

## G. SHADOW

### SETTING

Shadow cast by the existing buildings on the project blocks (including the five-story, approximately 70-foot tall Saturn dealership building, adjacent to the project site on the corner of 24th Street and Broadway) is limited because most of the two-block site is not occupied by structures, and the buildings that do exist are primarily one and two stories in height. Exceptions include the Saturn building, noted above, and the building at 24th and Valley Streets, which has two stories plus a mezzanine and is about 35 feet tall. Existing shadow cast by the buildings on the project site and by nearby buildings is depicted in Figures IV.G-1 through IV.G-6 at the end of this section.

### GENERAL PLAN POLICIES

The following General Plan policies address the provision of adequate sunlight as it relates to impacts of new development:

- Residential developments should be encouraged to face the street, and orient their units to desirable sunlight and views, while avoiding unreasonably blocking sunlight and views for neighboring buildings, respecting the privacy needs of residents of the development and surrounding properties, providing for sufficient conveniently located on-site open space, and avoiding undue noise exposure (LUTE Policy N3.9, *Orienting Residential Development*).
- Continue to require new multi-family development to provide usable outdoor open space for its residents. These spaces should be relatively flat, located close to the units that are served, and screened from abutting property where appropriate. Wherever possible, the spaces should receive sunlight and be open to the sky. In high density areas, the use of rooftop terraces and gardens should be encouraged, both to create new open space and to provide points of visual interest. (OSCAR Policy OS-4.1, *Provision of Useable Open Space*).

As discussed below, the City of Oakland has established that a project's consistency with General Plan policies that address the provision of adequate light to appropriate uses is a significance criteria used to determine whether or not a project would result in a significant effect related to shadow. Therefore, the project's consistency with LUTE Policy N3.9 and OSCAR Policy OS-4.1, specifically, is discussed below under Impact I.2.

### IMPACTS AND MITIGATION MEASURES

#### ***SIGNIFICANCE CRITERIA***

A project would have a significant shadow impact if it would unreasonably block sunlight for neighboring buildings or open space, pursuant to General Plan policies discussed above. Specifically, a project would unreasonably block sunlight for neighboring buildings if it would:

- introduce landscape that would now or in the future cast substantial shadow on existing solar collectors (in conflict with California Public Resource Code Section 25980-25986);
- cast shadow that substantially impairs the function of a building using passive solar heat collection, solar collectors for hot water heating, or photovoltaic solar collectors;
- cast shadow that substantially impairs the beneficial use of any public or quasi-public park, lawn, garden, or open space;
- cast shadow on a historic resource, as defined by CEQA Section 15064.5(a), such that it would substantially diminish/impair its eligibility for listing in the National Register of Historic Places, California Register of Historical Resources, or in a local register of historical resources or a historical resource survey as defined by the Public Resource Code; or
- if the project requires an exception (variance) to the policies and regulations in the General Plan, Planning Code, or Uniform Building Code, and the exception causes a fundamental conflict with policies and regulations in the General Plan, Planning Code, and Uniform Building Code addressing the provision of adequate light related to appropriate uses.

**Impact G.1: The project would create additional shadow on adjacent blocks to the west,<sup>1</sup> north, and east, including casting shadow on contributing buildings in an Area of Primary Importance, but would not introduce landscaping conflicting with the California Public Resource Code; not cast shadow that impairs the use of any public or quasi-public park, lawn, garden, or open space; and not cast substantial shadow on buildings using passive solar heat, solar collectors for hot water heating, or photovoltaic solar collectors. (Less than Significant)**

Because the project would not introduce landscaping conflicting with the California Public Resource Code; and not cast shadow that impairs the use of any public or quasi-public park, lawn, garden, or open space, this discussion will focus on the localized shadow effects on existing residential and commercial uses, the potential localized shadow effects on historic resources defined by CEQA Section 15064.5(a), as well as potential shadow effects on buildings using the specified types of solar energy.

#### *Existing Nearby Uses*

Shadow effects attributable to the project were analyzed for representative times of day (9:00 a.m., 12:00 noon, and 3:00 p.m.) during the four seasons of the year: in December on the winter solstice, when the sun is at its lowest and shadows are at their longest; in June on the summer solstice, when the sun is at its highest and shadows are at their shortest; in March during the spring equinox, when shadows are midway through a period of shortening; and in September at the fall equinox, when shadows are midway through a period of lengthening. Shadows on any other day of the year would be within the range of shadows presented during the seasons and times of day described above.

<sup>1</sup> For purposes of this shadow analysis, true compass directions (north, south, east, and west) were used – the rest of the DEIR followed the Oakland convention. Following Oakland convention, the hills are to the north; therefore, Broadway and streets parallel to it run north-south, and numbered streets run east-west.

