's total area. The shadow would be cast on an open area not occupied by play equipment or seating/picnic areas.

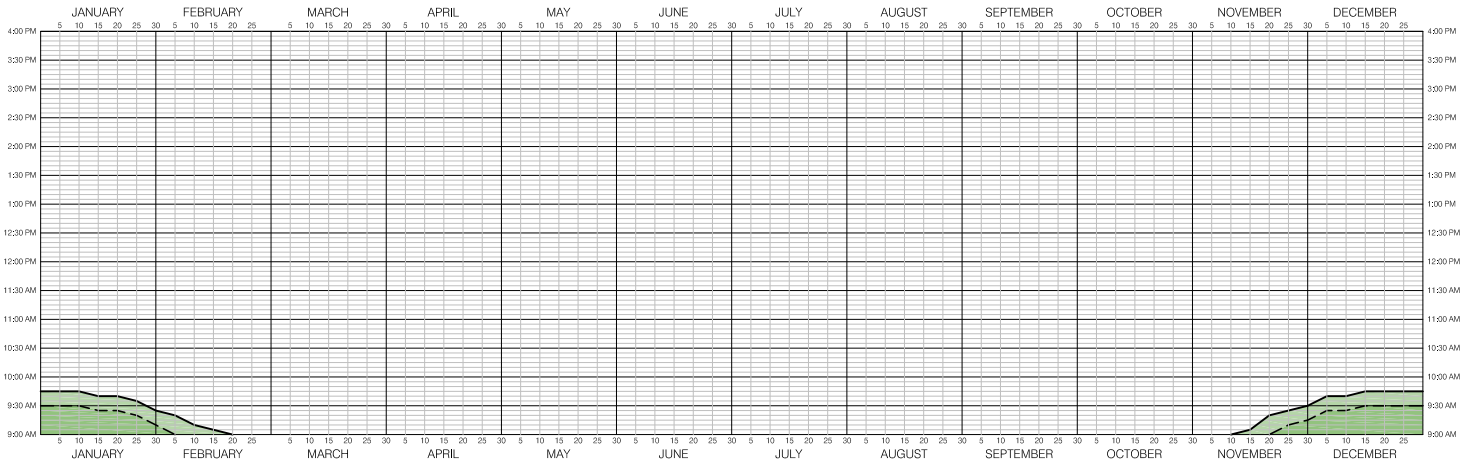
During the winter solstice (December 22) the project would cast shadow on the park beginning at approximately 1:30 p.m. This shadow would extend up to approximately 20 feet into the southeast side of the park near Clarke Street at a width up to approximately 50 feet. The new 1,000 square feet of shadow cast by the project would shadow approximately nine percent of the park's total area. The shadow would be cast primarily on an open area not occupied by play equipment or seating/picnic areas with a small portion of the shadow encroaching onto the southeast portion of the southeastern-most play area replacing existing scattered light which is currently filtered by existing trees and fences.

The project would not cast any shadow on the park during the months of April, May, June, July and August.

The shadow cast by the proposed project on the park would not substantially impair the beneficial use of the park. No new shadow would be cast during the summer and during the morning and the middle of the day during the remainder of the year. Shadow cast by the project during the fall, winter and spring would be restricted to the afternoon and shadow only a small percentage of the park. Except during winter when the project would cast a new shadow on only a limited portion of one of the play areas thereby replacing existing filtered sunlight, new shadow cast by the project would cover an open area not occupied by play equipment or seating/picnic areas. Park users would continue to be able to use the park's play areas, benches and picnic areas beneficially. Thus, the new shadow cast by the project on the park would be considered a less than significant environmental impact.

Conclusion

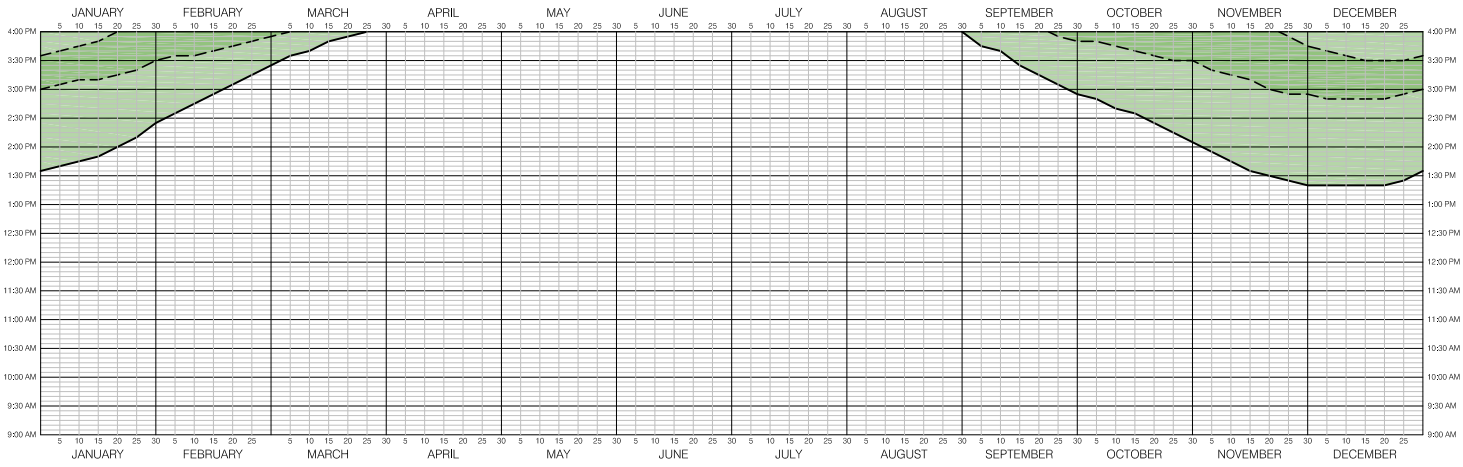
The project would not result in a significant shadow impact.



SHADOW LINE OF EXISTING BUILDING & TREES

SHADOW LINE OF PROPOSED BUILDING

CHART SHOWING PERIOD OF TIME THE NEW BUILDING AND THE EXISTING BUILDING AND TREES CASTING SHADOW ON THE EXISTING LIBRARY



SHADOW LINE OF EXISTING BUILDING & TREES

SHADOW LINE OF PROPOSED BUILDING

CHART SHOWING PERIOD OF TIME THE NEW BUILDING AND THE EXISTING BUILDING AND TREES CASTING SHADOW ON FROG PARK

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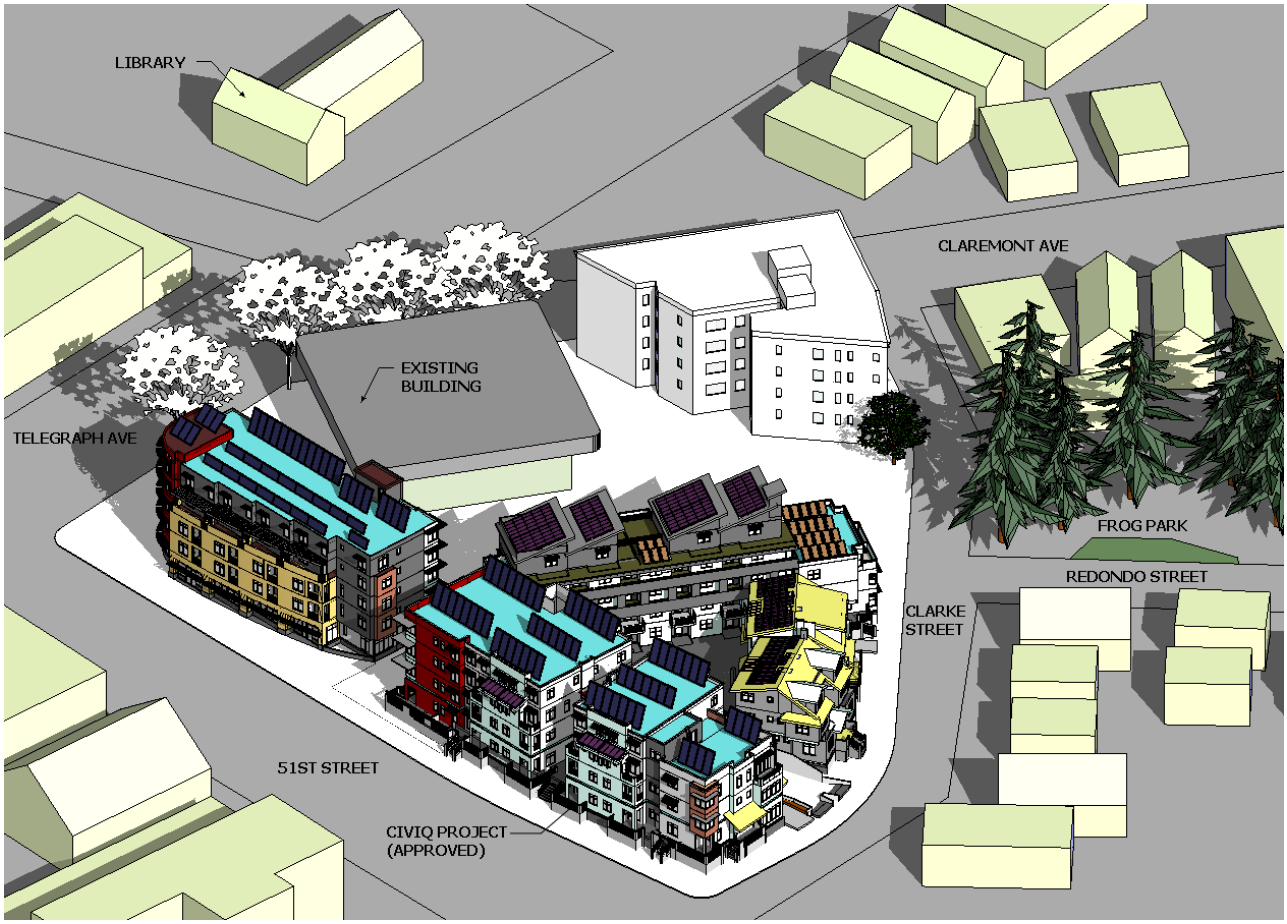
OVERALL VIEW FROM SOUTHEAST LOOKING NORTHWEST



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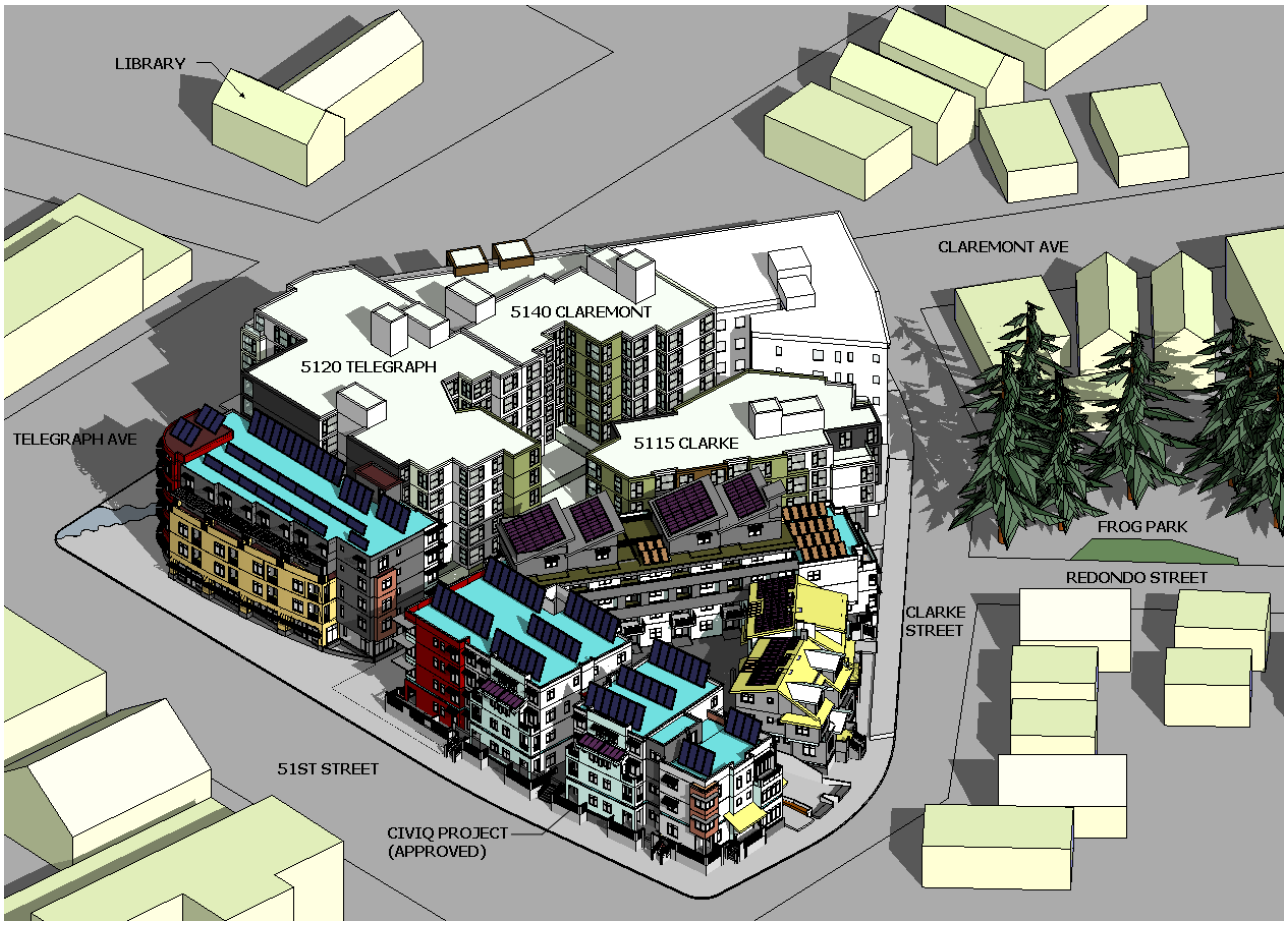

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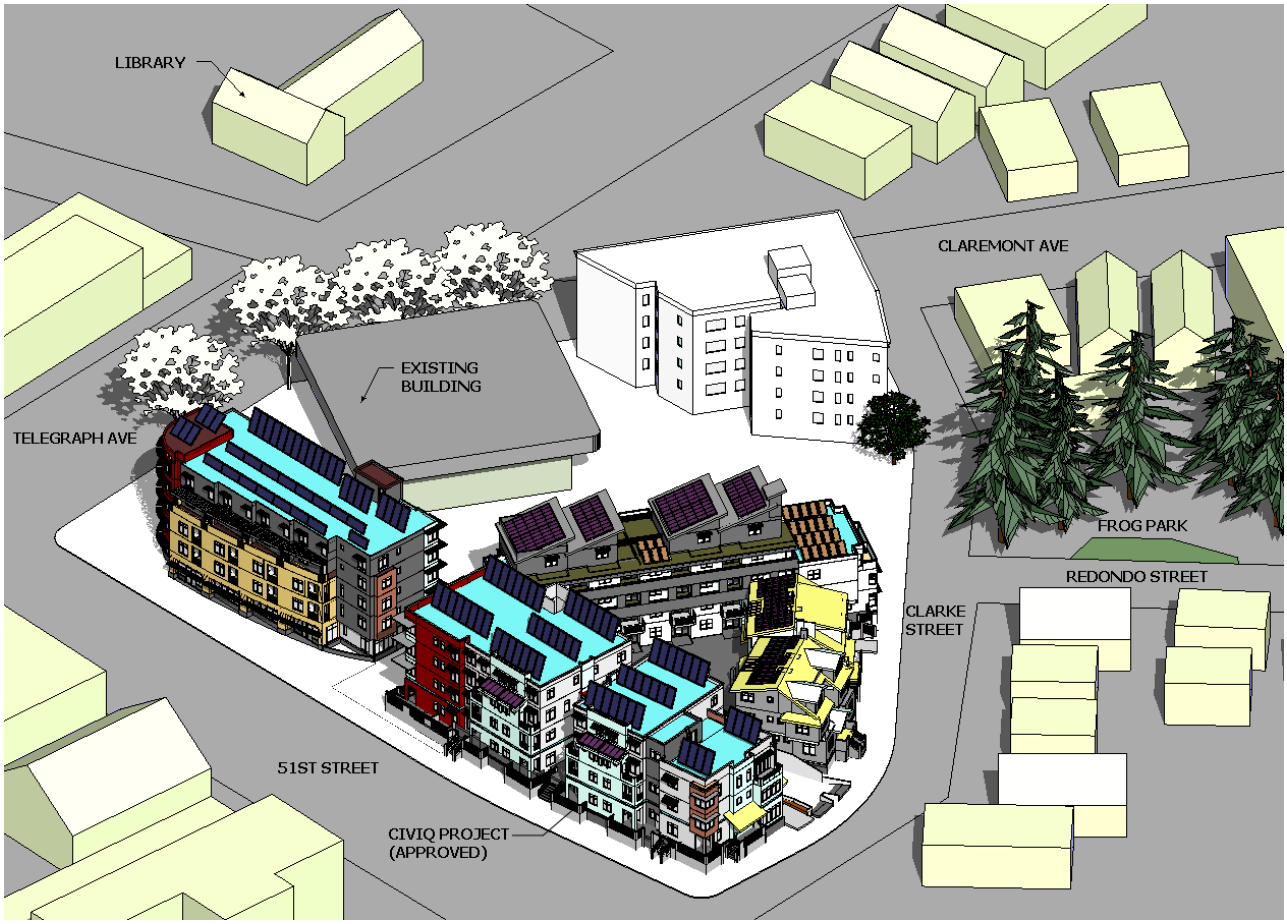

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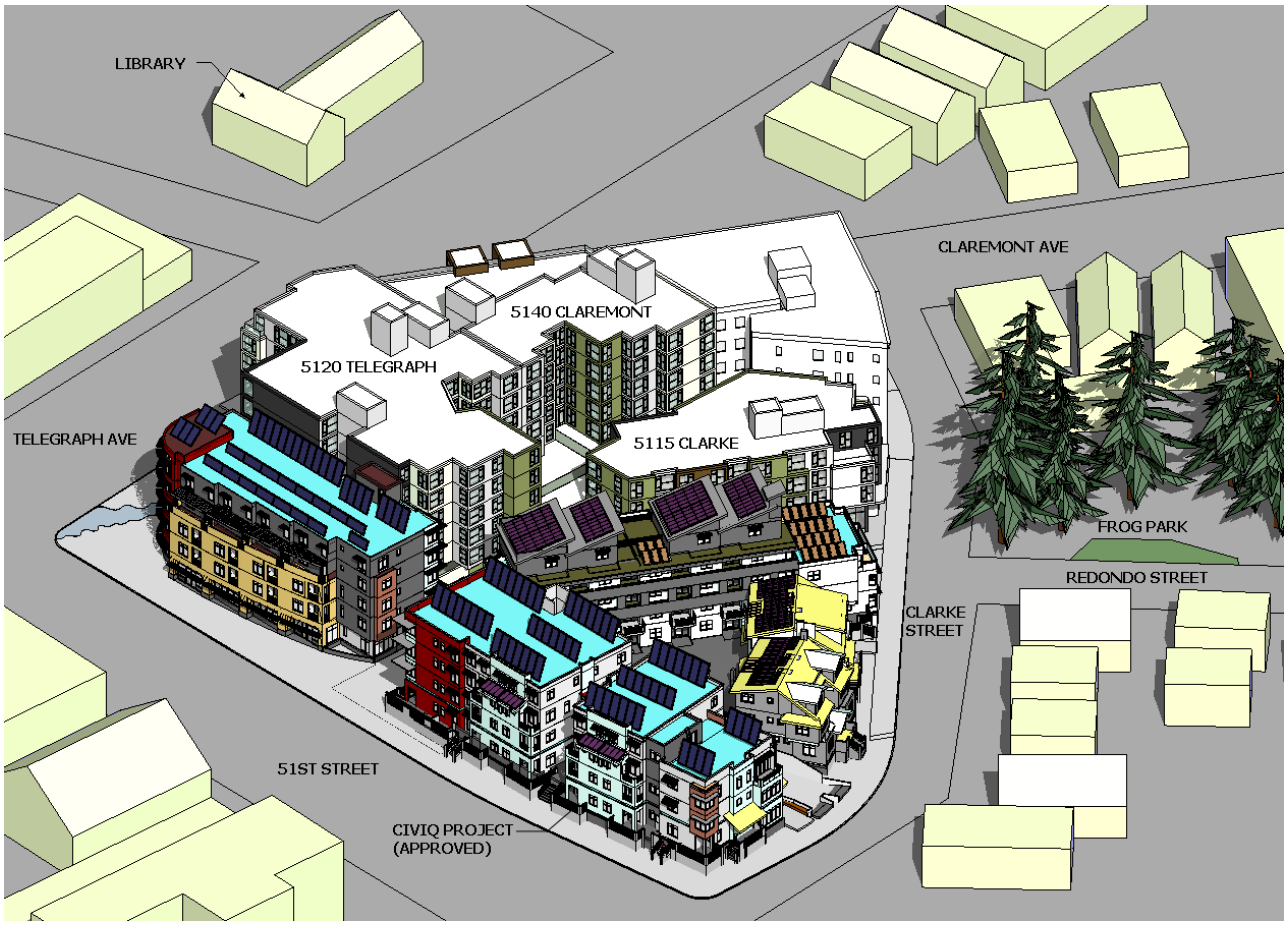