In general, new shadow from the project would fall in a westerly to northwesterly direction during the morning hours, depending on the season, meaning the project would newly shade residential and commercial buildings across Valley Street. In June, when shadows are shortest, shadows would be cast nearly due west (almost straight across Valley Street) at 9:00 a.m. (see Figure IV.G-1, Diagram A). Project shadow would leave the west side of Valley Street by about 11:00 a.m., and by noon, project shadow would be oriented northwesterly; shortly after noon, project shadow would begin to extend towards the south side of 24th Street (see Figure IV.G-2, Diagram A). (At this time, project buildings on Parcel A, south of 23rd Street, would cast minimal shadow on the south side of 23rd Street.) The project would continue to cast shadow towards 24th Street as the afternoon progresses, and by 3:00 p.m., project shadow would trend northeasterly (see Figure IV.G-3, Diagram A). By late afternoon, project shadow would fall in a northeasterly, and then an easterly direction, onto and, ultimately, across, Broadway.

In March and September, morning shadow would fall in a northwesterly direction, newly shading residential and commercial buildings across Valley Street (see Figure IV.G-4, Diagrams A and B).<sup>2</sup> Because the sun is lower in the sky than in June, project shadows would reach the west side of Valley Street for a longer period of time than in June; at noon, however, the shadow would not cross Valley Street. Also at noon, shadow would extend across 24th Street (see Figure IV.G-5, Diagrams A and B). By 3:00 p.m., project shadow would extend in a northeasterly direction and result in shade along the commercial frontages on 24th Street, west of Valley Street, and along the project frontage on Broadway (see Figure IV.G-6, Diagrams A and B). Later in the afternoon, as in June, project shadow would continue in a northeasterly direction, and then an easterly direction, onto and, ultimately, across, Broadway.

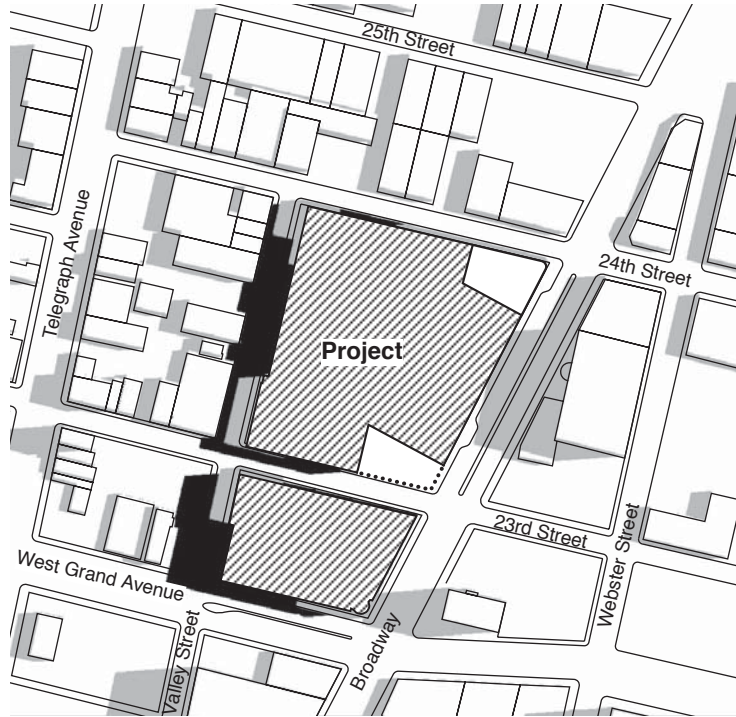
In December, when shadows are longest, buildings on the west side of Valley Street are currently largely in shadow (at ground level) at 9:00 a.m. (see Figure IV.G-1, Diagram A). At 9:00 a.m. on December 21, existing shadow is cast on Valley Street not only by existing buildings on the project site, but also by taller buildings to the east, on Broadway. The project would add new shadow to residential buildings on the west side of Valley Street near 24th Street that are not currently shaded. At noon in December, when shadows would fall almost directly north, the orientation of Valley Street (about 10 degrees east of due north) would preclude project shadow from reaching the west side of Valley Street (see Figure IV.G-2, Diagram B). At 3:00 p.m. on December 21, existing commercial buildings on the north side of 24th Street are partially shaded by existing buildings; the project would add new shadow to buildings not currently shaded (see Figure IV.G-3, Diagram B). Shadow would also extend on to the west side of Broadway along the project frontage.

Overall, new shadows cast by the project would affect existing uses to the west and north of the project site, along Valley Street and 24<sup>th</sup> Street, respectively. Existing development on the project site and across Broadway currently casts shadows on properties west (across Valley Street) of the project site, and the newly cast shadows generated by the project would be

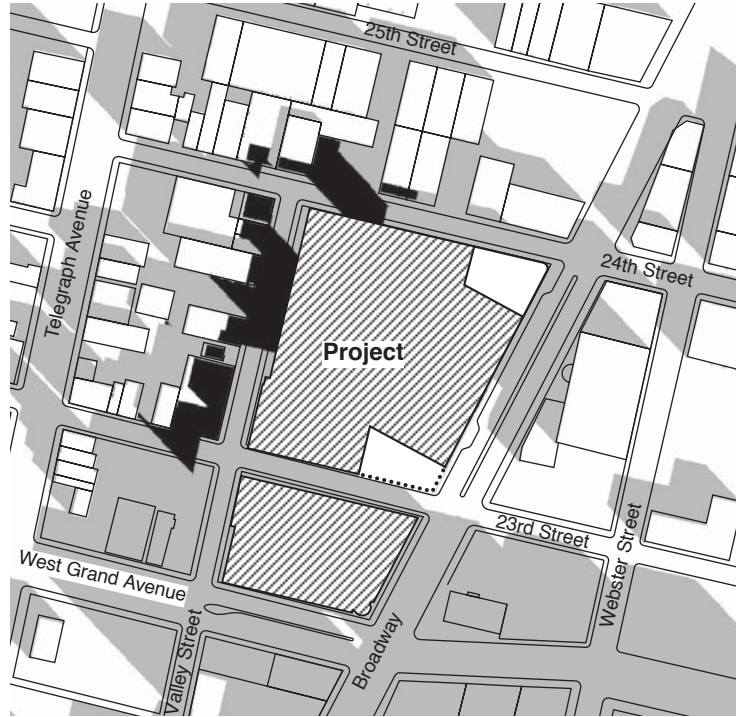
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<sup>2</sup> March and September shadows are similar in length and direction, although they are offset by one hour from one another because March is during standard time, while September is during daylight saving time.

**Diagram A:** June 21, 9:00 am PDT




**Diagram B:** December 21, 9:00 am PST



0 100 200  
Feet

 Project Site

 Existing Shadow

 New Project Shadow

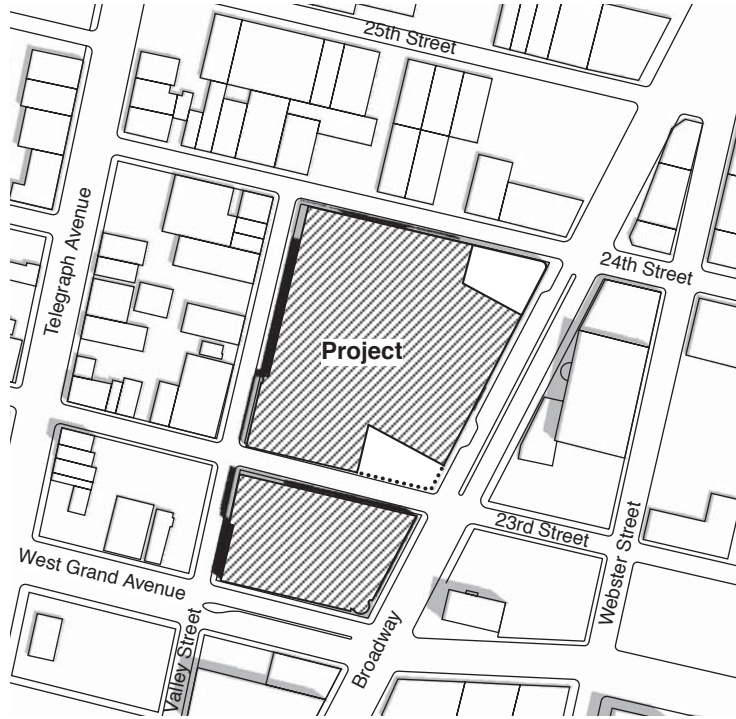
 Maximum Potential Site

SOURCE: Environmental Vision, 2004

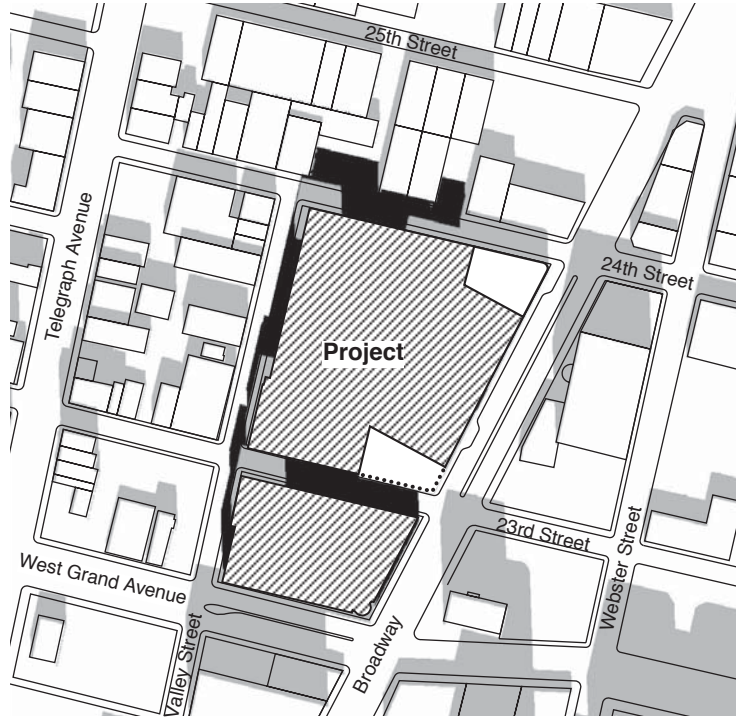
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**Figure IV.G-1**  
June and December  
Project Shadow Patterns  
at 9:00 am