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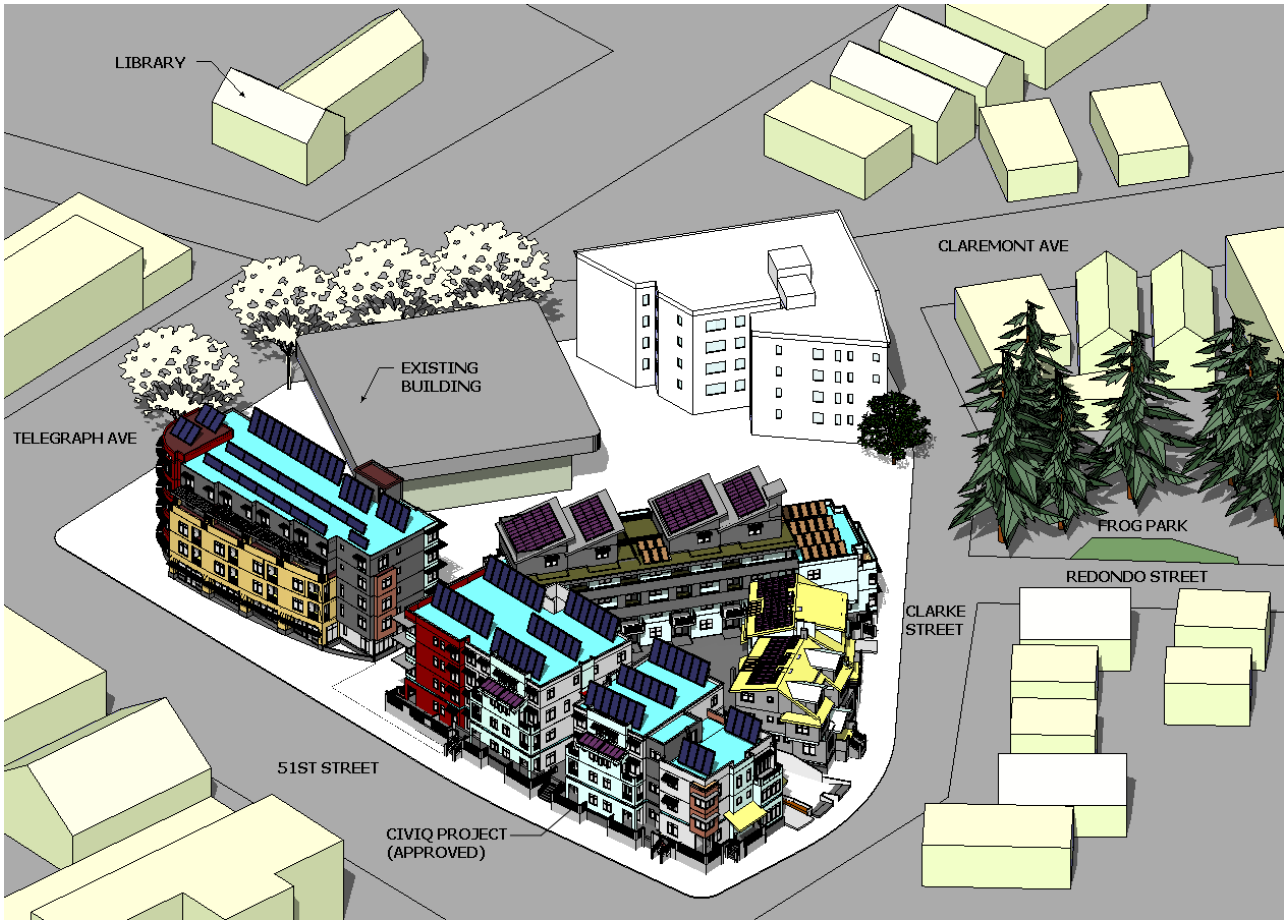

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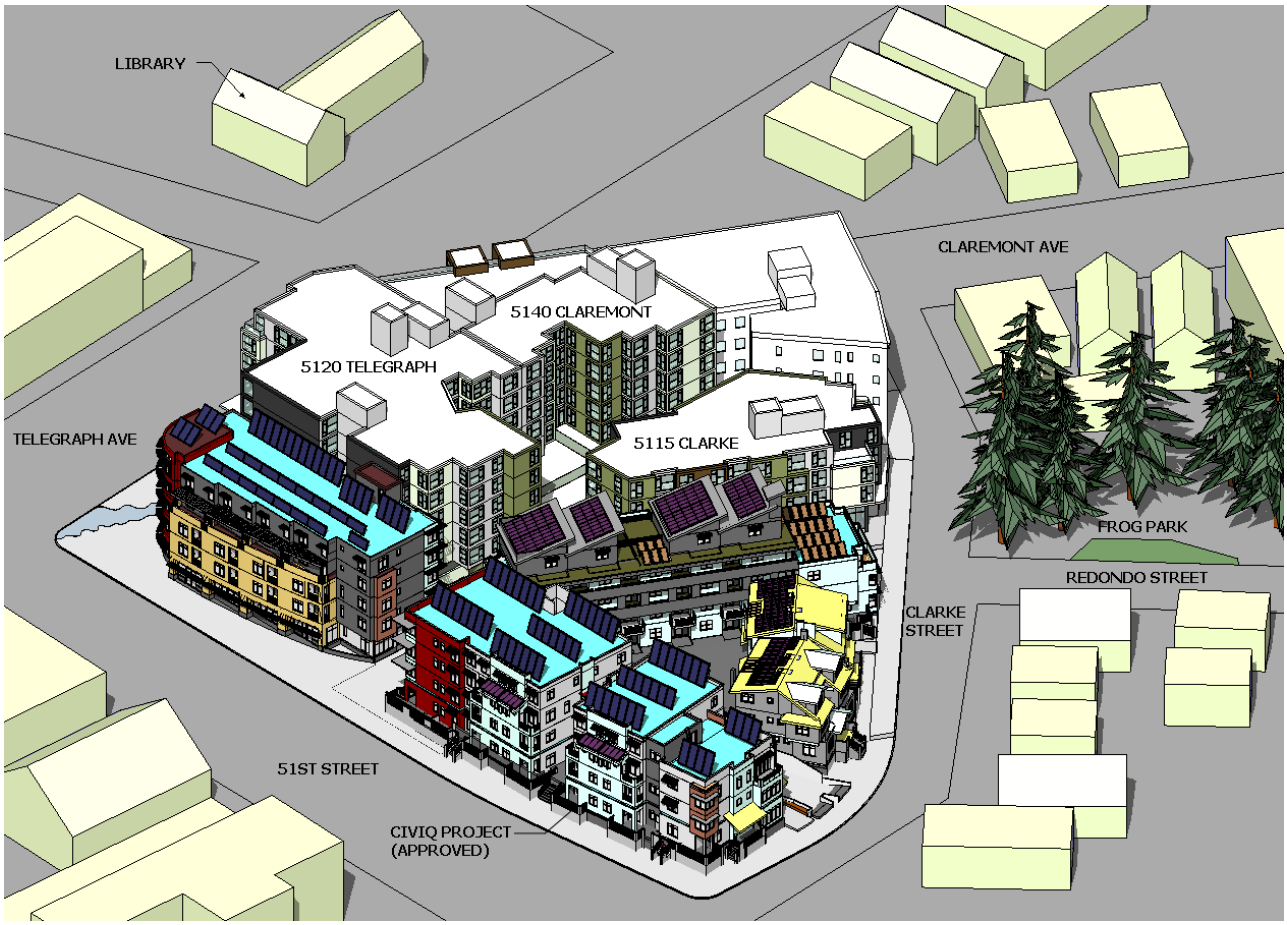

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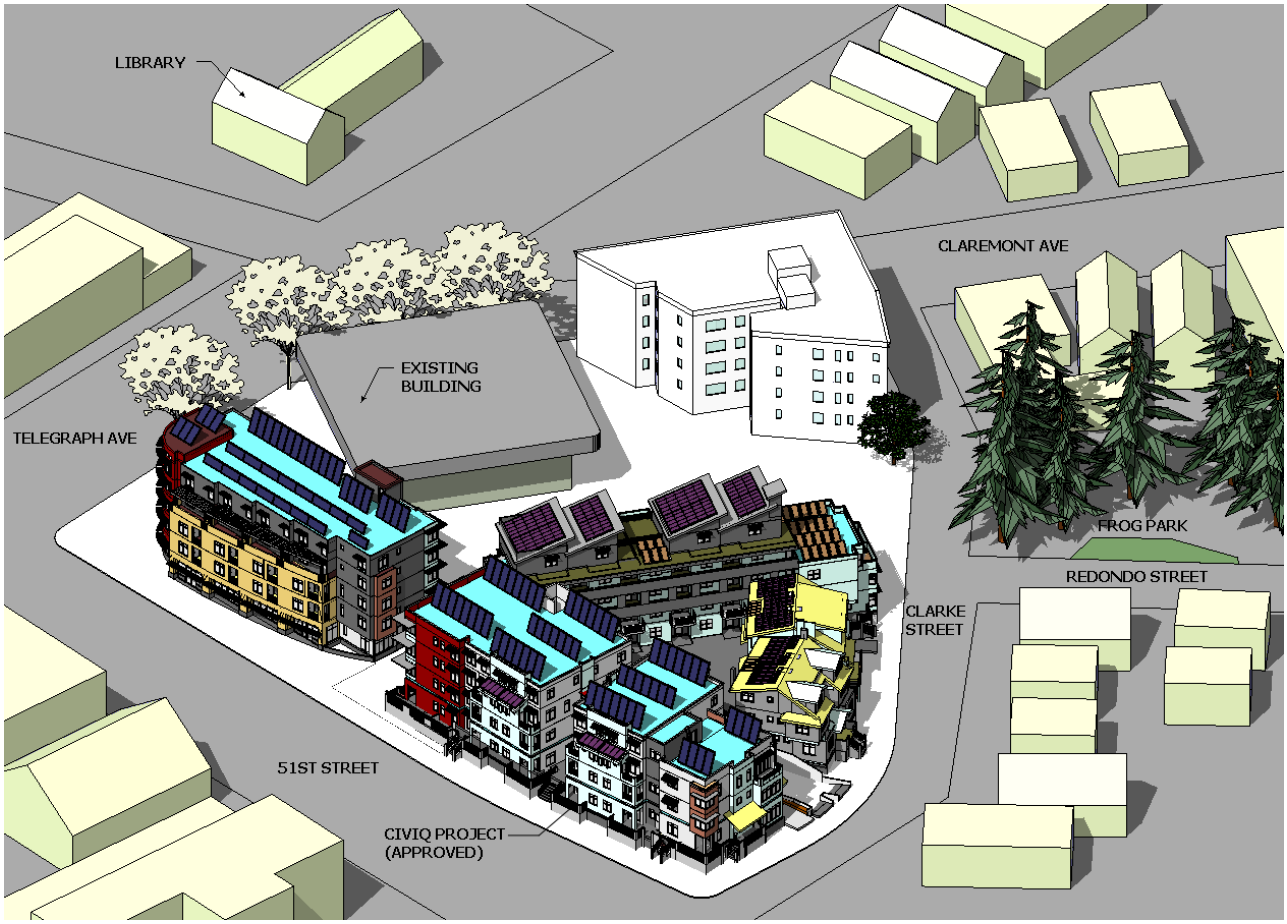

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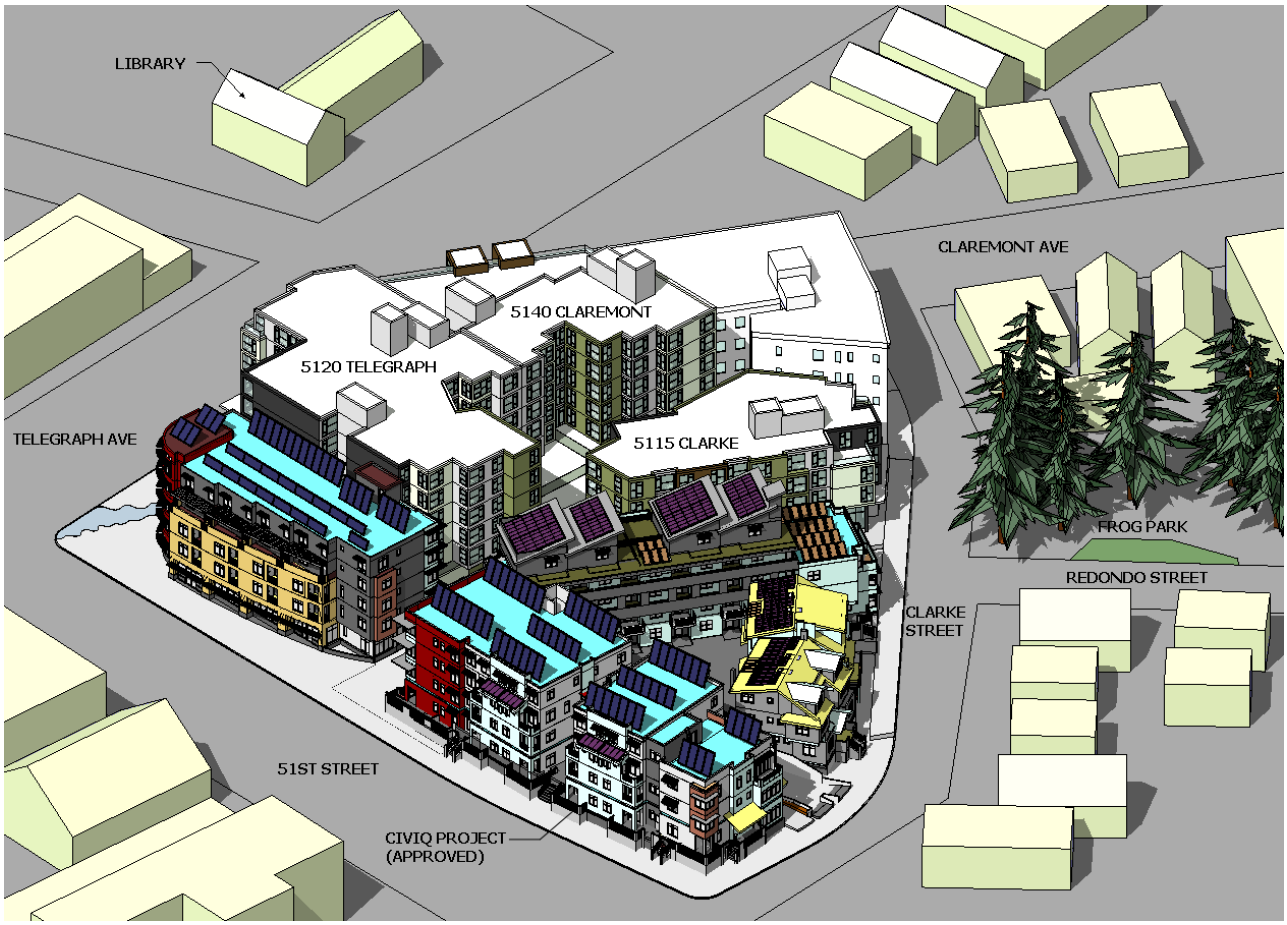

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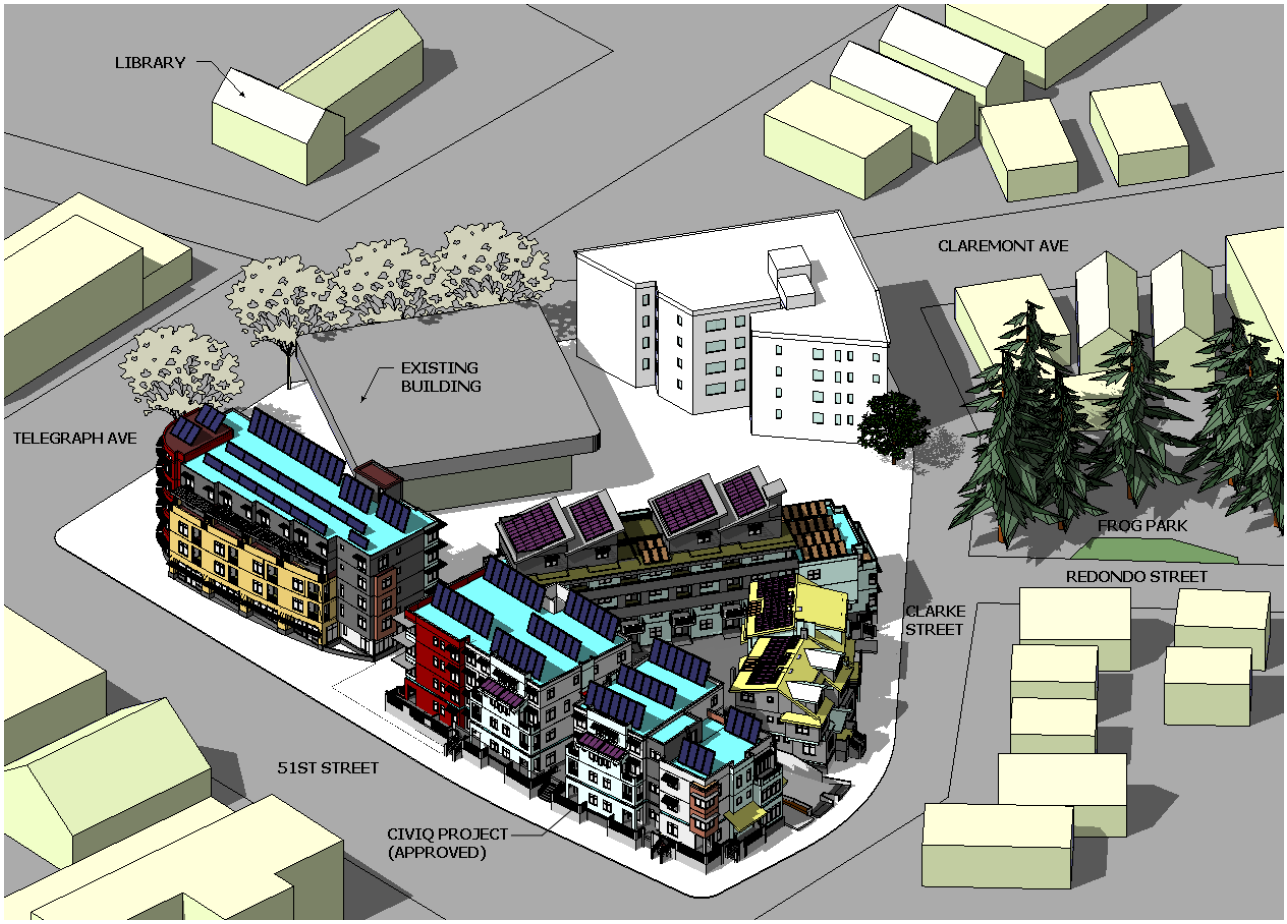

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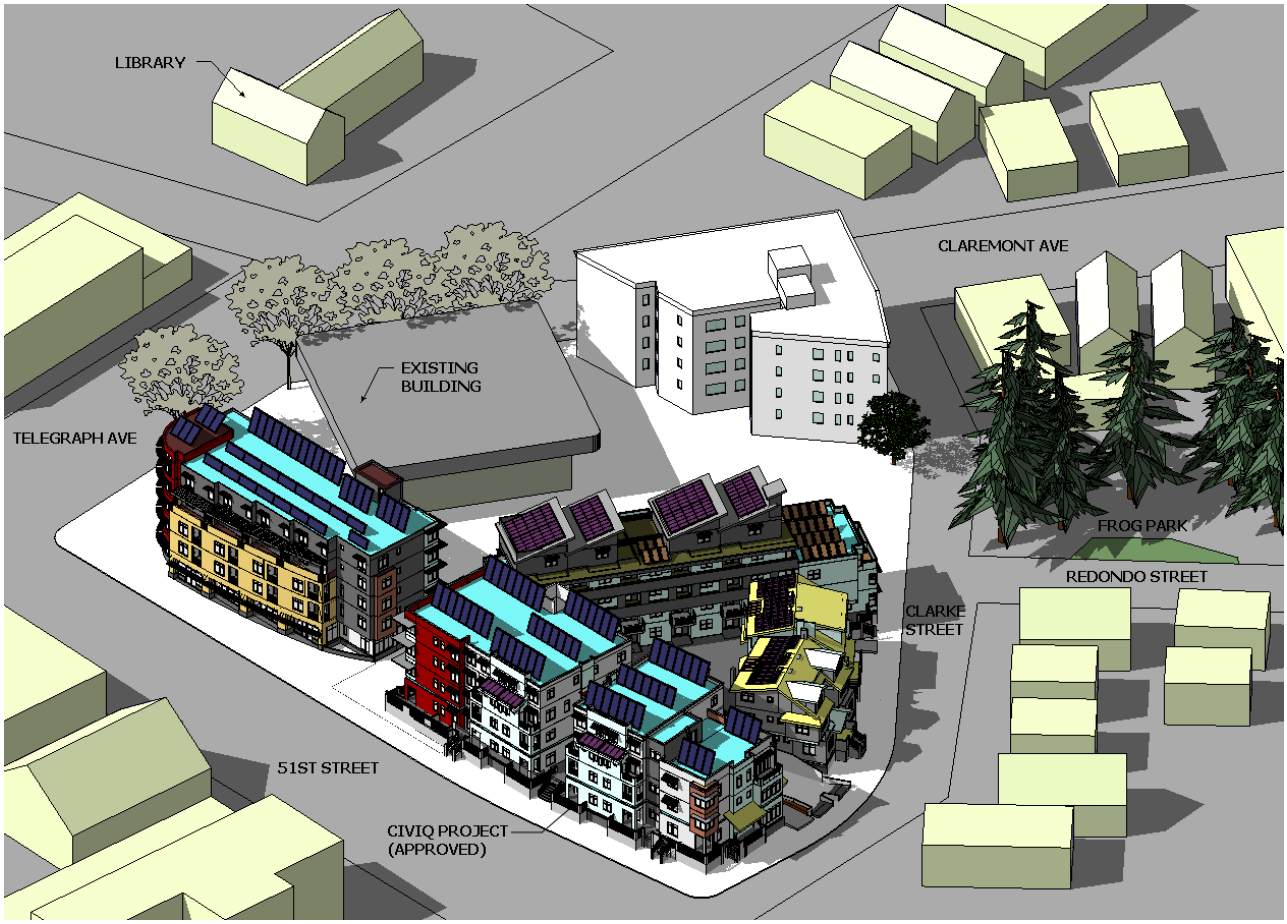