**Diagram A:** June 21, 12:00 pm PDT





**Diagram B:** December 21, 12:00 pm PST



0 100 200  
Feet

 Project Site

 Existing Shadow

 New Project Shadow

 Maximum Potential Site

SOURCE: Environmental Vision, 2004

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**Figure IV.G-2**  
June and December  
Project Shadow Patterns  
at 12:00 pm

Diagram A: June 21, 3:00 pm PDT

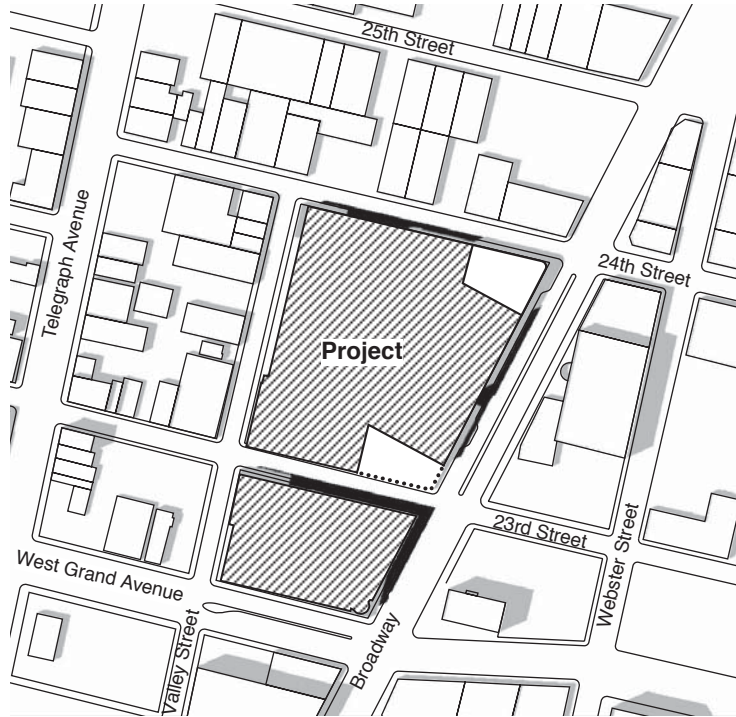
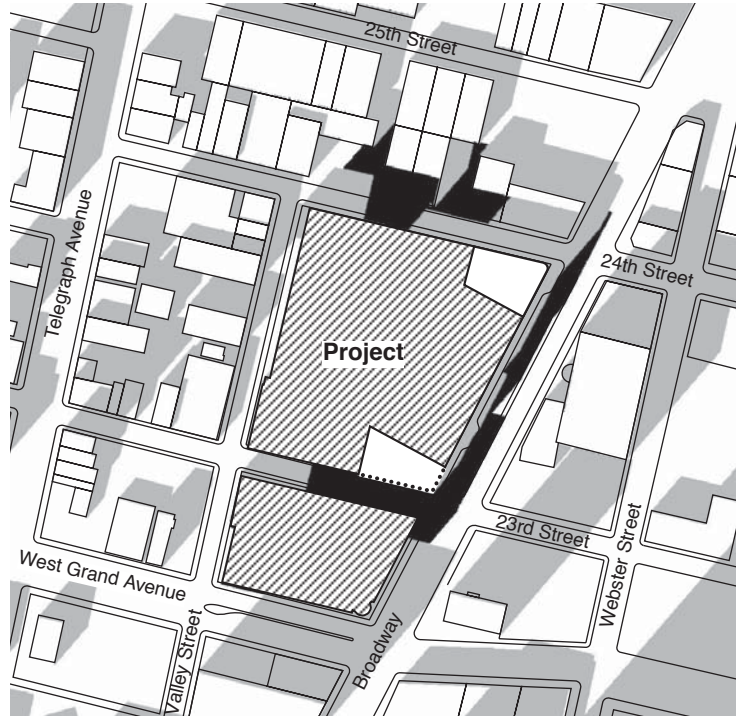