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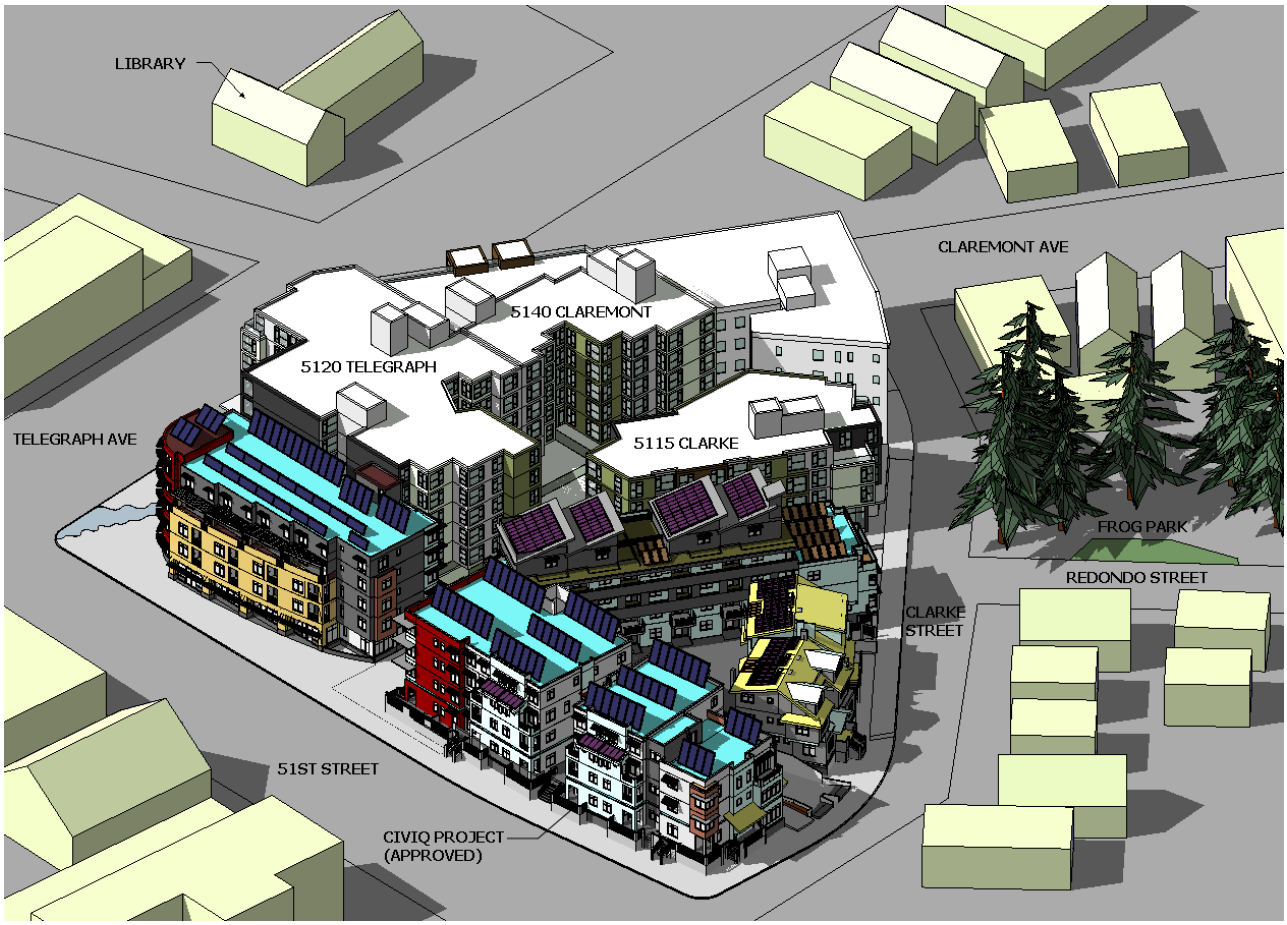

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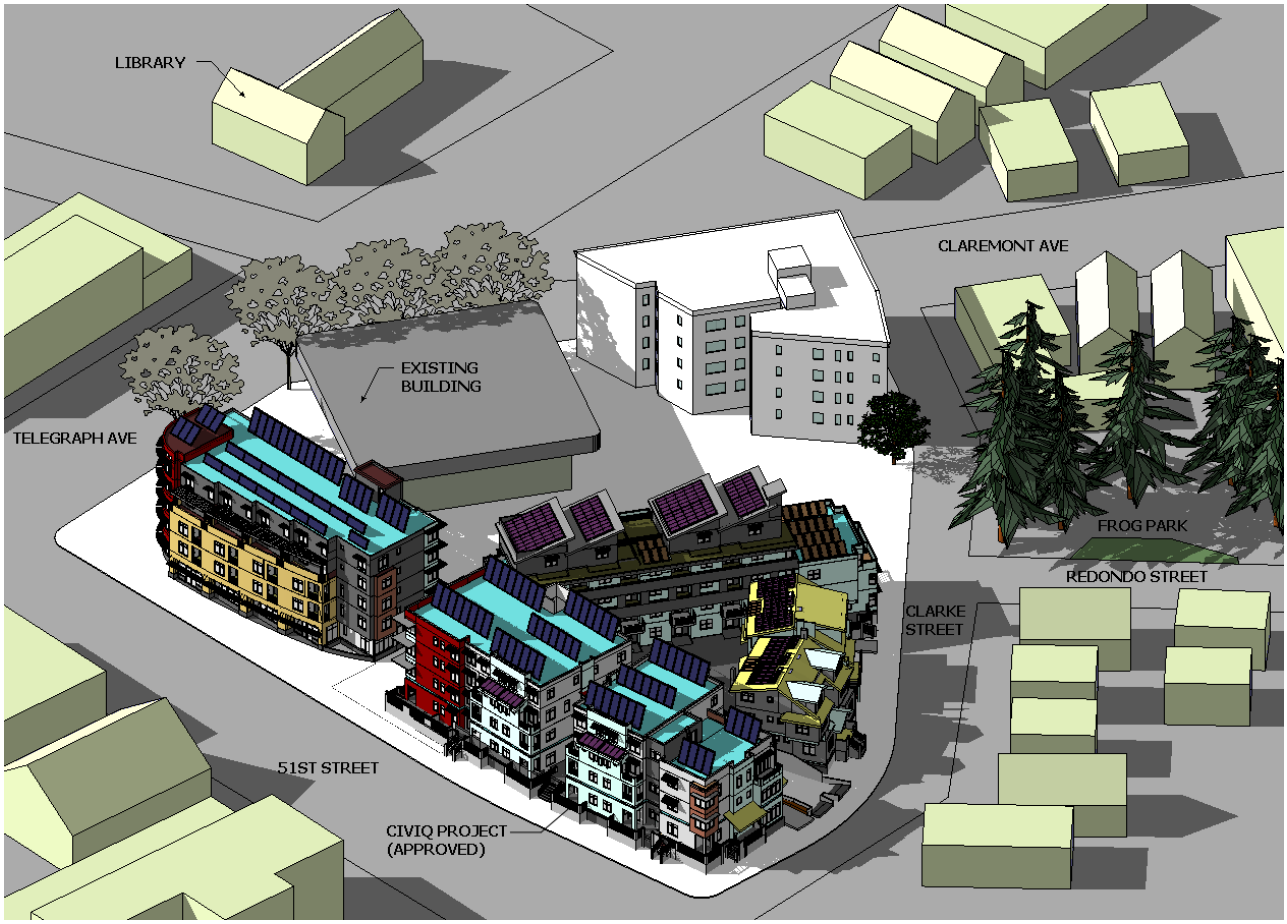

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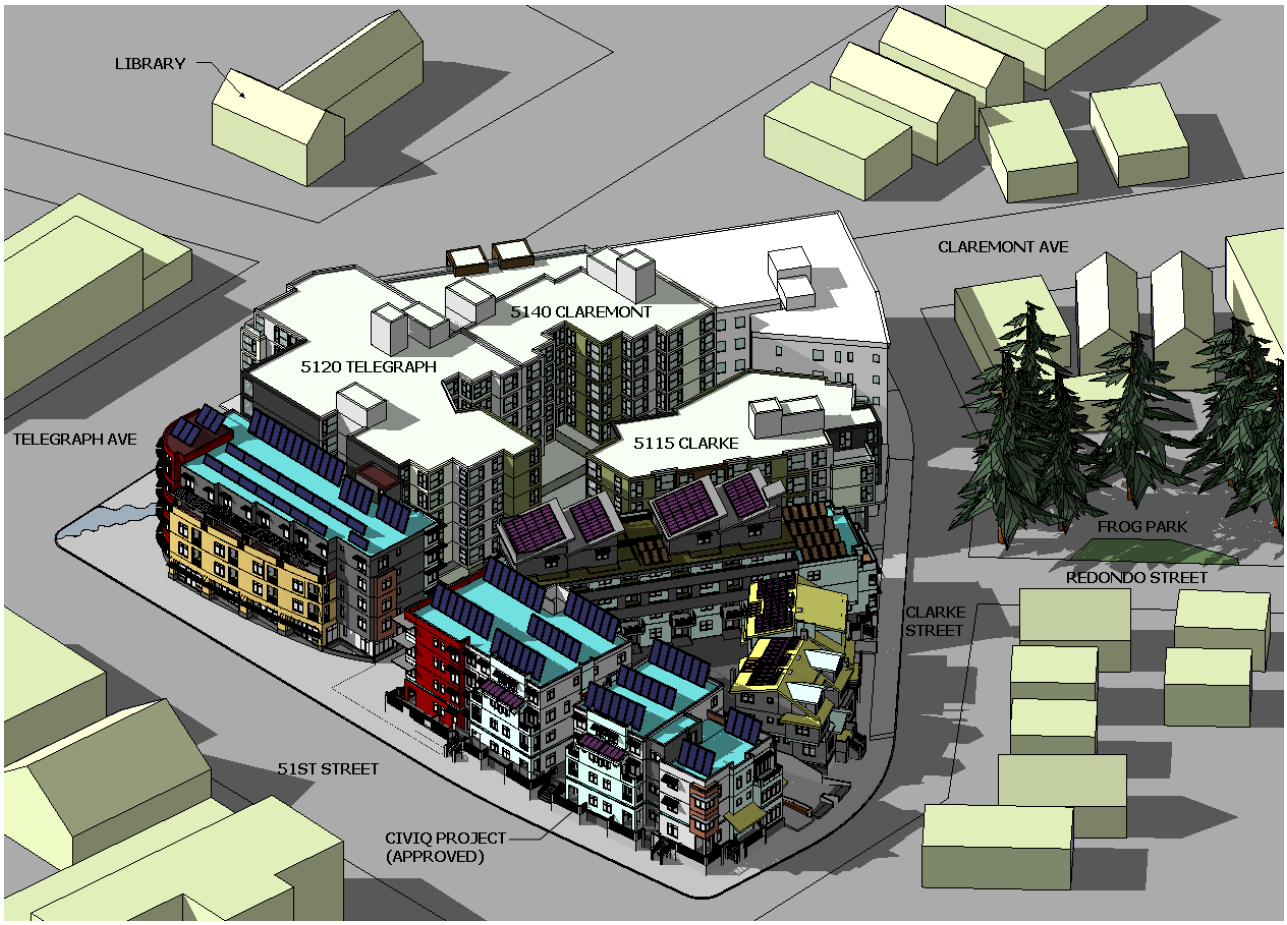

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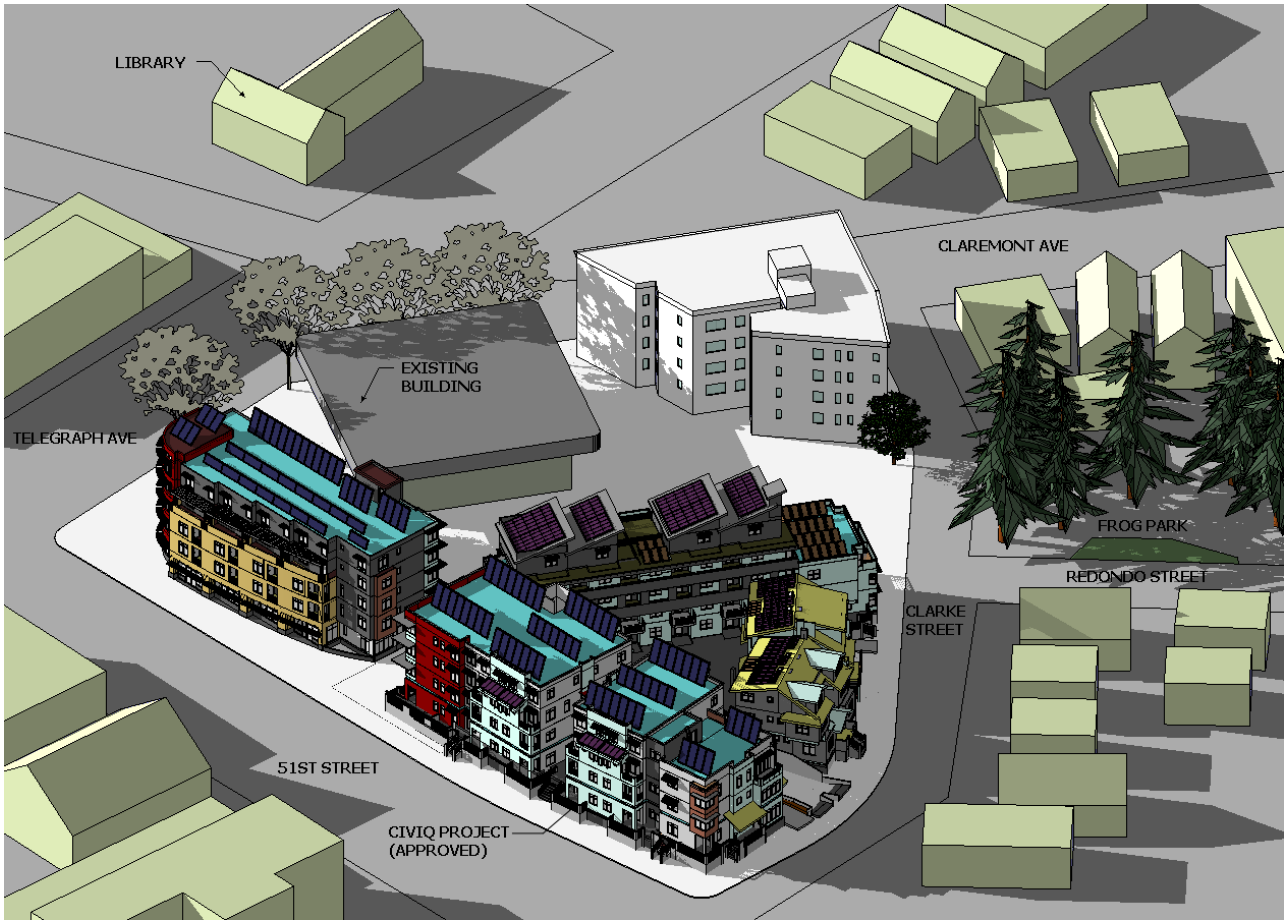

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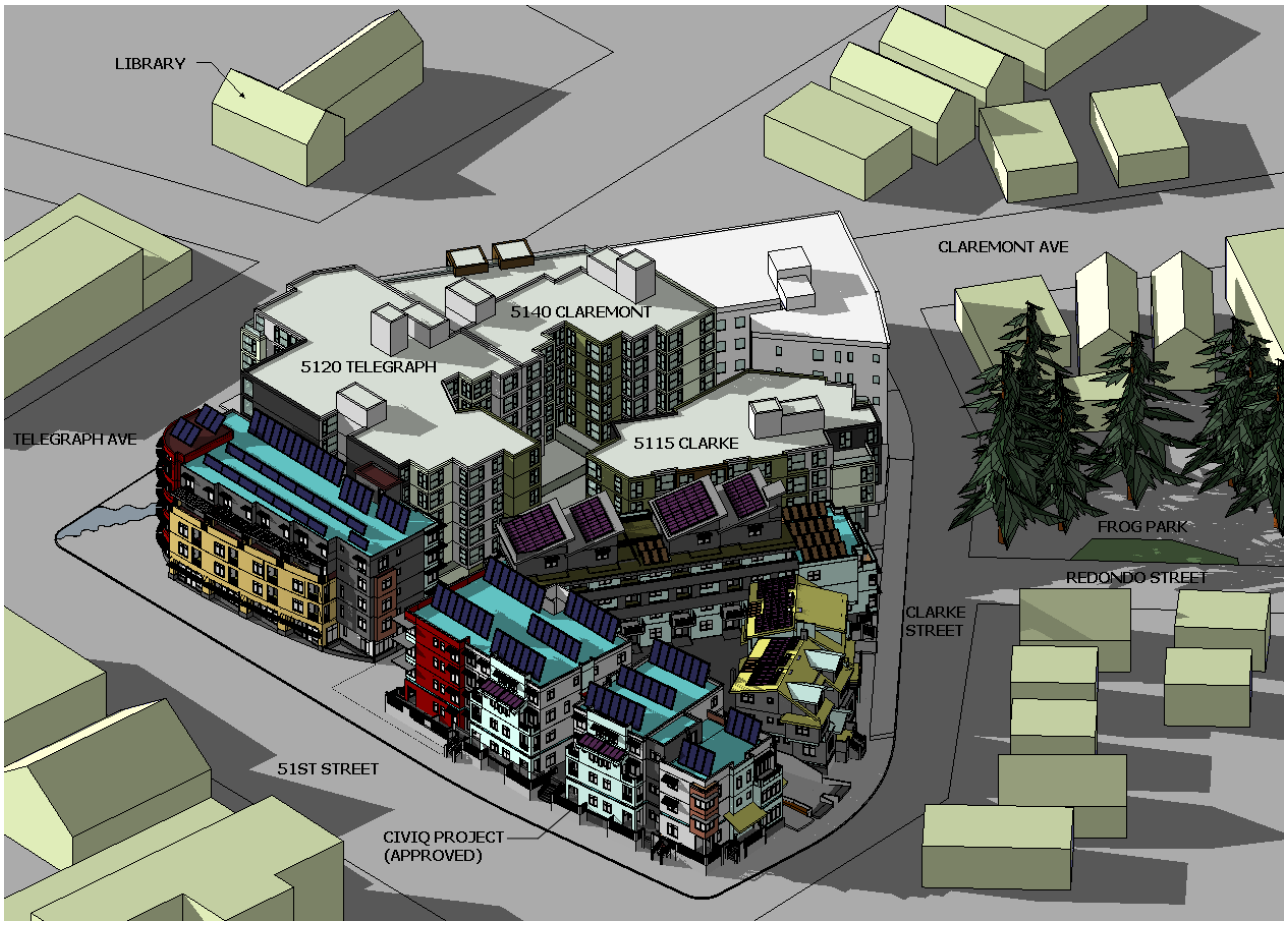

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CREEK SIDE SHADOW STUDY - SUMMER SOLSTICE JUNE 21
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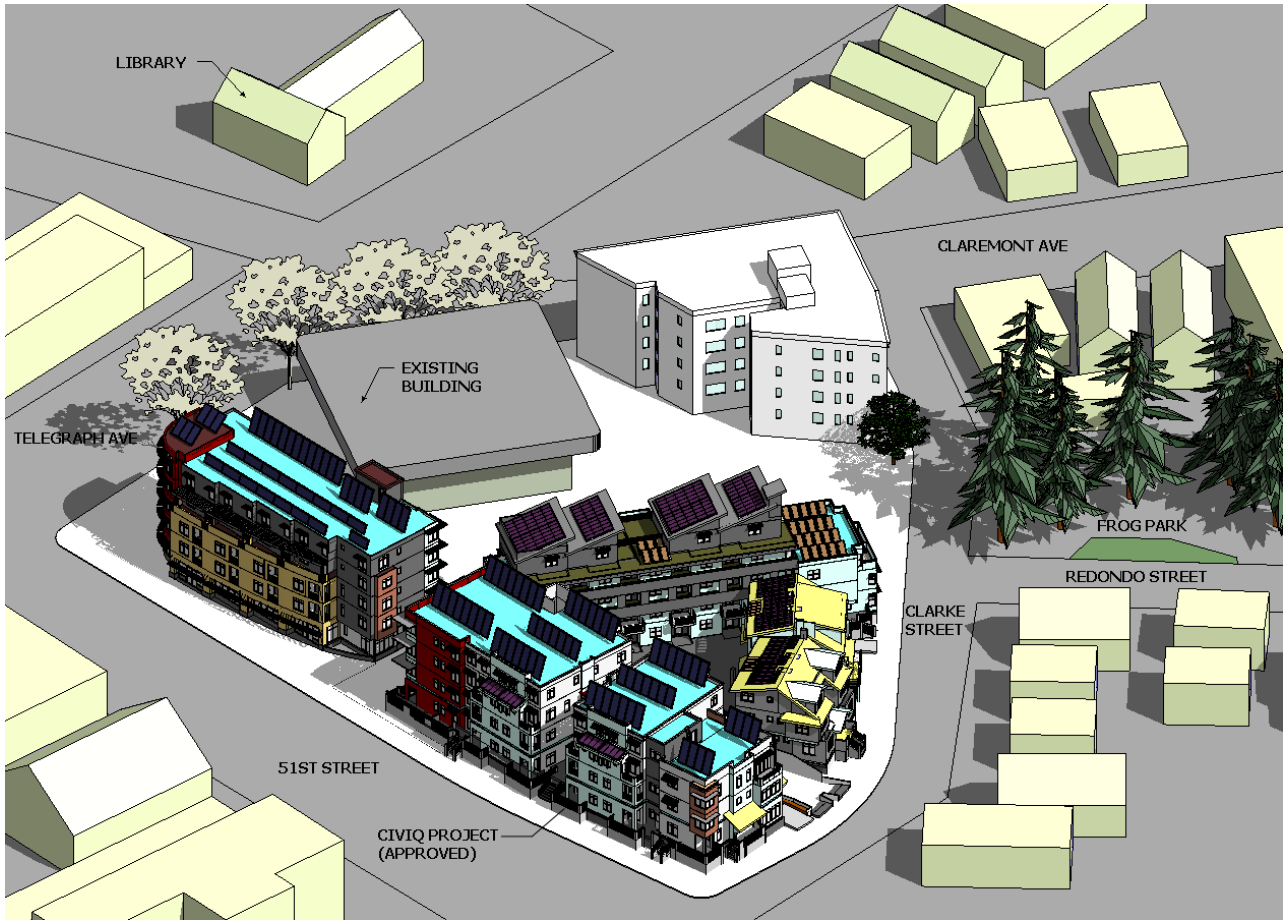

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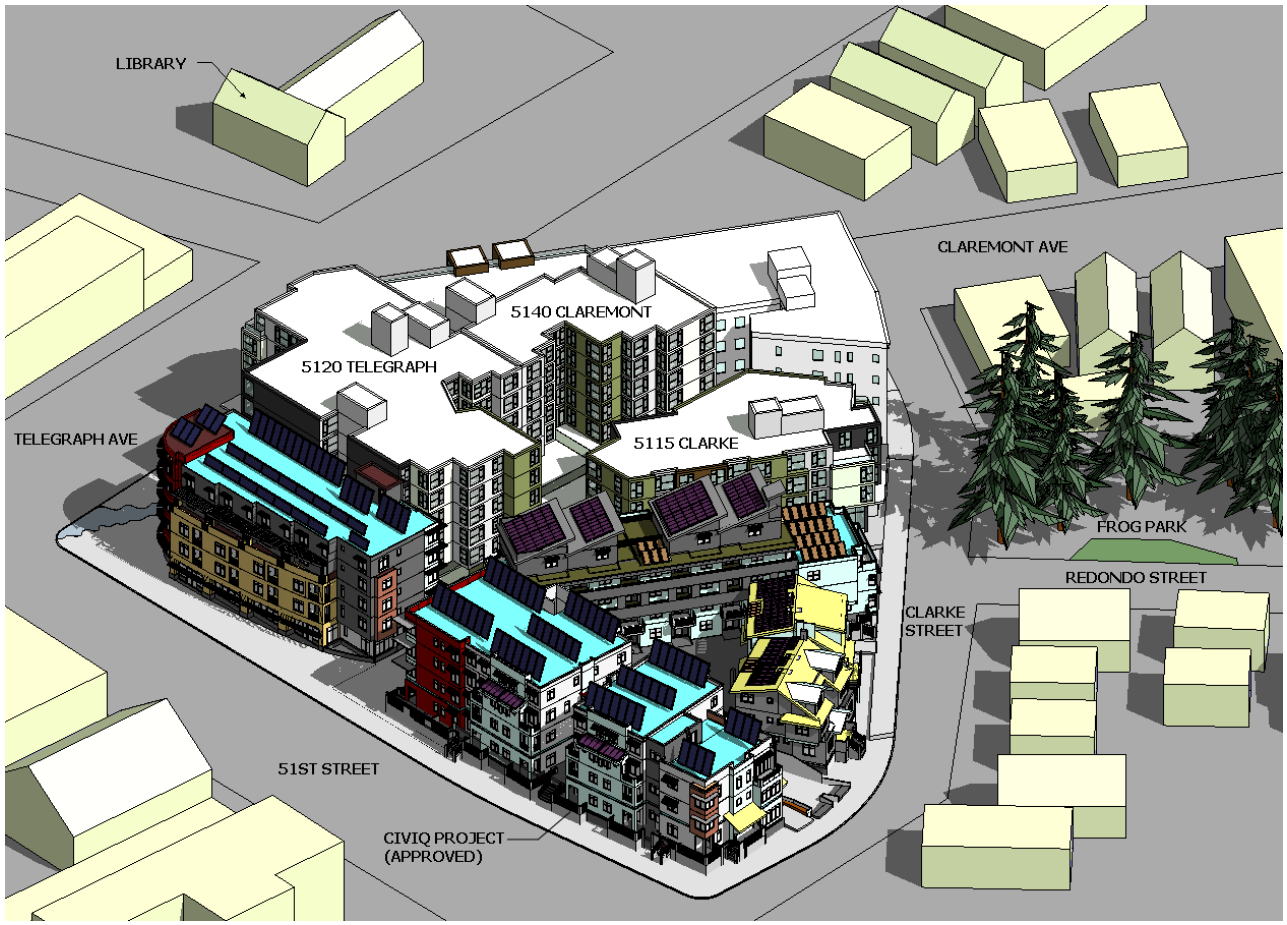

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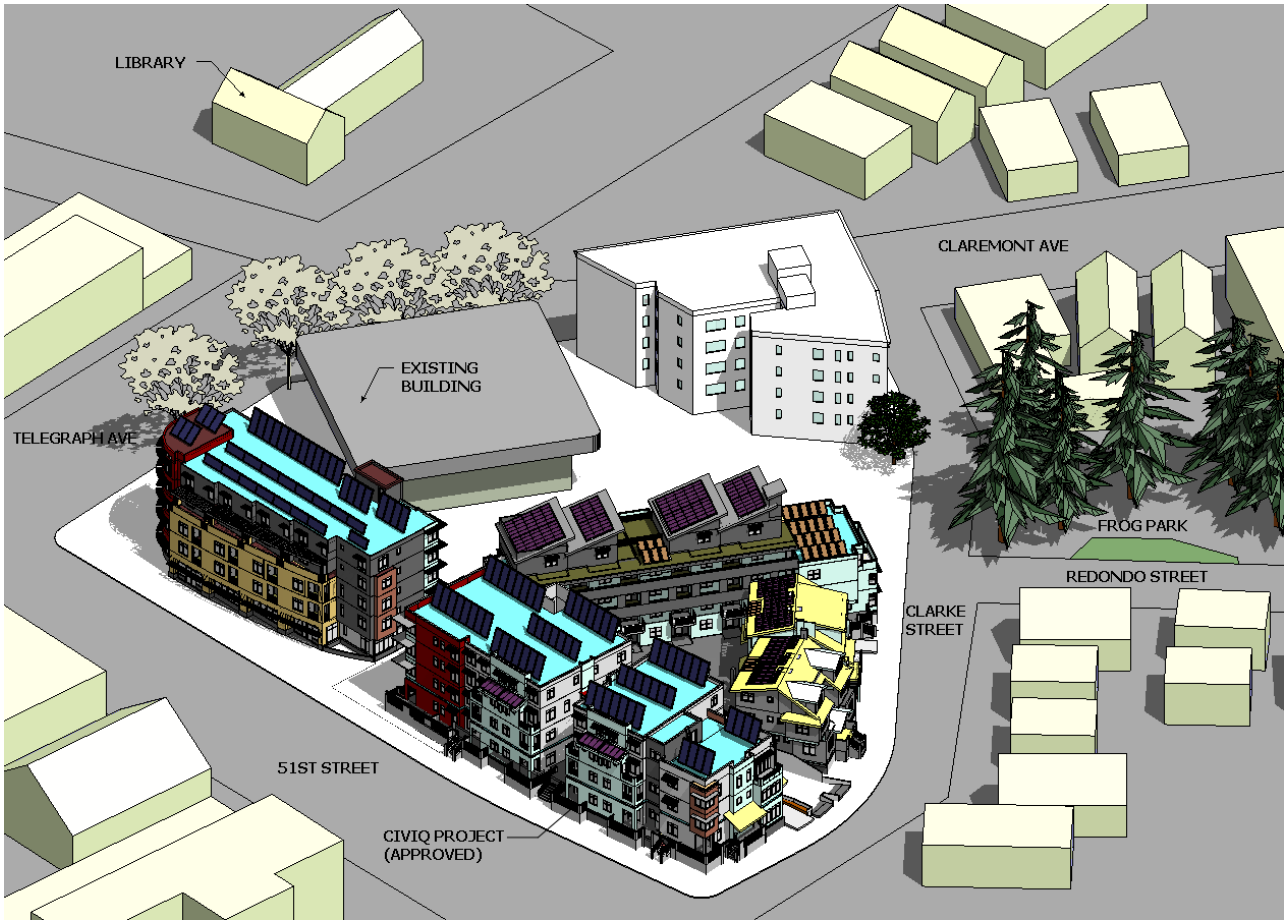

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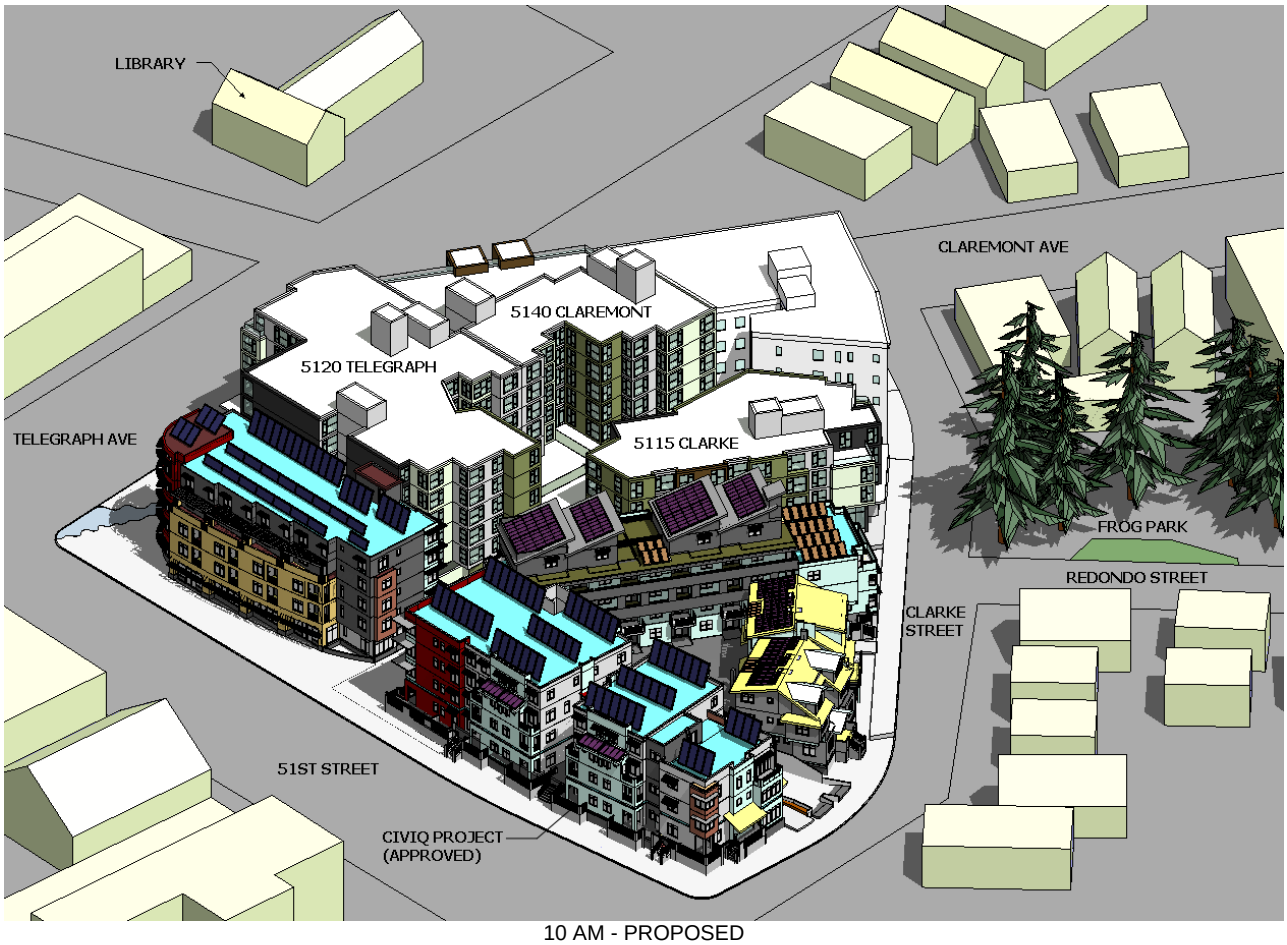

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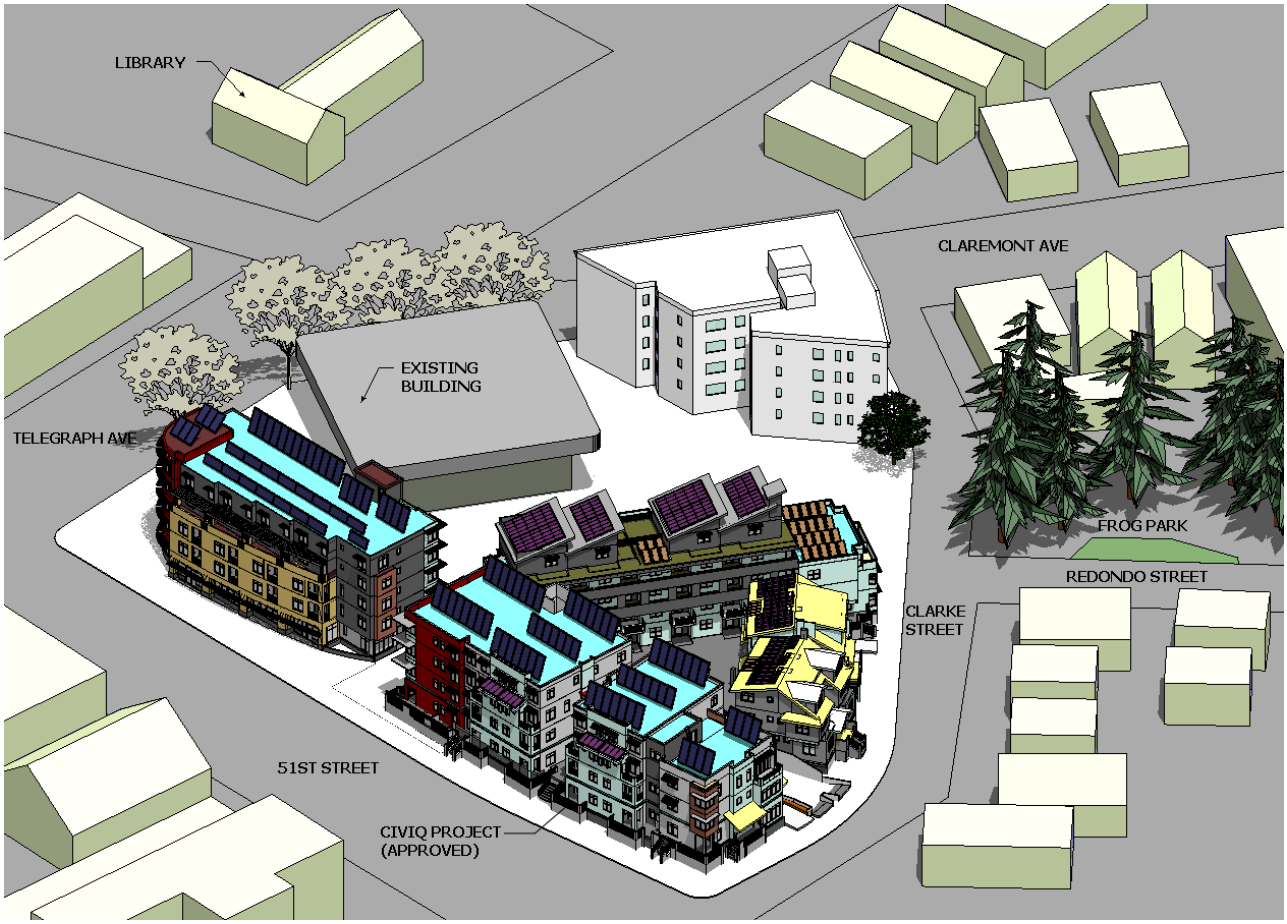

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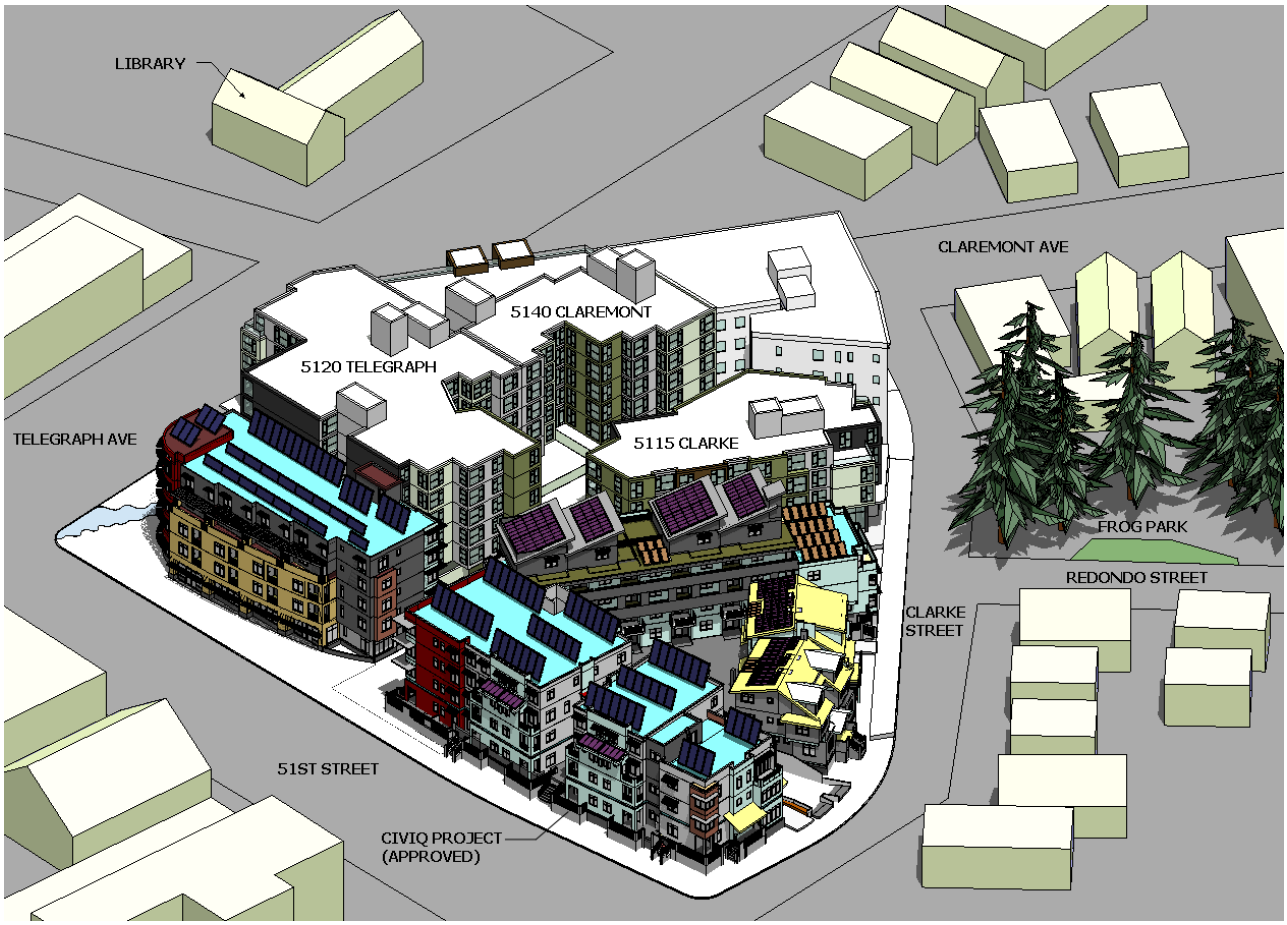

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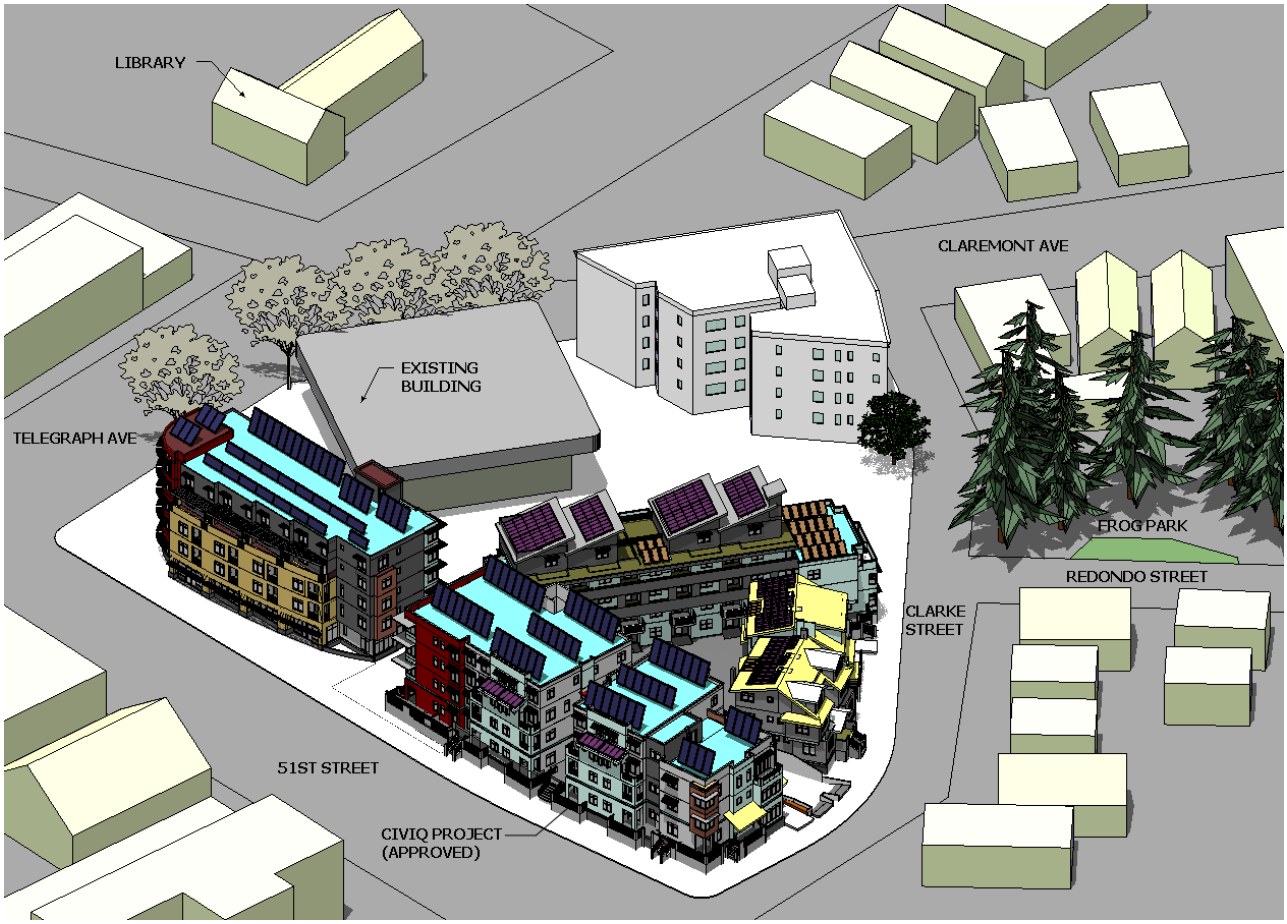