Diagram B: December 21, 3:00 pm PST




0 100 200  
Feet

 Project Site

 Existing Shadow

 New Project Shadow

 Maximum Potential Site

SOURCE: Environmental Vision, 2004

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**Figure IV.G-3**  
June and December  
Project Shadow Patterns  
at 3:00 pm

Diagram A: March 21, 9:00 am PST

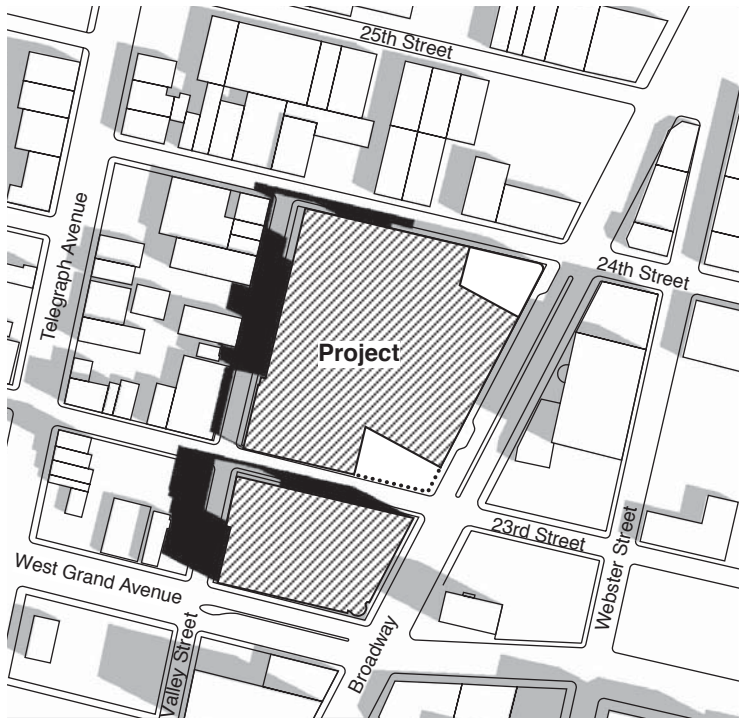
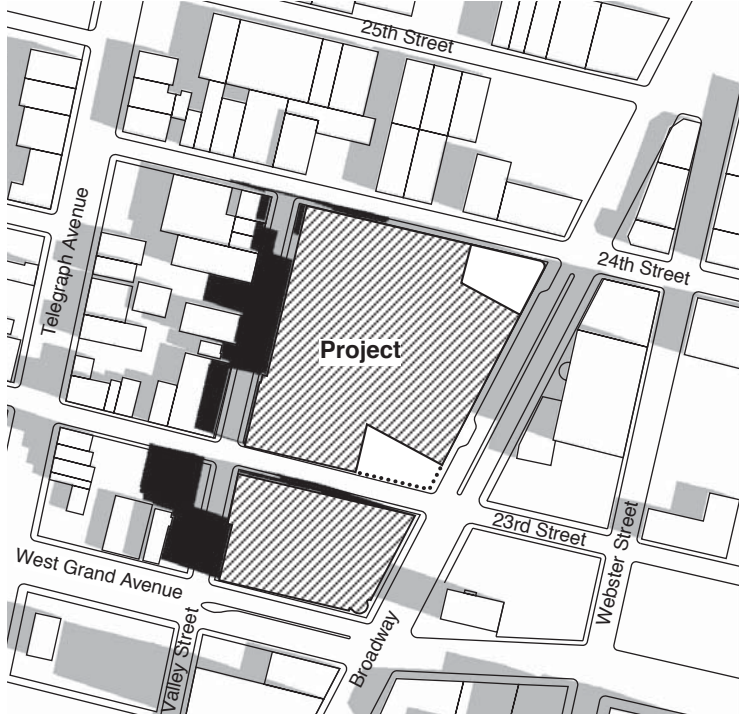


Diagram B: September 21, 9:00 am PDT



SOURCE: Environmental Vision, 2004

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**Figure IV.G-4**  
 March and September  
 Project Shadow Patterns  
 at 9:00 am