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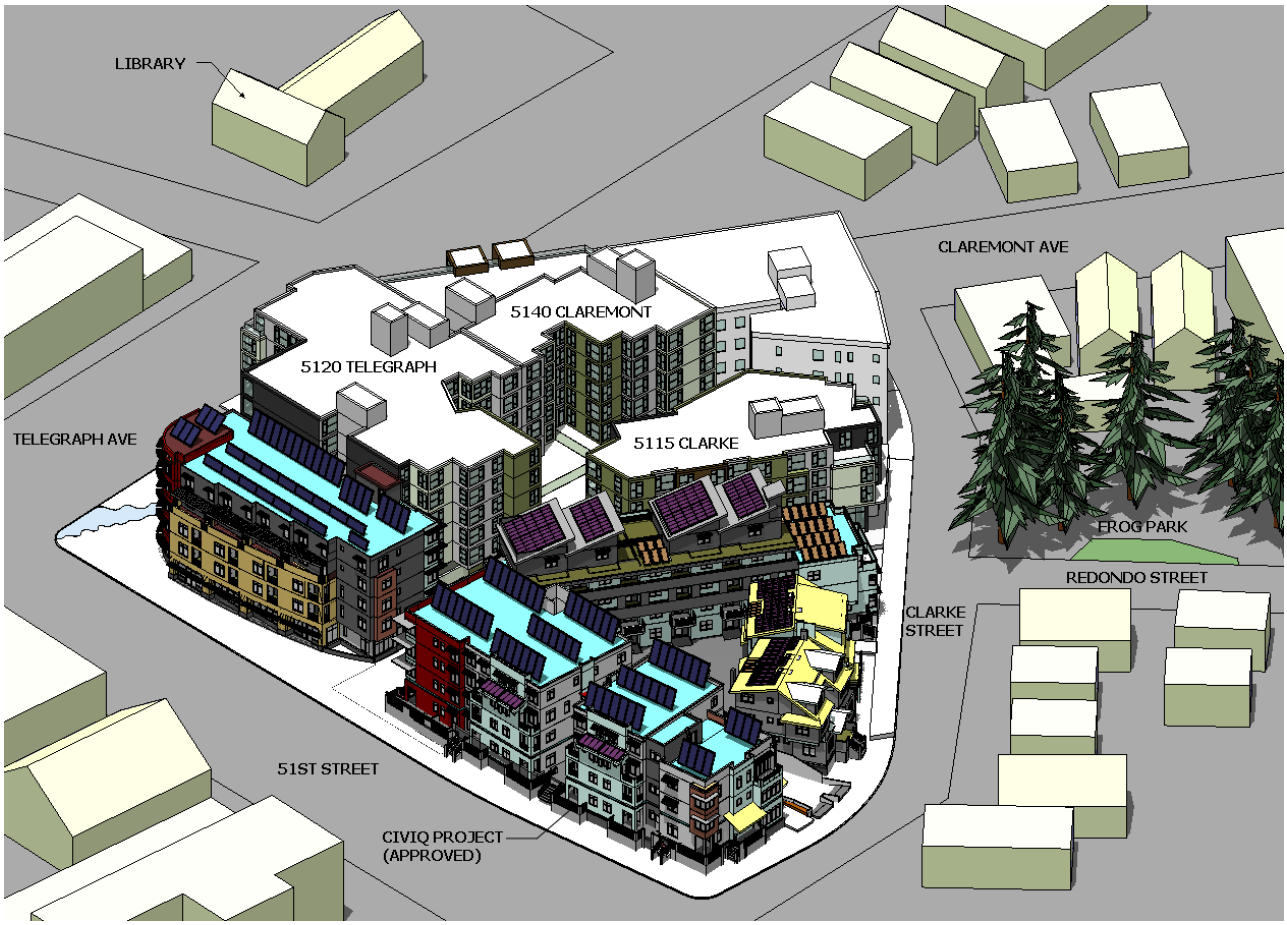

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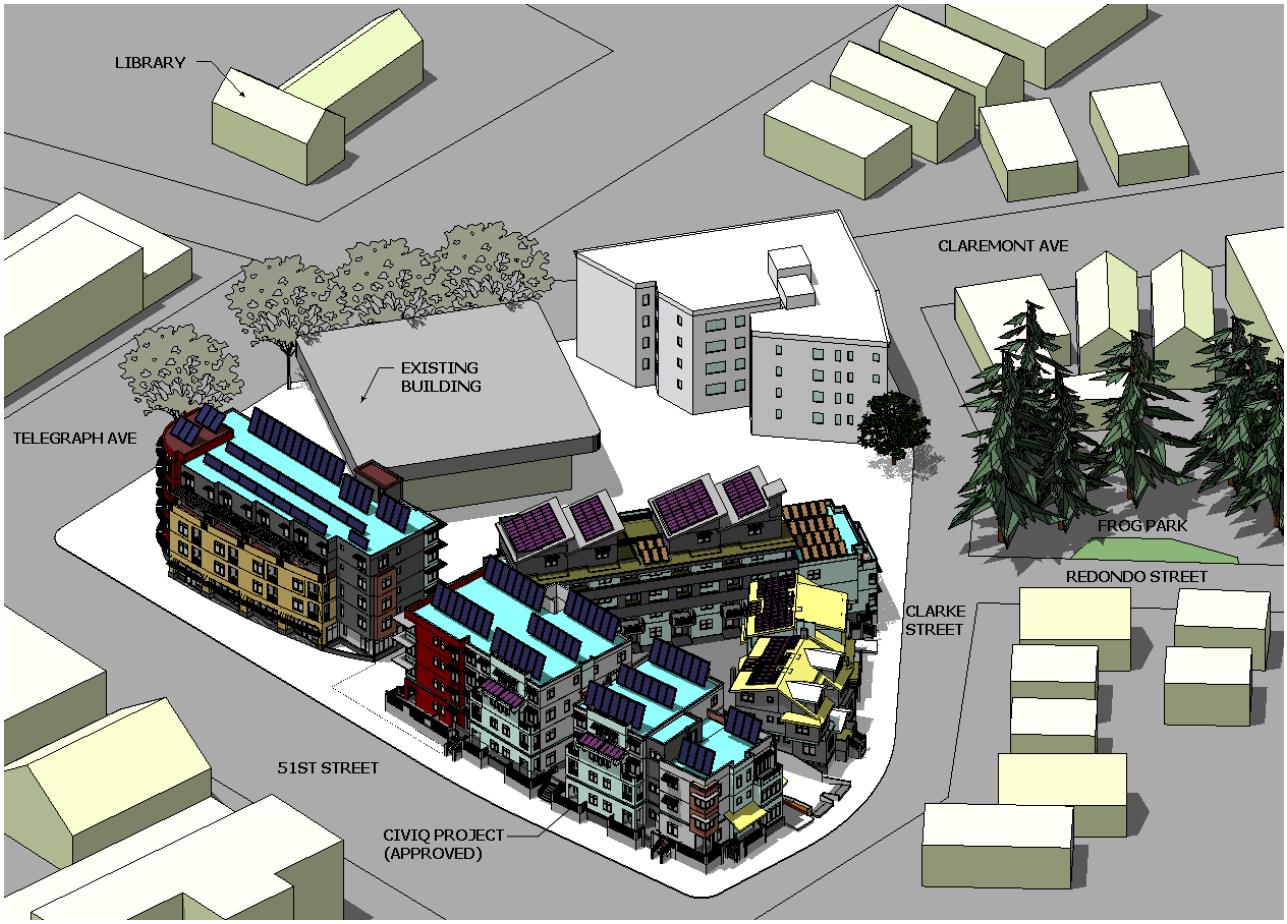

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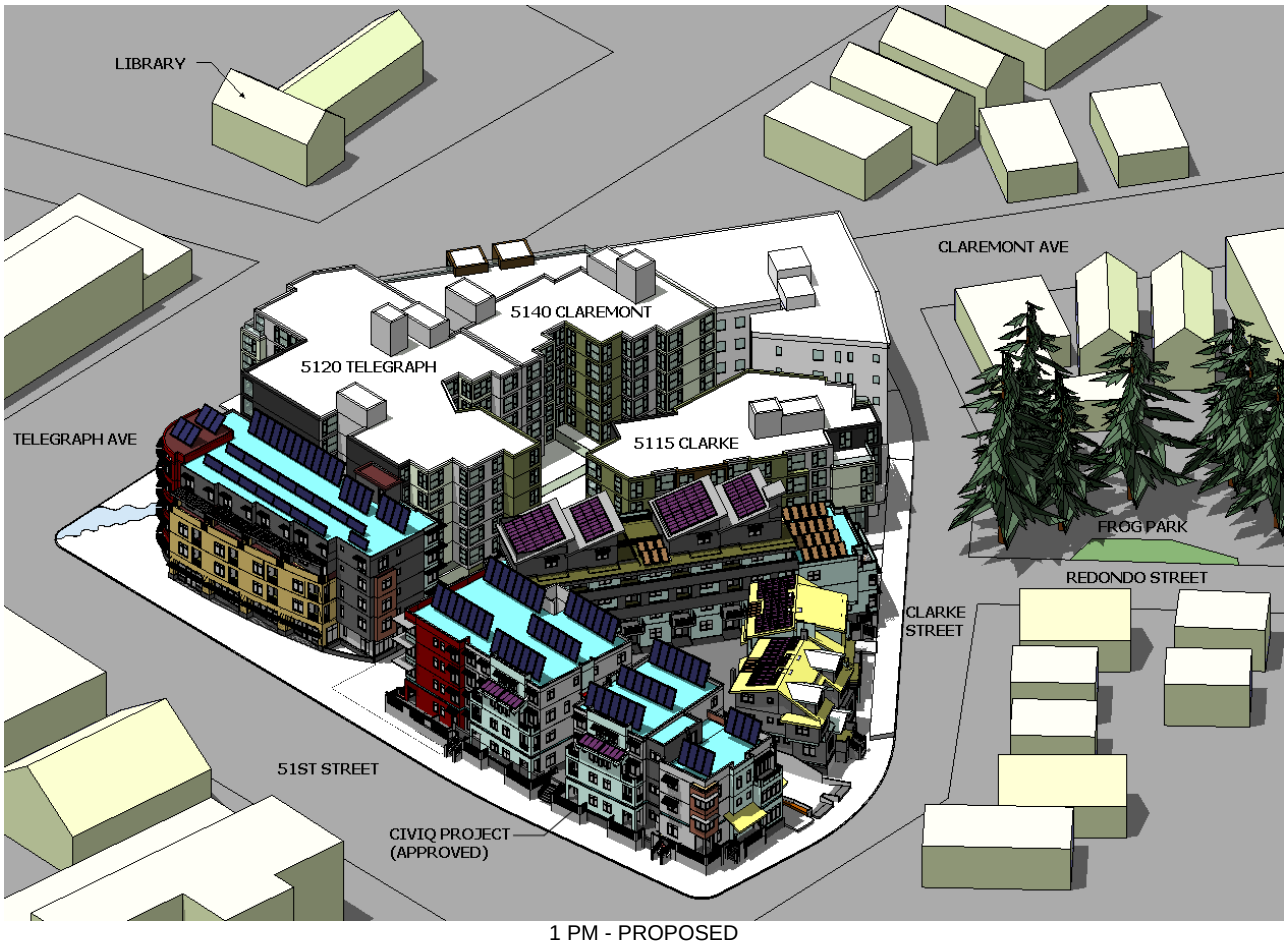

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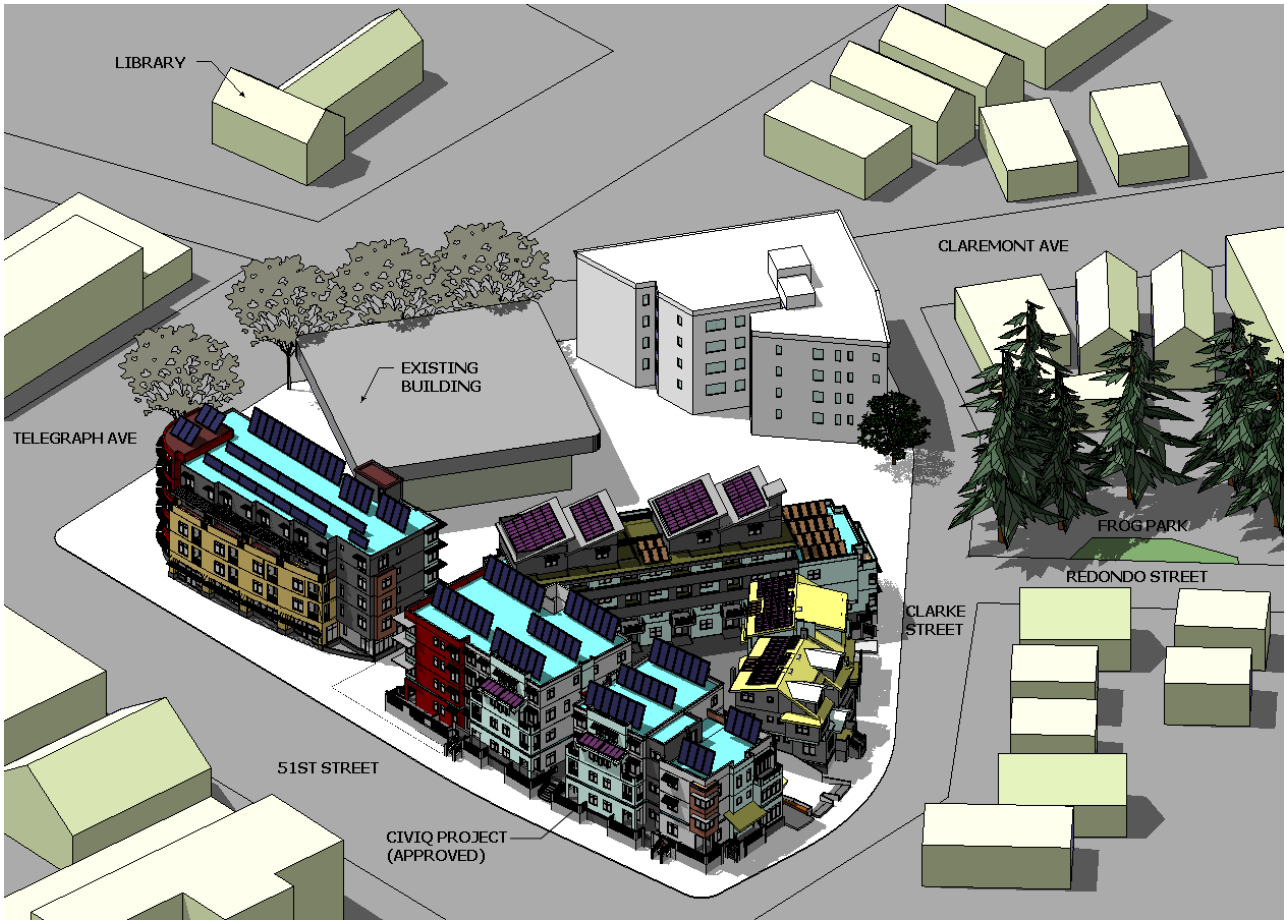

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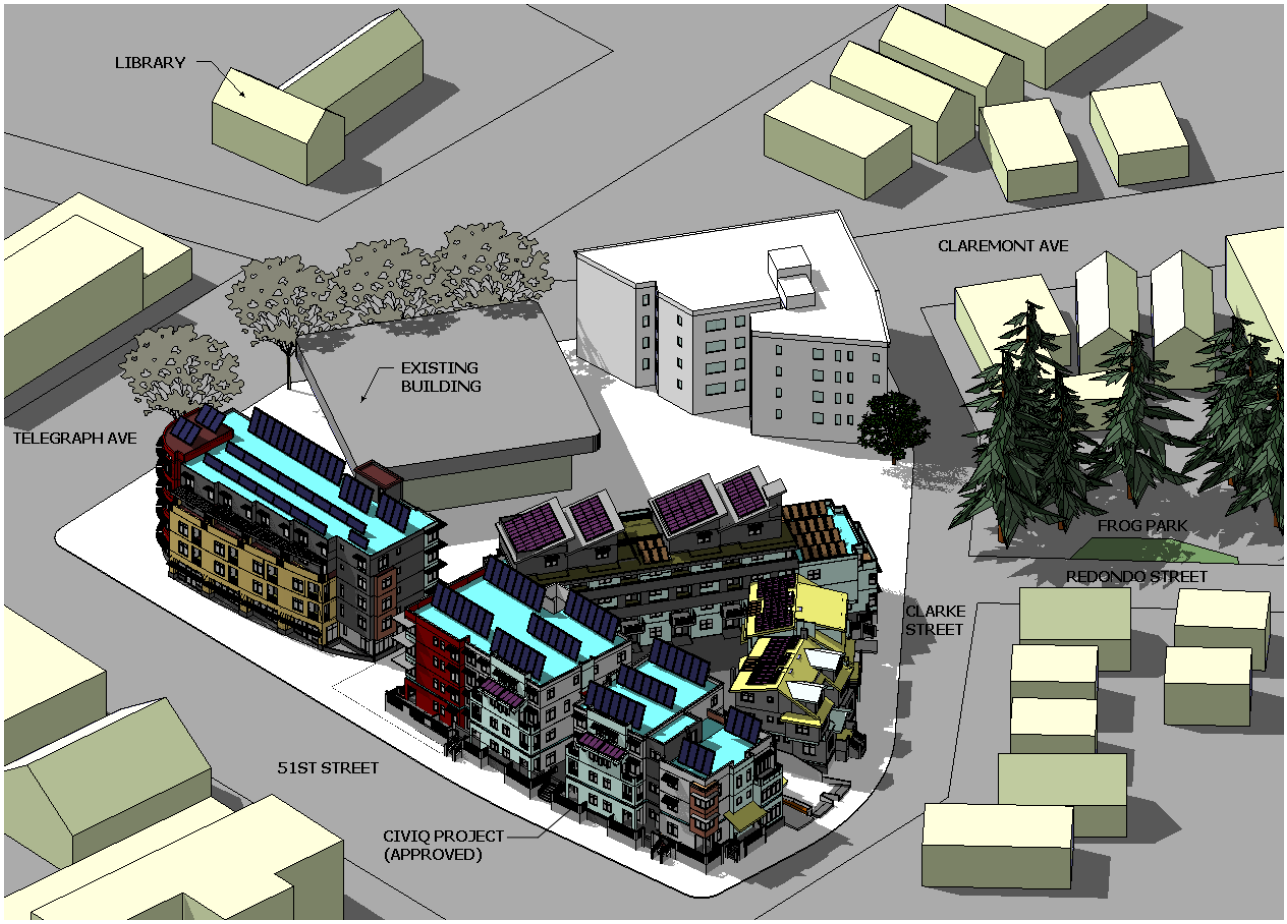

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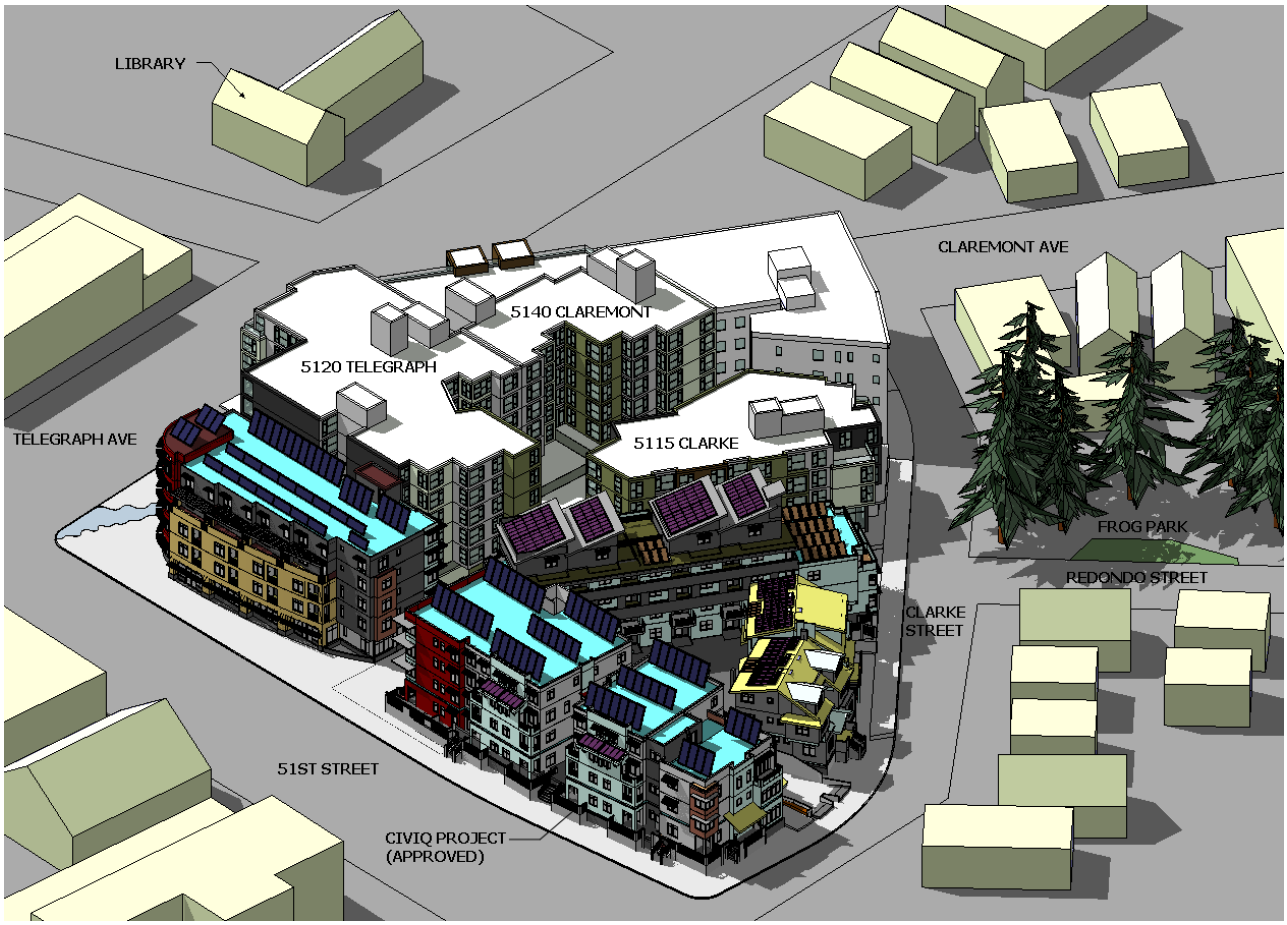

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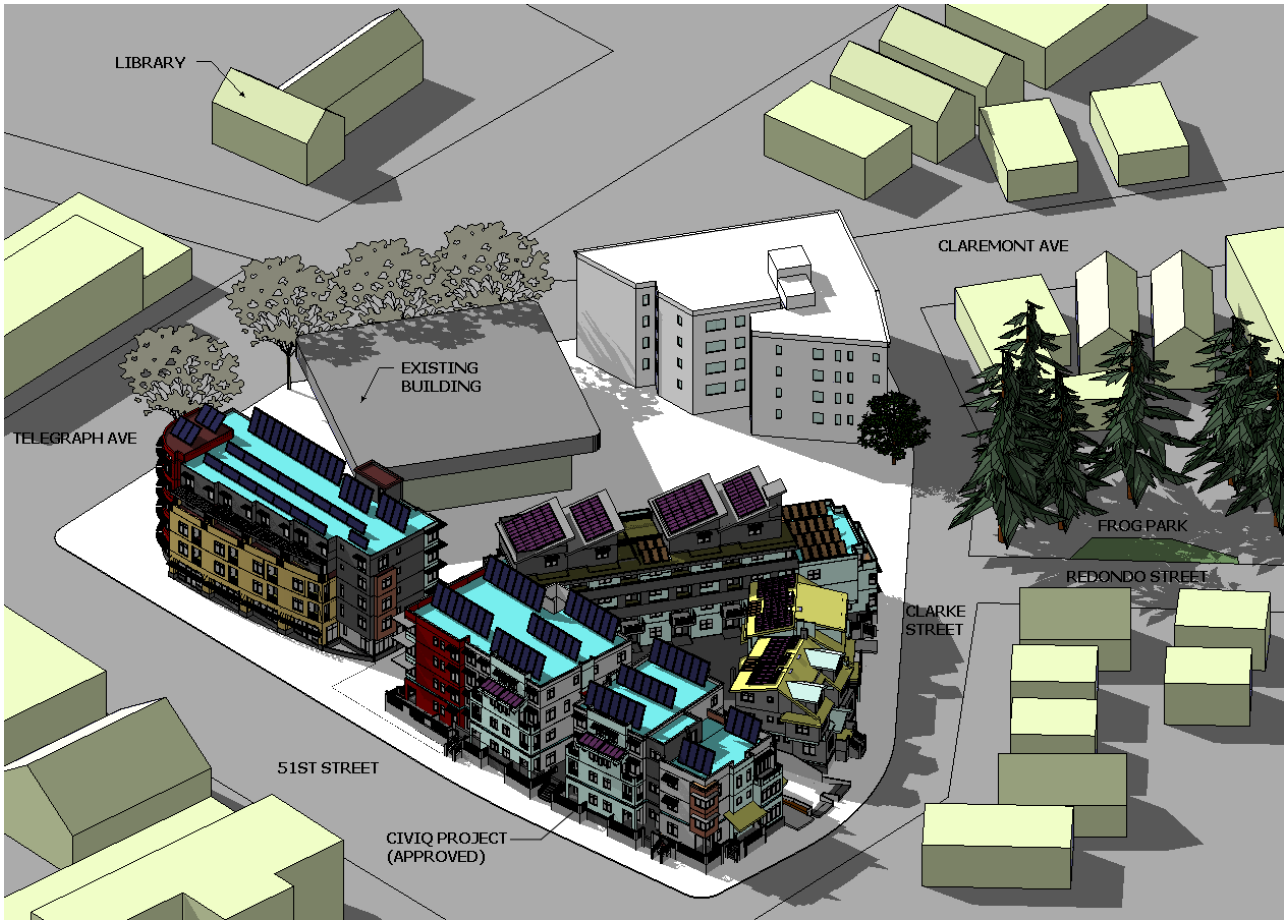