Diagram A: March 21, 12:00 pm PST

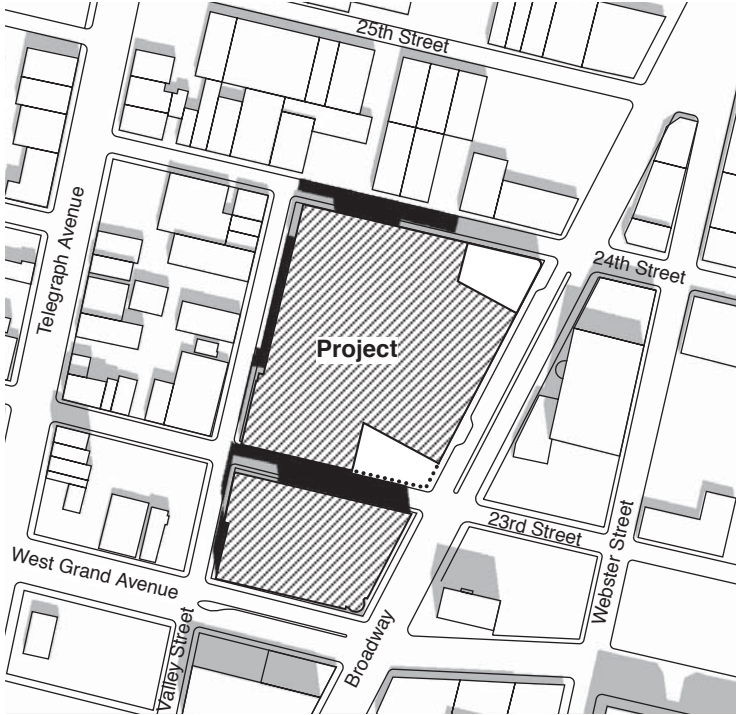
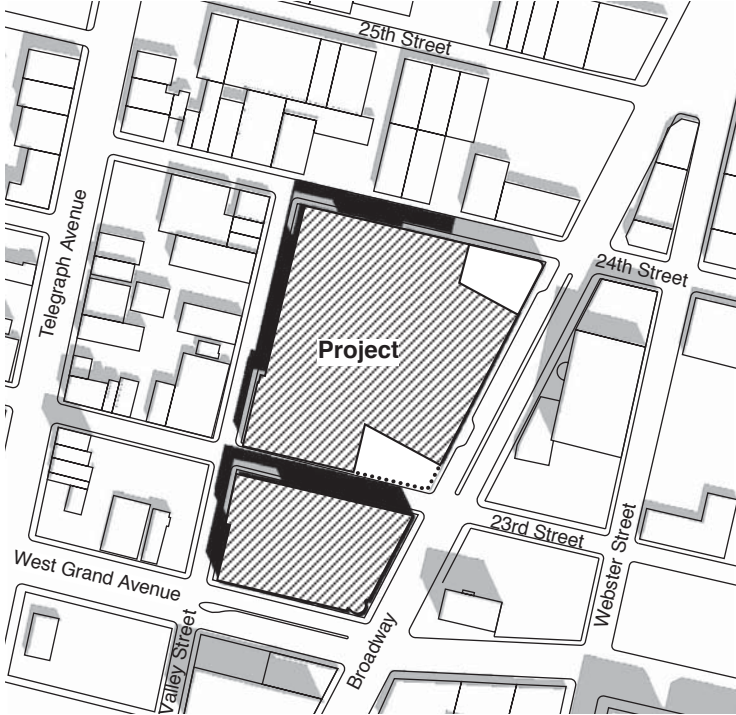


Diagram B: September 21, 12:00 pm



SOURCE: Environmental Vision, 2004

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**Figure IV.G-5**  
 March and September  
 Project Shadow Patterns  
 at 12:00 pm

Diagram A: March 21, 3:00 pm PST

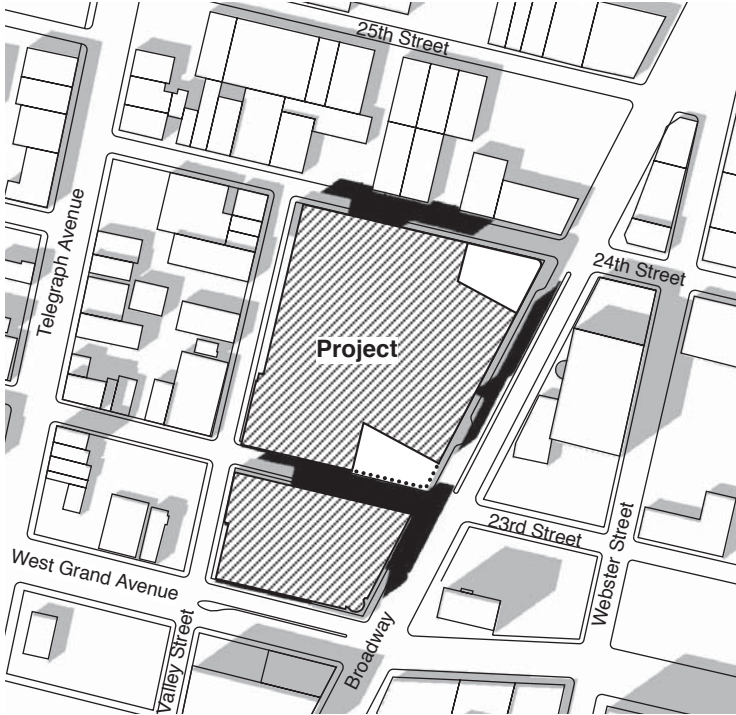
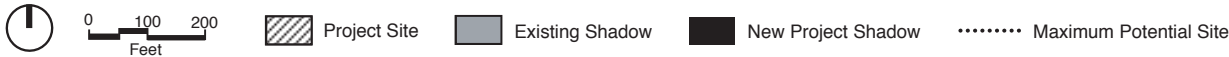
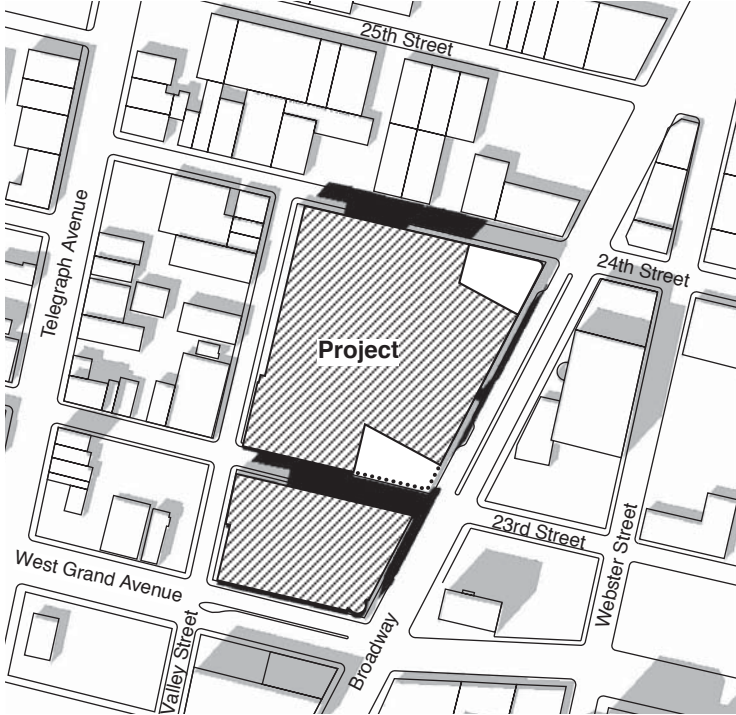


Diagram B: September 21, 3:00 pm PDT



SOURCE: Environmental Vision, 2004

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**Figure IV.G-6**  
 March and September  
 Project Shadow Patterns  
 at 3:00 pm

extended during most times of the year during the morning hours (before 11:00 a.m.) only. Alternatively, new shadows cast on commercial uses to the north of the project site (across 24th Street) primarily would occur in the mid-day hours (noon to 3:00 p.m.) in the late fall and winter only (discussed further below). Therefore, the extent of new shadowing is limited to a few hours of the day during distinct times of year and would not result in a significant physical effect as defined by CEQA.

### ***Historic Resources***

The three buildings on the north side of 24th Street nearest Broadway are contributing buildings to the 25th Street Garage District, an Area of Primary Importance (API) identified by the Oakland Cultural Heritage Survey. Shadow from the proposed project would reduce the amount of sunlight reaching these three buildings, particularly in late fall and early winter, when project shadow would obscure sunlight for much of the afternoon. (The existing Saturn dealership building at the southwest corner of 24th Street and Broadway, also a contributing building in the API, currently casts shadow on the three contributing buildings across 24th Street throughout most of the day in early winter, and in the afternoon in late fall.) These shadows would somewhat lessen the visual clarity of architectural detail on the contributing buildings on the north side of 24th Street; in particular, the contributing building at 442 24th Street is characterized by an arched garage doorway that is deeply recessed with several courses of brick, similarly recessed windows flanking the garage door, glazed tiles above the windows, and an elaborate parapet. Many of these features would be somewhat muted without direct sunlight. However, the project would not shade this or other buildings throughout the entire day, nor throughout the entire year, and therefore would not significantly obscure architectural features of contributing resources in the 25th Street Garage District.

Based on scoping comments received from the operator of an auto body shop on Valley Street (outside the API), shadow could adversely affect the operations of certain commercial uses, such as auto body and paint shops. According to the commenter:

Without natural sunlight and with shadows and shade, the process of color matching has a much greater margin for error. The paint color matching process would take a longer period of time and be less precise. This will cost me increased labor, equipment and energy costs. (Scoping Letter from Henry S. Hanzel, Owner, Hanzel Auto Body Works, April 5, 2004; full letter included in Appendix A)

Although the commenter's establishment is not within the API, it is possible that similar effects could be felt by similar establishments within the API. However, as noted above, the project would not shade this or other buildings throughout the entire day, nor throughout the entire year, and therefore, while it could result in some inconvenience to business owners and operators, it would not be anticipated to result in a significant physical effect within the meaning of CEQA, in that it appears unlikely that project shadow would result in adverse physical changes, such as deterioration of the neighborhood, due to potential unknown socioeconomic effects. Arguably, it would be as speculative to conclude that socioeconomic impacts on existing businesses due to

project shadow would adversely affect the physical environment of the neighborhood as it would be to conclude the increased population fostered by the project would result in positive socioeconomic changes in the form of increased demand for certain types of businesses in the neighborhood.