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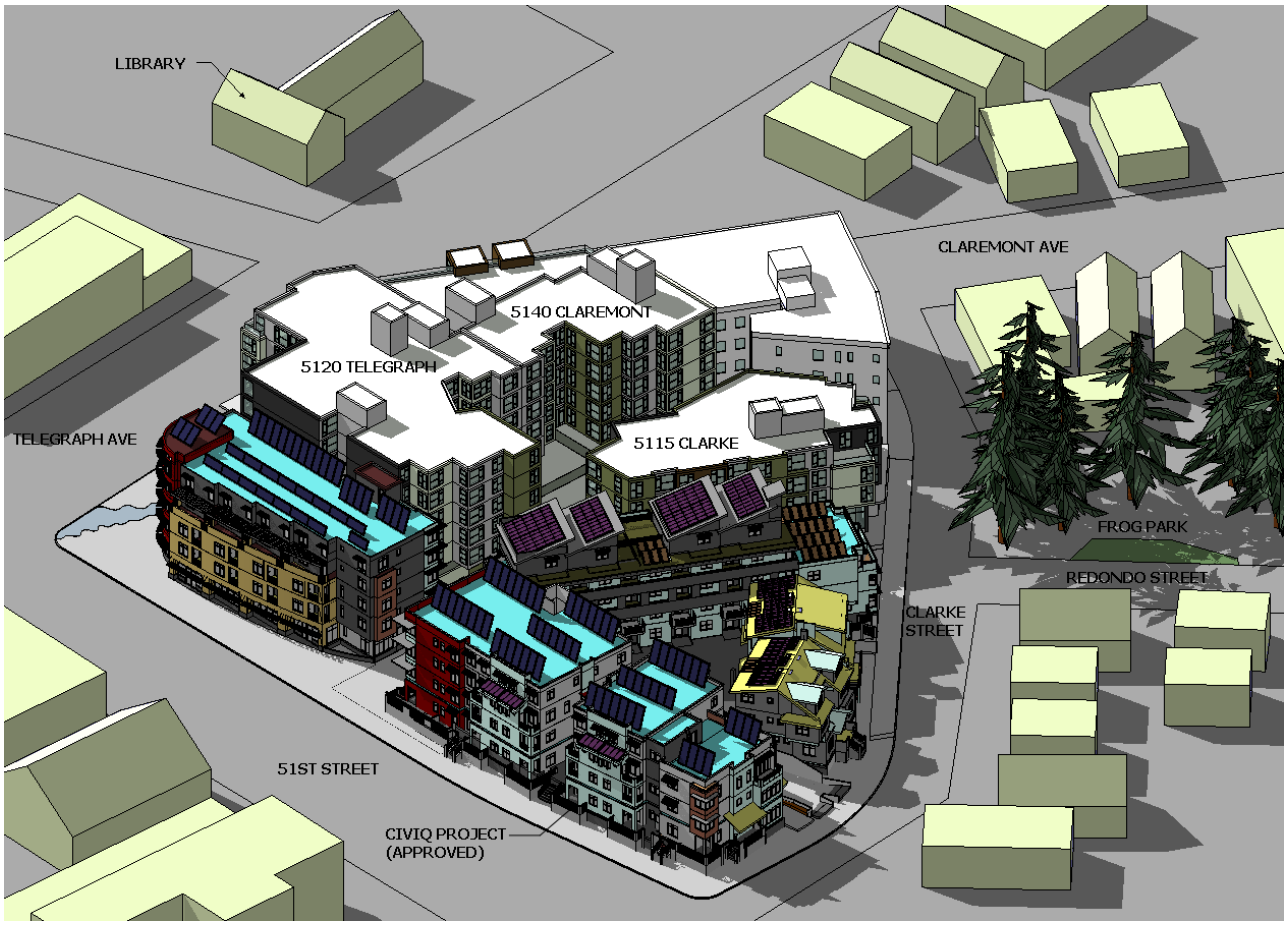

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CREEK SIDE SHADOW STUDY - WINTER SOLSTICE DECEMBER 22
OVERALL VIEW FROM SOUTHEAST LOOKING NORTHWEST

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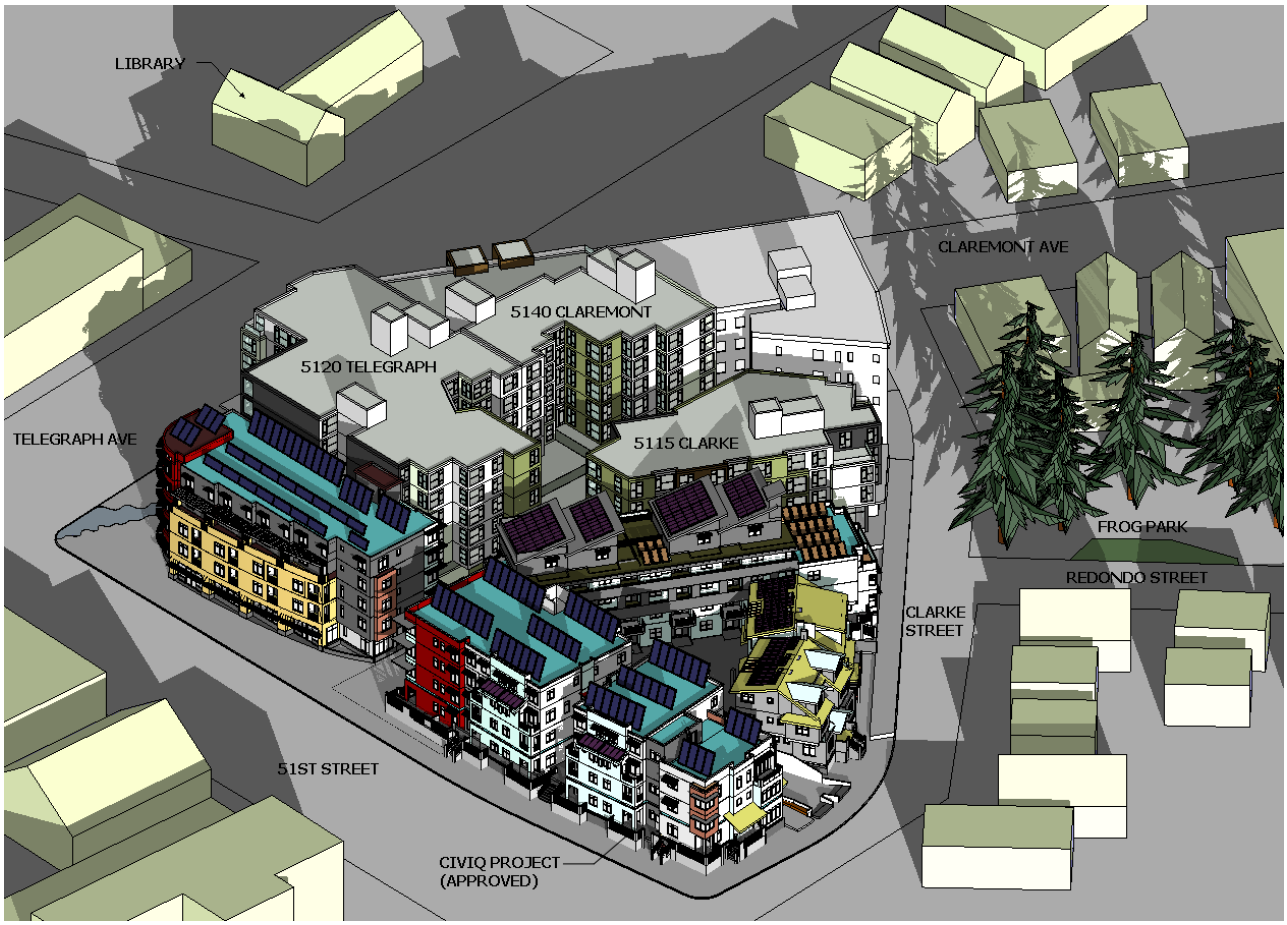

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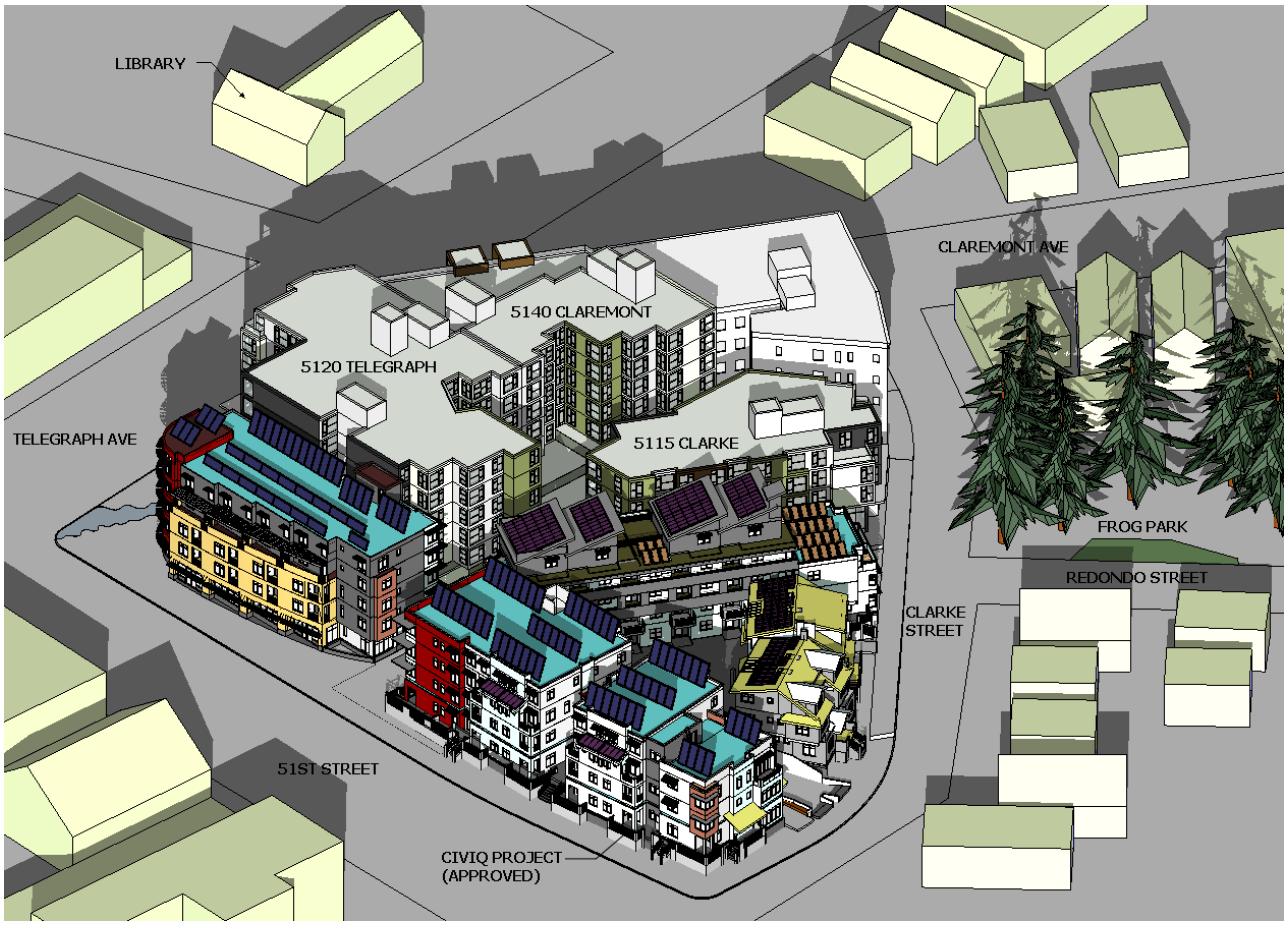

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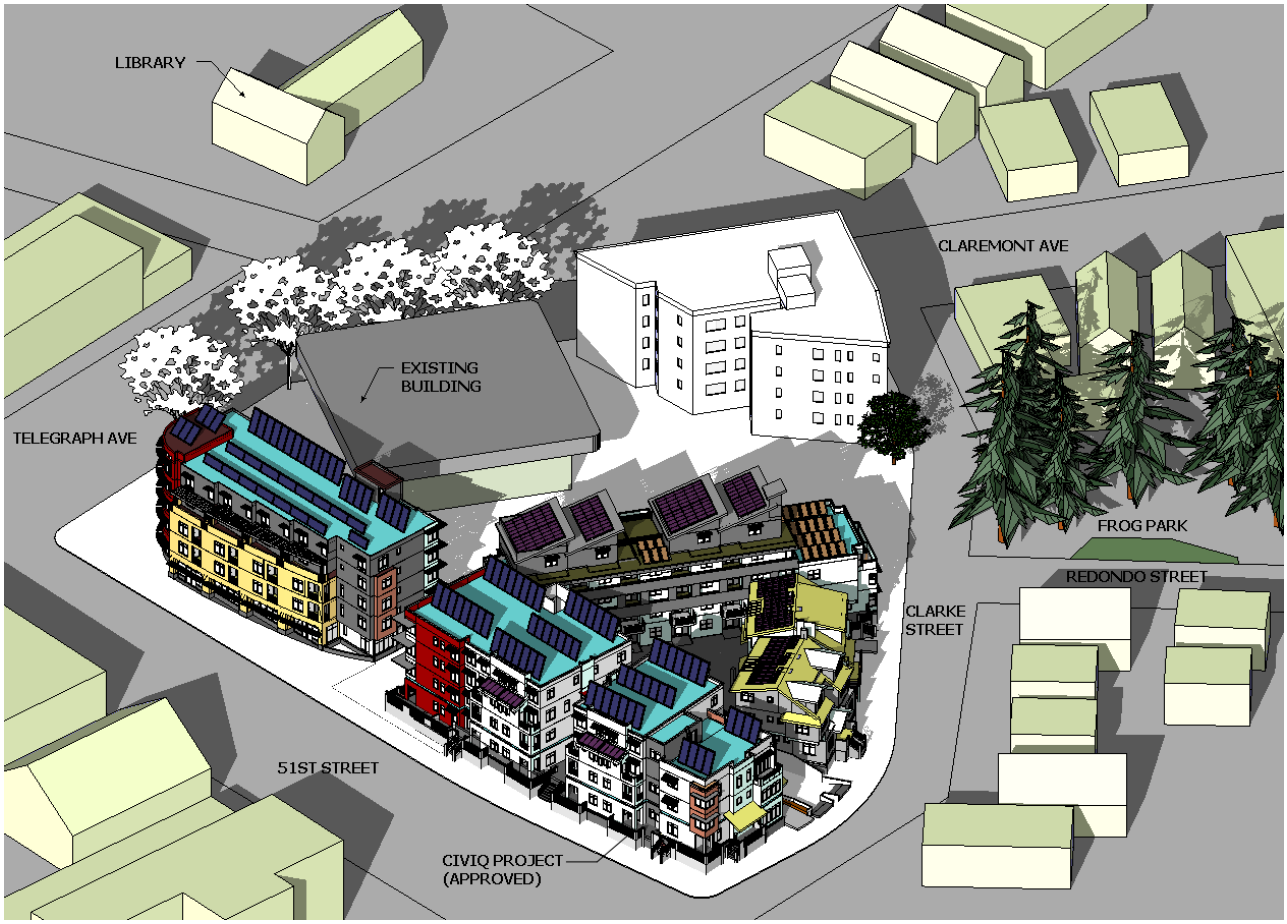

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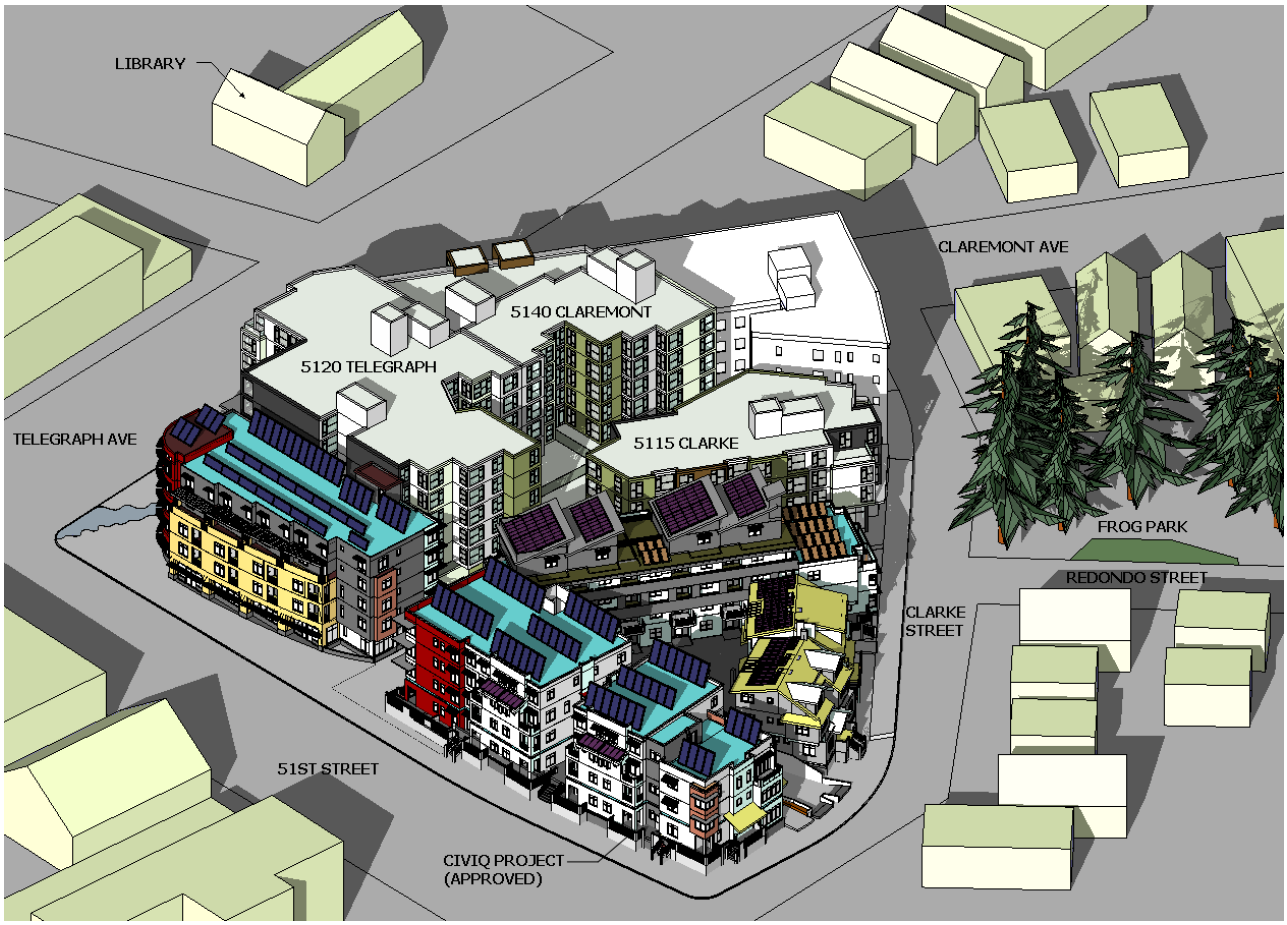