### ***Solar Energy***

An apartment building at 2341 Valley Street, across Valley Street from the project site, appears to have solar collectors on its rooftop that would be affected by project shadow. The building is three and one-half stories (approximately 35 feet) in height, and the collectors are located along the northern portion of the building's flat roof. As discussed above and as depicted in each of the shadow diagrams, Figures, IV.G-1 through IV.G-6,<sup>3</sup> the proposed project would cast the longest shadow in the direction of 2341 Valley in the early morning. However, as shown in the figures, the building at 2341 Valley Street is sufficiently tall that by 9:00 a.m., even on December 21 (the winter solstice), when shadows are longest, no shadow from the proposed project would reach the rooftop of the building or otherwise affect the solar collectors, meaning that the project would have no effect on peak midday periods of solar energy. Given the relative heights of the 2341 Valley and the proposed project, at no time depicted in Figure IV.G-1 through IV.G-6 would the roof of 2341 Valley be in shadow. No other apparent solar systems were observed in the project vicinity. Therefore, the project would not substantially impair the function of a building that may be using a solar heating system.

### ***Open Spaces***

There are no public or quasi-public parks, lawns, gardens, or other open spaces in the project vicinity that would be affected by project shadow.

**Mitigation:** None required.

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### **Impact G.2: The project may require approval of a discretionary “exception” or variance by the City, but would be consistent with City polices and regulations addressing the provision of adequate light. (Less than Significant)**

The proposed project may require approval of a variance, which, pursuant to Chapter 17.148 of the Oakland Planning Code, includes an assessment of whether or not the proposed project is consistent with policies and regulations regarding the provision of adequate light and ventilation. However, although it is not yet known whether or not the project will require a variance that may affect the provision of adequate light and ventilation, the proposed project does not appear inconsistent with the General Plan policies regarding the overall orientation of residential development (LUTE N3.9) and provision of useable open space (OSCAR OS4.1). The project

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<sup>3</sup> The building at 2341 Valley is the fourth building south of the corner of 24<sup>th</sup> and Valley Streets, across from the project site.

orients the townhouse-style condominium units on the ground floor toward the street, each with separate entrances, and orients the living spaces of the residential units on all floors toward the building's exterior to maximize sunlight access. Although the proposed project would cast shadow on nearby buildings, particularly during the winter and fall seasons at certain times of the day, indirect sunlight would still be available to windows of nearby buildings. Furthermore, the intensity of residential development proposed is consistent with the General Plan and the level of sunlight, noise, and privacy is consistent with that typically found and anticipated for residential living within an urban, downtown setting. Furthermore, the project proposes usable, outdoor open space that would include landscaped courtyards and picnic areas located on the roof of the parking podium on each parcel. Thus, the project is consistent with relevant policies and regulations regarding the provision of light and usable open spaces and therefore would not have a significant impact.

**Mitigation:** None required.

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### ***CUMULATIVE IMPACTS***

#### **Impact G.3: The project, along with other foreseeable development in the vicinity, could result in cumulative shadow impacts. (Less than Significant)**

Shadows are longer in the early morning and late afternoon, particularly in late fall and early winter, when the sun is lowest on the horizon. At such times, shadow from buildings a relatively longer distance from the project site could combine with project shadow to increase the impact. For example, shadow from a residential tower proposed at 21st Street and Telegraph Avenue as part of the proposed Uptown Mixed-Use Project could reach the vicinity of the Broadway-West Grand Avenue project in mid-afternoon in late fall and early winter, creating additional shadow on 23rd and Valley Streets when the Broadway-West Grand project would cast new shadow on 23rd and 24th Streets and Broadway. However, at the times of day and year when shadows from relatively distant developments would be long enough to reach the project area, shadows from even existing low-rise buildings would also be at their longest and would already shade much of the project area, meaning any change would be relatively incidental. Additionally, shading patterns change rapidly when shadows are very long because the angle of the sun relative to the earth produces rapid shortening (in the morning) or lengthening (in the afternoon) of shadows. Therefore, extensive shading is commonplace and an accepted part of the normal pattern of light during early morning and late afternoon in late fall and early winter, especially in a built-up urban area. Therefore, cumulative shadow impacts would not interfere with any beneficial uses of parks or open space and would not be considered significant.

**Mitigation:** None required.