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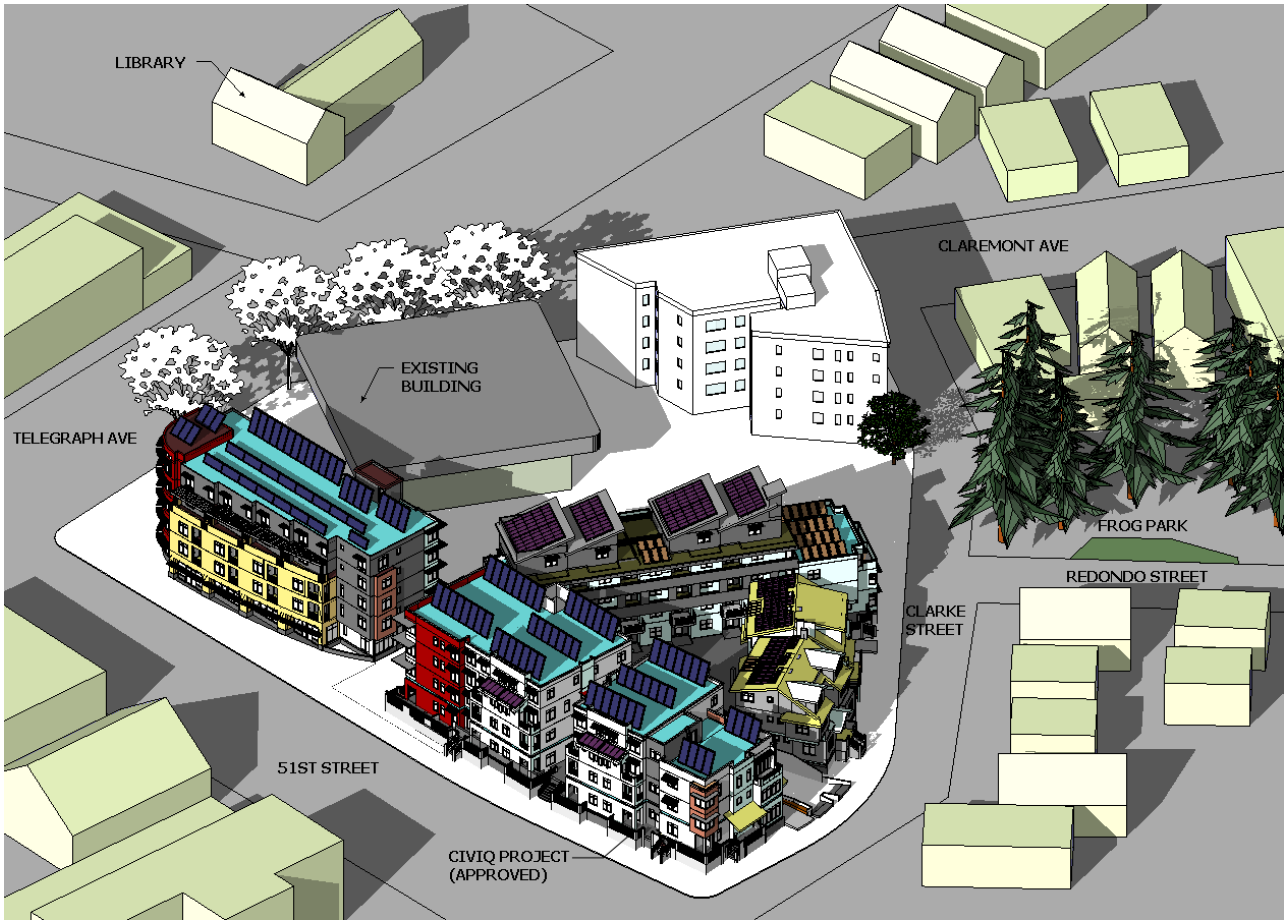

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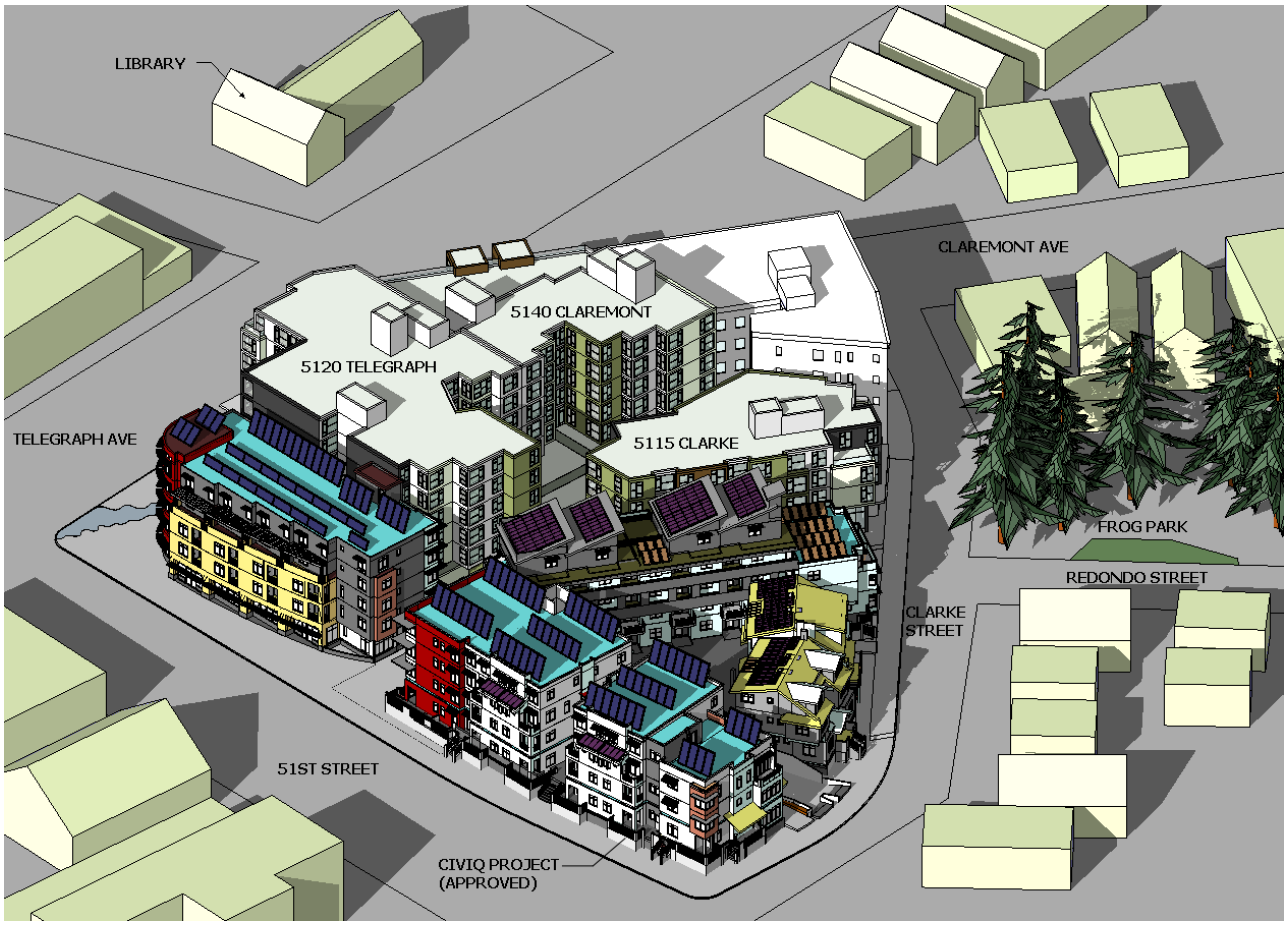

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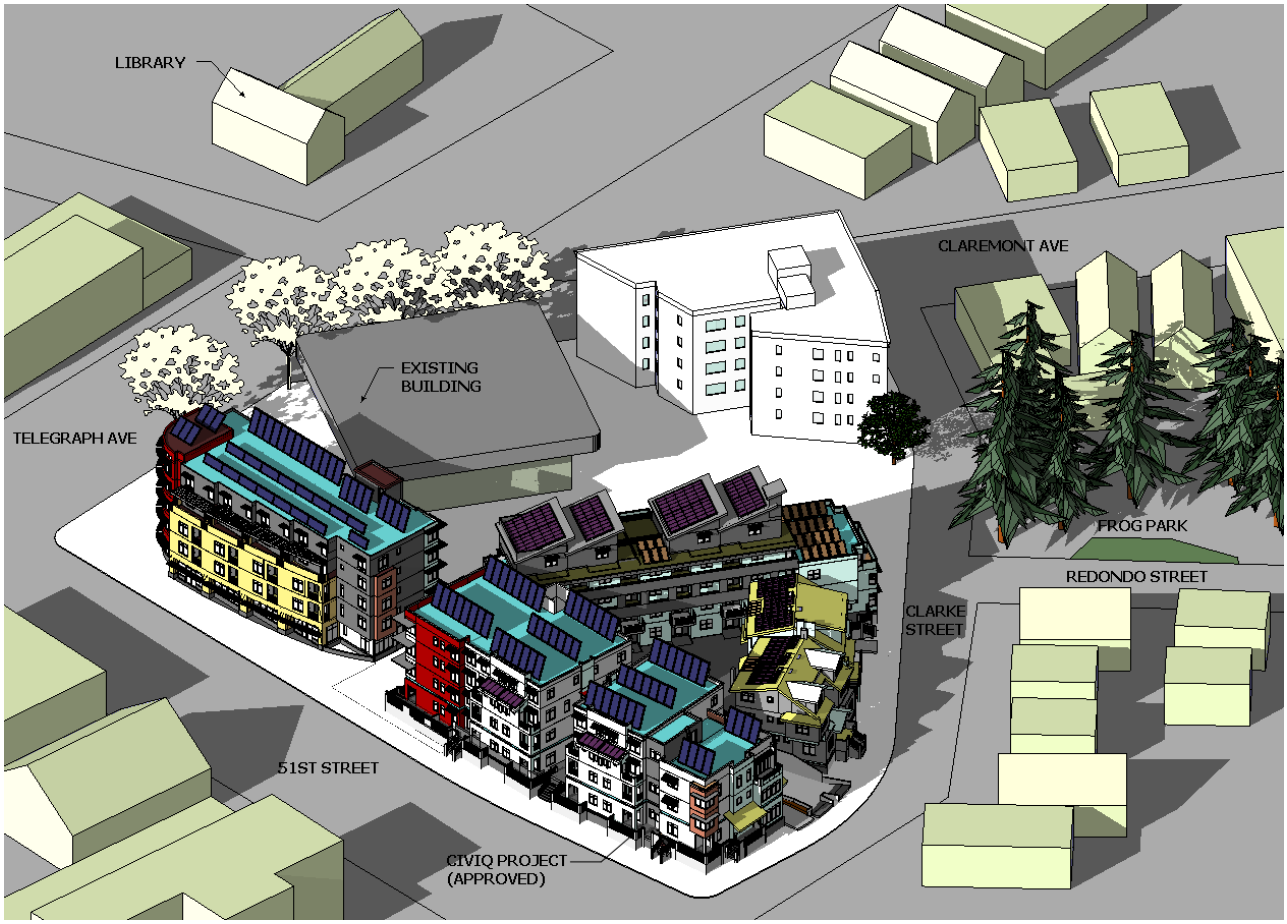
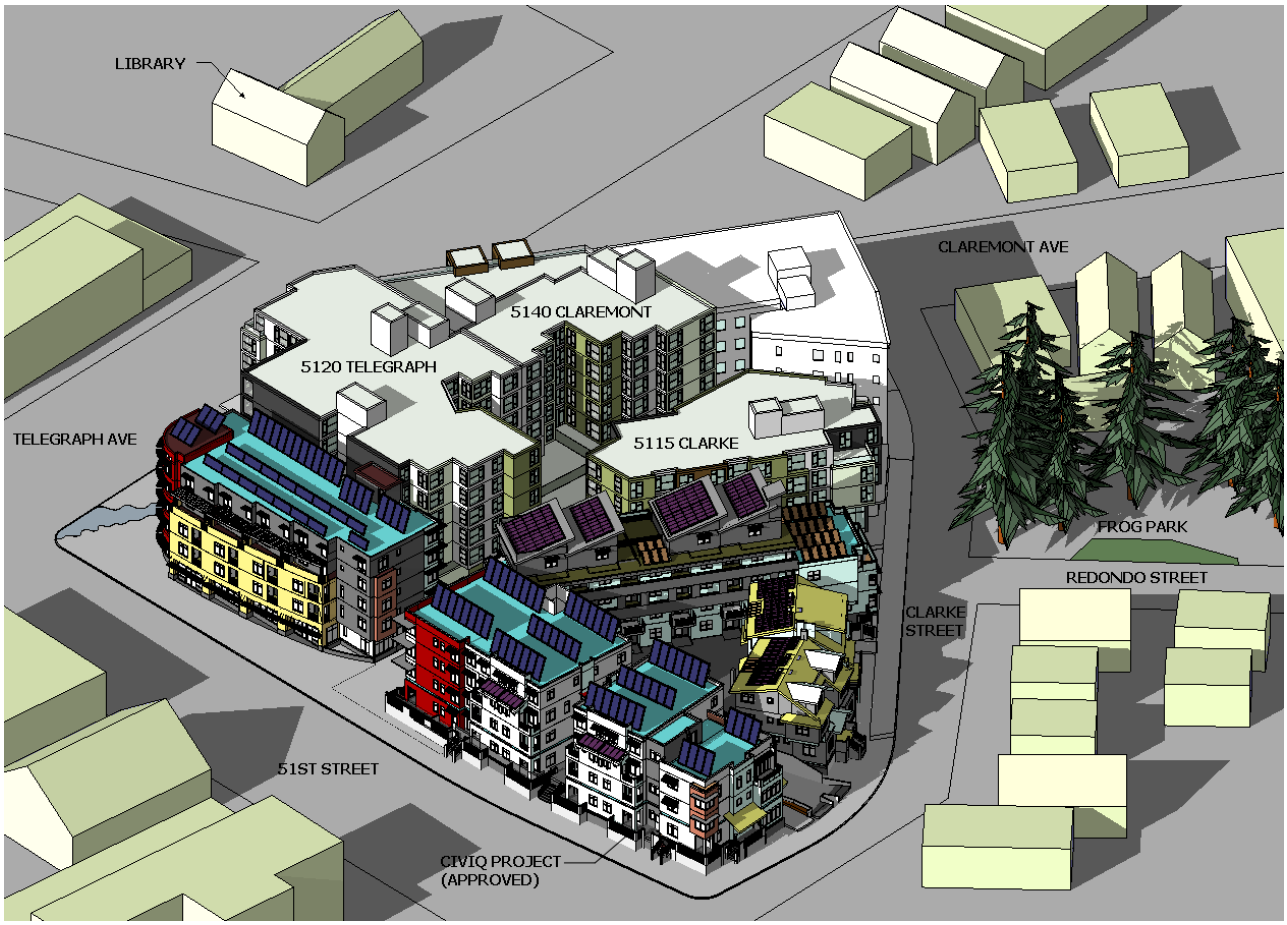
CREEK SIDE SHADOW STUDY - WINTER SOLSTICE DECEMBER 22
OVERALL VIEW FROM SOUTHEAST LOOKING NORTHWEST

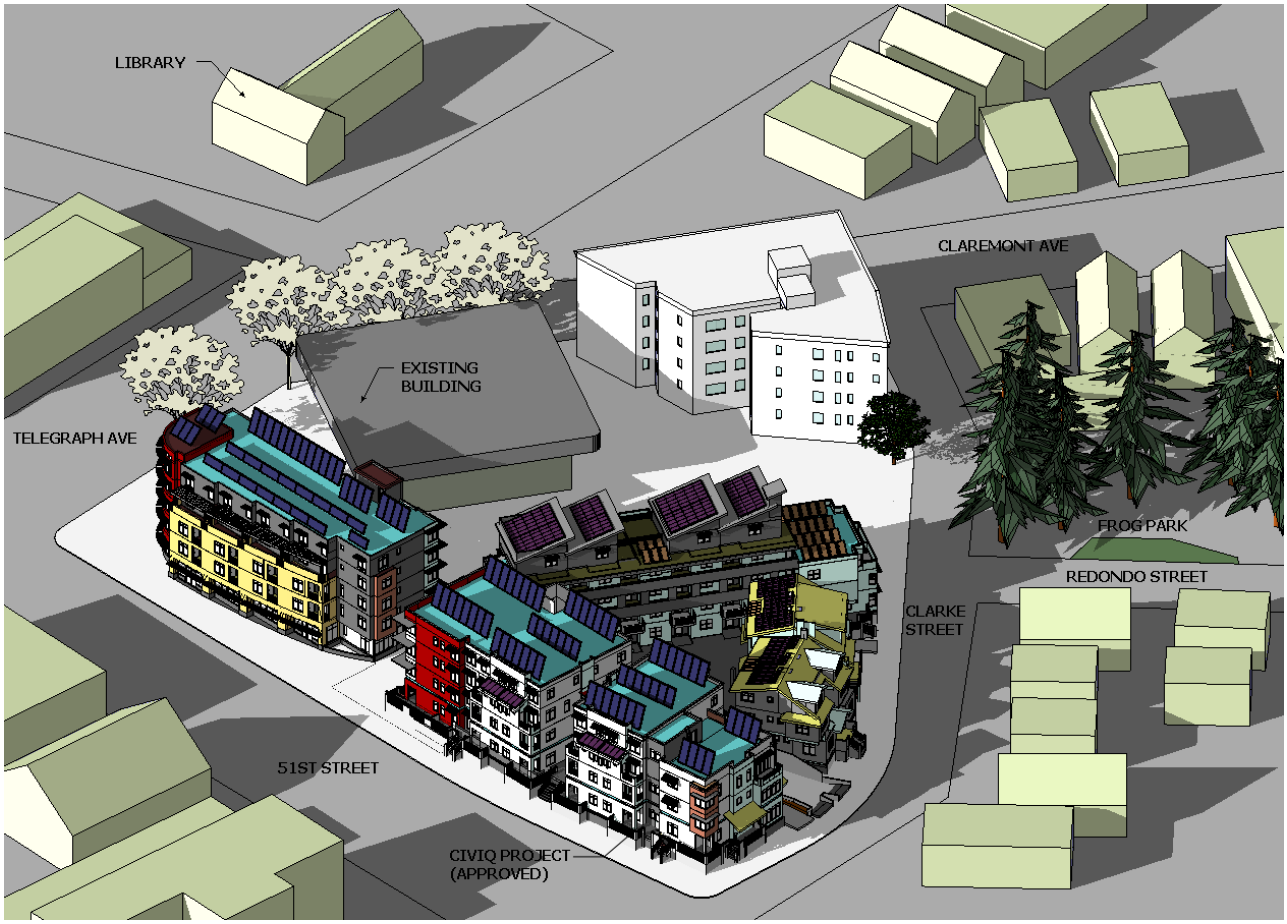


1 PM - EXISTING

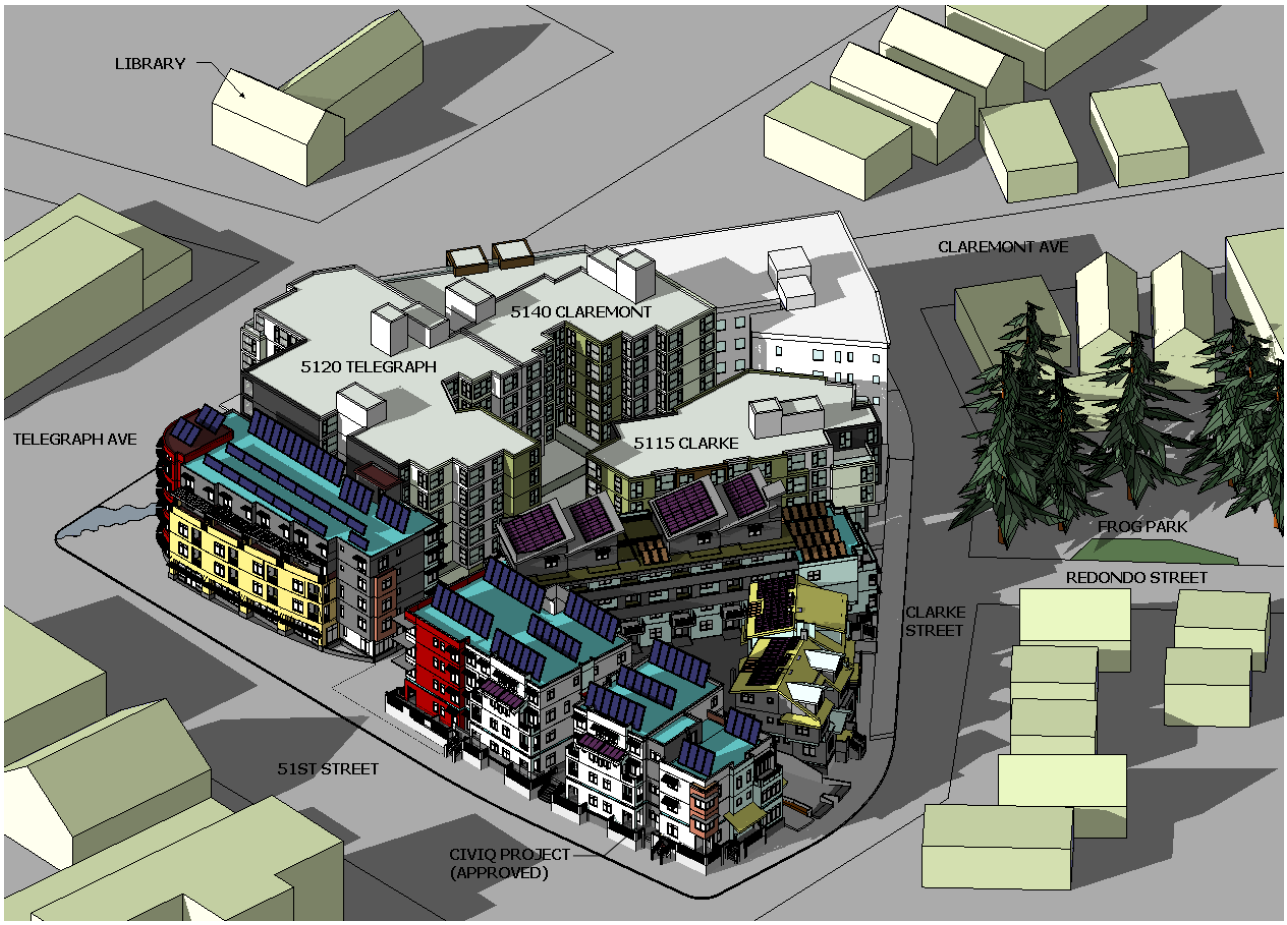


1 PM - PROPOSED

CREEK SIDE SHADOW STUDY - WINTER SOLSTICE DECEMBER 22
OVERALL VIEW FROM SOUTHEAST LOOKING NORTHWEST

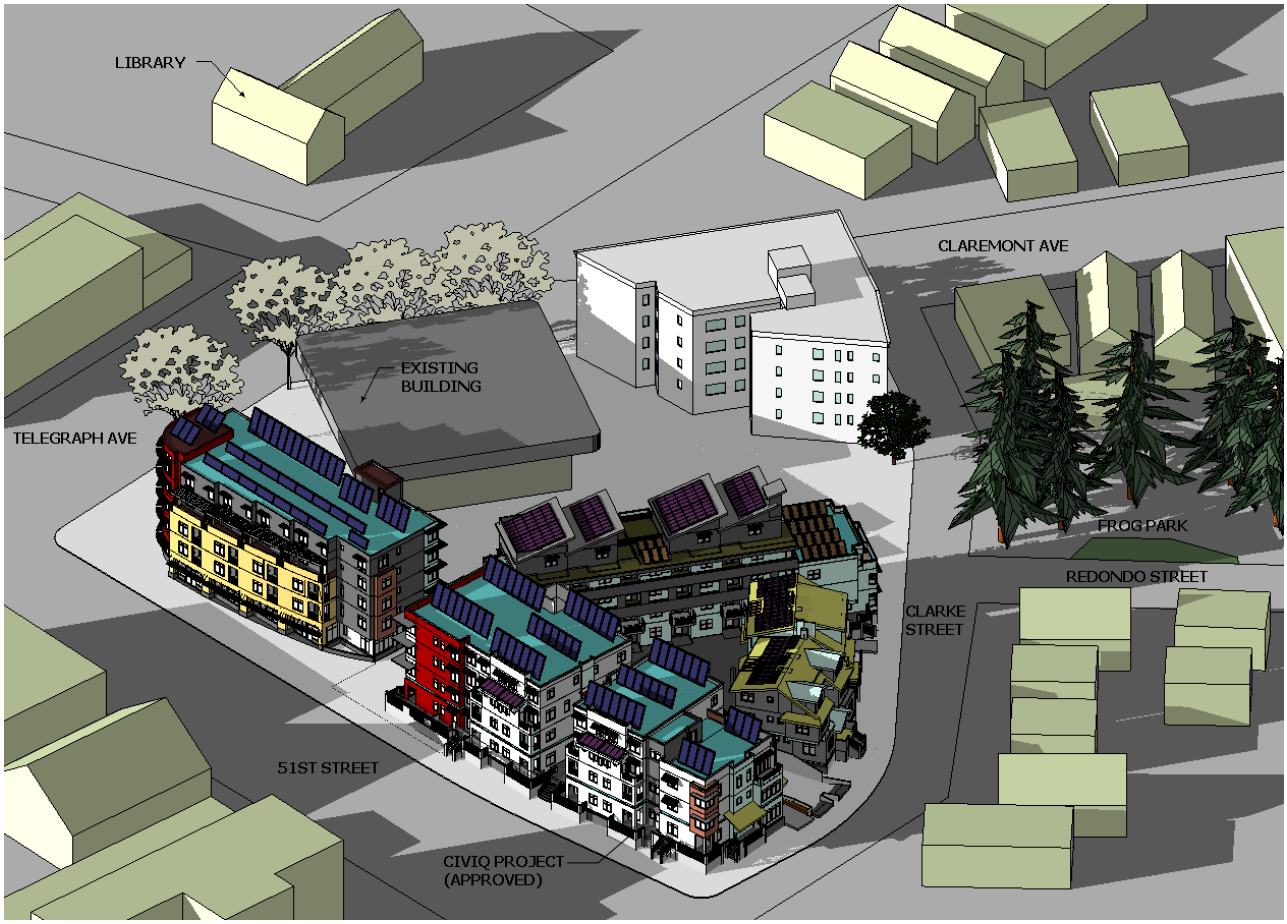


2 PM - EXISTING

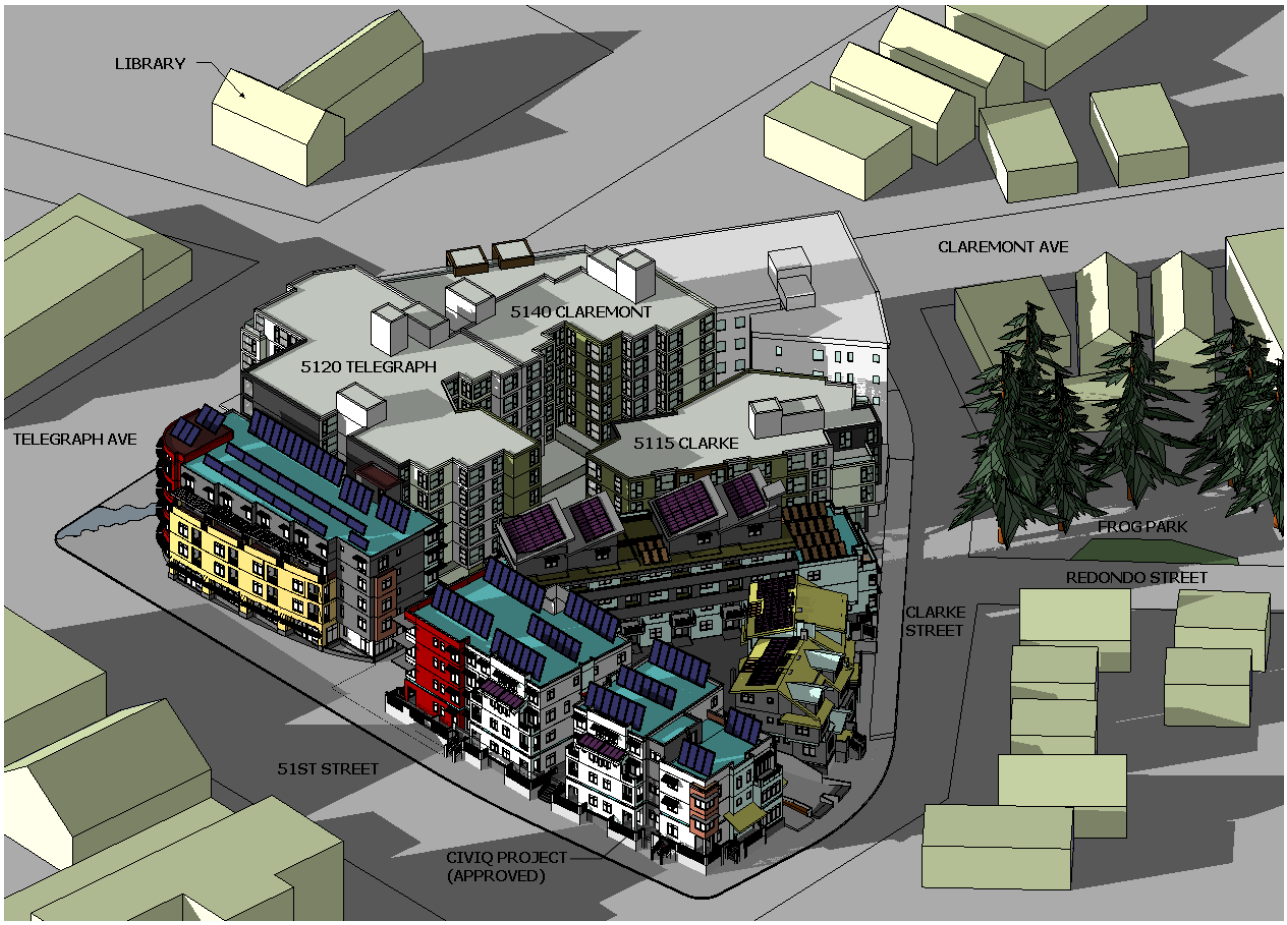


2 PM - PROPOSED

CREEK SIDE SHADOW STUDY - WINTER SOLSTICE DECEMBER 22
OVERALL VIEW FROM SOUTHEAST LOOKING NORTHWEST

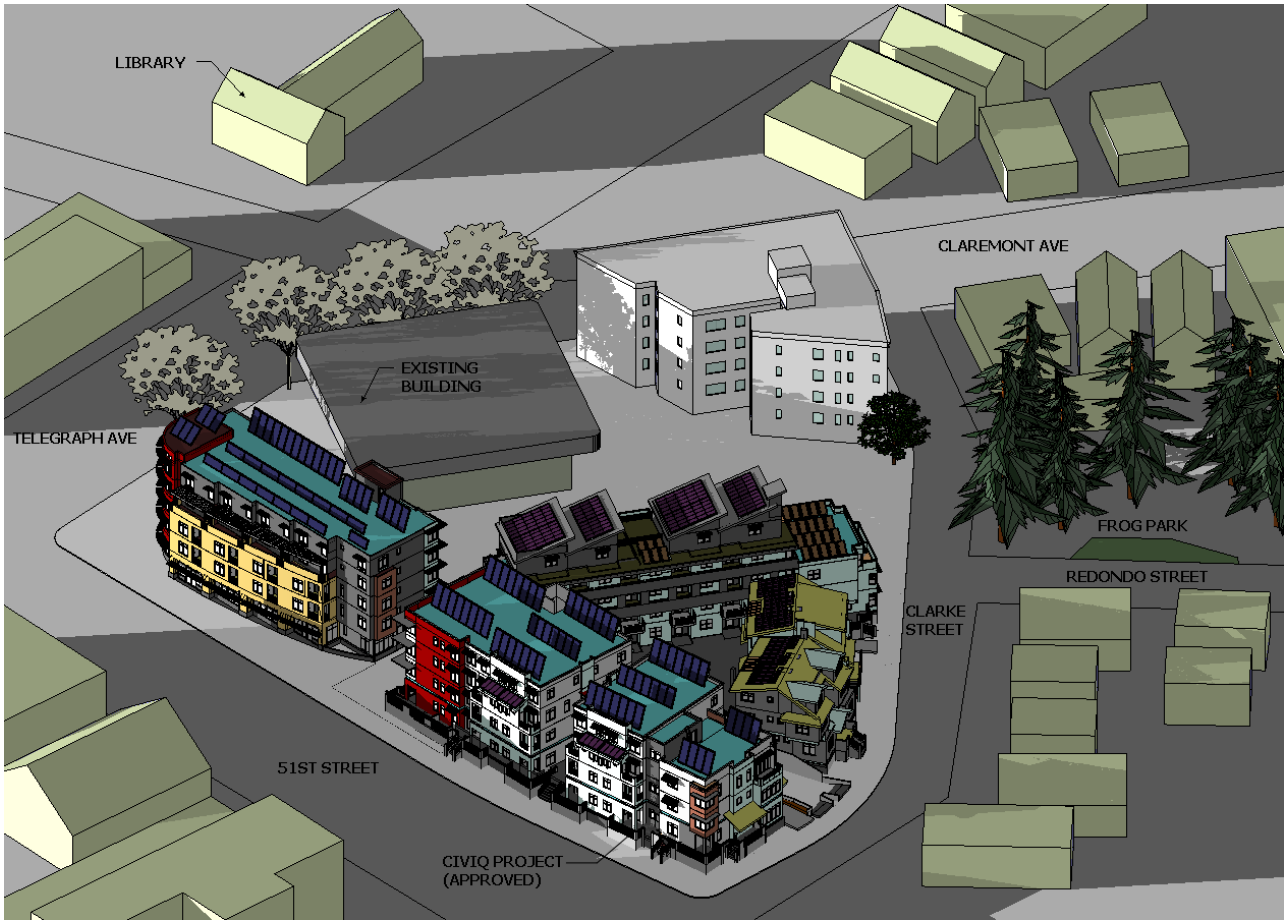


3 PM - EXISTING

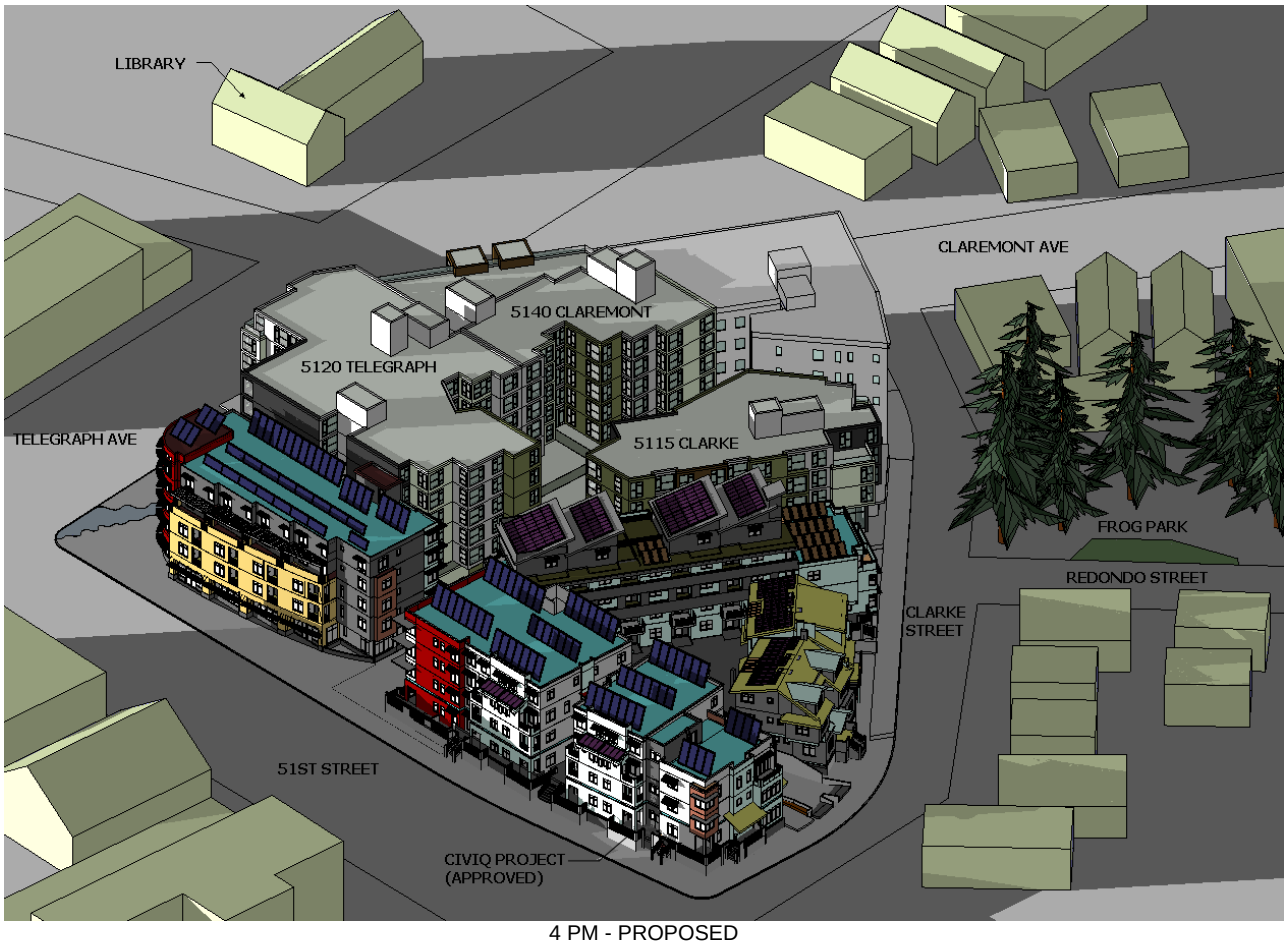


3 PM - PROPOSED

CREEK SIDE SHADOW STUDY - WINTER SOLSTICE DECEMBER 22
OVERALL VIEW FROM SOUTHEAST LOOKING NORTHWEST



4 PM - EXISTING



4 PM - PROPOSED

CREEK SIDE SHADOW STUDY - AUTUMNAL EQUINOX SEPTEMBER 23 (SPRING SIMILAR)
VIEW OF FROG PARK FROM NORTHEAST LOOKING SOUTHWEST

1 PM - EXISTING

1 PM - PROPOSED

CREEK SIDE SHADOW STUDY - AUTUMNAL EQUINOX SEPTEMBER 23 (SPRING SIMILAR)
VIEW OF FROG PARK FROM NORTHEAST LOOKING SOUTHWEST

2 PM - EXISTING

2 PM - PROPOSED

CREEK SIDE SHADOW STUDY - AUTUMNAL EQUINOX SEPTEMBER 23 (SPRING SIMILAR)
VIEW OF FROG PARK FROM NORTHEAST LOOKING SOUTHWEST

3 PM - EXISTING

3 PM - PROPOSED

CREEK SIDE SHADOW STUDY - AUTUMNAL EQUINOX SEPTEMBER 23 (SPRING SIMILAR)
VIEW OF FROG PARK FROM NORTHEAST LOOKING SOUTHWEST

4 PM - EXISTING

4 PM - PROPOSED

CREEK SIDE SHADOW STUDY - SUMMER SOLSTICE JUNE 21
VIEW OF FROG PARK FROM NORTHEAST LOOKING SOUTHWEST

1 PM - EXISTING

1 PM - PROPOSED

CREEK SIDE SHADOW STUDY - SUMMER SOLSTICE JUNE 21
VIEW OF FROG PARK FROM NORTHEAST LOOKING SOUTHWEST

2 PM - EXISTING

2 PM - PROPOSED

CREEK SIDE SHADOW STUDY - SUMMER SOLSTICE JUNE 21
VIEW OF FROG PARK FROM NORTHEAST LOOKING SOUTHWEST

3 PM - EXISTING

3 PM - PROPOSED

CREEK SIDE SHADOW STUDY - SUMMER SOLSTICE JUNE 21
VIEW OF FROG PARK FROM NORTHEAST LOOKING SOUTHWEST

4 PM - EXISTING

4 PM - PROPOSED

CREEK SIDE SHADOW STUDY - WINTER SOLSTICE DECEMBER 22
VIEW OF FROG PARK FROM NORTHEAST LOOKING SOUTHWEST

1 PM - EXISTING

1 PM - PROPOSED

CREEK SIDE SHADOW STUDY - WINTER SOLSTICE DECEMBER 22
VIEW OF FROG PARK FROM NORTHEAST LOOKING SOUTHWEST

2 PM - EXISTING

2 PM - PROPOSED

CREEK SIDE SHADOW STUDY - WINTER SOLSTICE DECEMBER 22
VIEW OF FROG PARK FROM NORTHEAST LOOKING SOUTHWEST

3 PM - EXISTING

3 PM - PROPOSED

CREEK SIDE SHADOW STUDY - WINTER SOLSTICE DECEMBER 22
VIEW OF FROG PARK FROM NORTHEAST LOOKING SOUTHWEST

4 PM - EXISTING

4 PM - PROPOSED

CREEK SIDE SHADOW STUDY - AUTUMNAL EQUINOX SEPTEMBER 23 (SPRING SIMILAR)
VIEW OF FROG PARK FROM SOUTHWEST LOOKING NORTHEAST

1 PM - EXISTING

1 PM - PROPOSED

CREEK SIDE SHADOW STUDY - AUTUMNAL EQUINOX SEPTEMBER 23 (SPRING SIMILAR)
VIEW OF FROG PARK FROM SOUTHWEST LOOKING NORTHEAST

2 PM - EXISTING

2 PM - PROPOSED

CREEK SIDE SHADOW STUDY - AUTUMNAL EQUINOX SEPTEMBER 23 (SPRING SIMILAR)
VIEW OF FROG PARK FROM SOUTHWEST LOOKING NORTHEAST

3 PM - EXISTING

3 PM - PROPOSED

CREEK SIDE SHADOW STUDY - AUTUMNAL EQUINOX SEPTEMBER 23 (SPRING SIMILAR)
VIEW OF FROG PARK FROM SOUTHWEST LOOKING NORTHEAST

4 PM - EXISTING

4 PM - PROPOSED

CREEK SIDE SHADOW STUDY - SUMMER SOLSTICE JUNE 21
VIEW OF FROG PARK FROM SOUTHWEST LOOKING NORTHEAST

1 PM - EXISTING

1 PM - PROPOSED

CREEK SIDE SHADOW STUDY - SUMMER SOLSTICE JUNE 21
VIEW OF FROG PARK FROM SOUTHWEST LOOKING NORTHEAST

2 PM - EXISTING

2 PM - PROPOSED

CREEK SIDE SHADOW STUDY - SUMMER SOLSTICE JUNE 21
VIEW OF FROG PARK FROM SOUTHWEST LOOKING NORTHEAST

3 PM - EXISTING

3 PM - PROPOSED

CREEK SIDE SHADOW STUDY - SUMMER SOLSTICE JUNE 21
VIEW OF FROG PARK FROM SOUTHWEST LOOKING NORTHEAST

4 PM - EXISTING

4 PM - PROPOSED

CREEK SIDE SHADOW STUDY - WINTER SOLSTICE DECEMBER 22
VIEW OF FROG PARK FROM SOUTHWEST LOOKING NORTHEAST

1 PM - EXISTING

1 PM - PROPOSED

CREEK SIDE SHADOW STUDY - WINTER SOLSTICE DECEMBER 22
VIEW OF FROG PARK FROM SOUTHWEST LOOKING NORTHEAST

2 PM - EXISTING

2 PM - PROPOSED

CREEK SIDE SHADOW STUDY - WINTER SOLSTICE DECEMBER 22
VIEW OF FROG PARK FROM SOUTHWEST LOOKING NORTHEAST

3 PM - EXISTING

3 PM - PROPOSED

CREEK SIDE SHADOW STUDY - WINTER SOLSTICE DECEMBER 22
VIEW OF FROG PARK FROM SOUTHWEST LOOKING NORTHEAST

4 PM - EXISTING

4 PM - PROPOSED

Appendix II

DKS Associates' Memorandum:
Trip Generation for Air & Noise Analysis

DKS Associates
TRANSPORTATION SOLUTIONS

MEMORANDUM

TO:	Stu During – Stu During Associates		
FROM:	Patricia Camacho		
DATE:	December 12, 2007		
SUBJECT:	Trip Generation for Air & Noise Analysis – The Creekside Project	P/A No.	07107-000

As requested, DKS has prepared a trip generation estimate for the Creekside Mixed-Use project for use in the Air & Noise Analysis.

Below is a trip generation estimate based on *120* residential units and 7,700 sq. ft of commercial land use, which is the most recent estimate from the project applicant.

Land Use	Size	Units	ADT	A.M. Peak Hour					P.M. Peak Hour				
				AVTE	Percent		Trips		AVTE	Percent		Trips	
					In	Out	In	Out		In	Out	In	Out
Residential[1]	120	d.u.	749	60	17%	83%	10	50	70	67%	33%	47	23
High-Turnover (Sit-Down) Restaurantl[2]	7.7	1,000 sq. ft	979	89	52%	48%	46	43	84	61%	39%	51	33
Subtotal				**148**			**56**	**92**	**154**			**98**	**56**
Existing Video Store[3] (to be demolished)	***10***	***1,000 sq. ft***	**-**	**-**	**-**		**-**	**-**	***-51***			***-26***	***-25***
Total			**1,729**	**148**			**56**	**92**	**103**			**72**	**31**

Source: Institute of Transportation Engineers – Trip Generation Manual, 7th Edition, 2003. Fitted Curve Equation.
Notes: numbers have been rounded up to nearest whole number.
[1] Residential Condominium/Townhouse – Land Use Code (230). Adjacent Street Traffic, fitted curve equation.
For Daily Trips: Ln(T) = 0.85 Ln(X) + 2.55; For A.M. Peak: Ln(T) =0.80 Ln(X) + 0.26; For P.M. Peak: 0.82 Ln(X) + 0.32
T: average vehicle trip ends X: number of dwelling units
[2] High-Turnover (Sit-Down) Restaurant – Land Use Code (932) – Adjacent Street Traffic, average rate per 1,000 square feet. Daily Avg. Rate: 127.15; For A.M. Peak: 11.52; For P.M. Peak: 10.92
[3] Existing Video Store. Trip reduction based on existing driveway counts. No trips are generated during the A.M. peak hour since the video store does not operate during the morning peak period.

ADT: Average Daily Traffic
AVTE: Average Vehicle Trip Ends

p:\p\07\07107-000 oakland creekside (5132 telegraph ave)\reports\memo's\trip generation for air & noise analysis rev 12-11-07.doc

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