

## **APPENDIX A**

### **SHADE/SHADOW STUDY**





# 414 South San Gabriel Boulevard Project

## **Shade | Shadow Study**

CONSULTANT:

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## EXECUTIVE SUMMARY

The purpose of this Shade/Shadow Study (Study) is to describe the existing sunlight exposure and shade/shadow conditions at the proposed 414 South San Gabriel Boulevard Project (“project”) site and in the immediate vicinity, as well as analyzing the introduction of new sources of shade/shadow associated with the proposed project. The proposed project is located at 414-420 South San Gabriel Boulevard in the City of San Gabriel (Assessor’s Parcel Numbers [APNs] 5373-025-003 through -009, -020, -021, -023, and -024).

The L-shaped project site encompasses approximately 1.75 acres and is currently developed with six single-story commercial buildings totaling approximately 11,579 square feet and surface parking. On-site topography is relatively flat averaging at approximately 404 feet above mean sea level (msl) and gently slopes to the southeast.

Overall, the project proposes to demolish the existing commercial buildings and surface parking and construct a new 199,358-square foot building with approximately 190,232 square feet of climate-controlled self-storage and approximately 9,126 square feet of executive artists space. The climate-controlled self-storage would include a 1,000-square foot ground floor rental office and the executive artist space would include a 1,000-square foot community arts space fronting South San Gabriel Boulevard. The proposed structure would be up to five stories (61.5 feet in height). The building frontage along South San Gabriel Boulevard would be up to four stories (58 feet in height), while the building frontage along Commercial Avenue and Gladys Avenue would be up to five stories (61.5 feet in height). The self-storage facility would include 1,524 individual units ranging in size between 25 to 300 square feet. A total of 50 parking spaces, including four electric vehicle spaces and two ADA-accessible spaces, would be provided for employees and visitors in a surface parking lot located along the site’s interior.

The proposed project would result in new shadows cast onto surrounding commercial, light industrial, residential, and mixed-uses, as well as adjacent roadways, sidewalks, and the Rubio Wash. As discussed in Section 4.1, *Thresholds of Significance*, a significant impact would result if shadow-sensitive use areas (where sunlight is important to its function, such as outdoor backyard spaces for residences) would be shaded by project-related structures for more than three hours between 9:00 a.m. and 3:00 p.m. Pacific Standard Time (between late October and early April), or for more than four hours between 9:00 a.m. and 5:00 p.m. Pacific Daylight Time (between early April and late October), compared to existing conditions.

### Early April to Late October

Summer Months. The proposed project would cast shadows onto South San Gabriel Boulevard, a small portion of Commercial Avenue to the southwest, and commercial uses to the south and west during the morning (9:00 a.m.) hour. During the mid-day (12:00 p.m.) hour, shadows cast by the proposed project would primarily be contained within the project’s boundary. During the afternoon (3:00 p.m.) hour, shadows cast by the proposed project would nominally be cast onto South Gladys Avenue to the east. Shadows cast during the evening (6:00 p.m.) hour would spill onto South Gladys Avenue and light industrial uses to the east. The project would not result in

the shading of any shadow-sensitive uses for more than four hours between 9:00 a.m. and 5:00 p.m. Thus, during the summer months, surrounding uses would not experience significant shadow impacts as a result of the proposed project.

Fall Months. The proposed project would cast shade to off-site uses for greater than four hours between the hours of 9:00 a.m. and 6:00 p.m. during the fall months. Commercial uses to the north would be shaded for more than four hours between 9:00 a.m. and 6:00 p.m. However, this area is not considered shadow-sensitive (as sunlight is not important to its function) and/or routinely useable outdoor space. Further, the commercial uses to the north already experience partial shading under existing conditions. Thus, during the fall months, surrounding uses would not experience significant shadow impacts as a result of the proposed project.

### **Late October to Early April**

Winter Months. The proposed project would cast shade for greater than three hours between 9:00 a.m. and 3:00 p.m. at off-site areas in the winter months. These areas shaded for more than three hours include commercial and mixed-uses (commercial and residential uses) to the north of the project site. The commercial areas are not considered shadow-sensitive (as sunlight is not important to their function) and/or routinely usable outdoor spaces. The balcony areas associated with the mixed-uses to the north of the project site are considered shadow-sensitive. However, the balcony areas associated with the mixed-uses to the north experience shading under existing conditions as a result of the existing commercial uses to the north of the project site. Therefore, the project would not result in significant shade/shadow impacts during the winter months.

Spring Months. The proposed project would cast shadows onto commercial uses to north of the project site for greater than three hours between 9:00 a.m. and 3:00 p.m. during the spring months. However, this area is not considered shadow-sensitive (as sunlight is not important to its function) and/or routinely useable outdoor space. Therefore, the project would not result in significant shade/shadow impacts during the spring months.

Although the commercial and mixed-uses (commercial and residential uses) to the north would experience significant shading as a result of the project, these uses are not considered shadow-sensitive (as these areas are not dependent on sunlight for its function, and these areas are not routinely usable outdoor spaces). In addition, the areas associated with the mixed-uses to the north already experience shading under existing conditions. As such, the proposed project would not result in significant shading of the any shadow-sensitive uses for more than three hours between 9:00 a.m. and 3:00 p.m. Pacific Standard Time (between late October and early April), or for more than four hours between 9:00 a.m. and 5:00 p.m. Pacific Daylight Time (between early April and late October). A less than significant shade/shadow impact would occur with implementation of the proposed project.

## 1.0 PURPOSE OF THE STUDY

The purpose of this Shade/Shadow Study (Study) is to describe the existing sunlight exposure and shade/shadow conditions at the proposed 414 South San Gabriel Boulevard Project (project) site and in the immediate vicinity, as well as analyzing the introduction of new sources of shade/shadow associated with the proposed project. The information upon which this Study is based was compiled from site photographs, Google Earth 2020 satellite imagery, and shade/shadow diagrams prepared by Digital Preview in April 2020 for both the existing and proposed conditions.

### 1.1 PROJECT LOCATION/SETTING

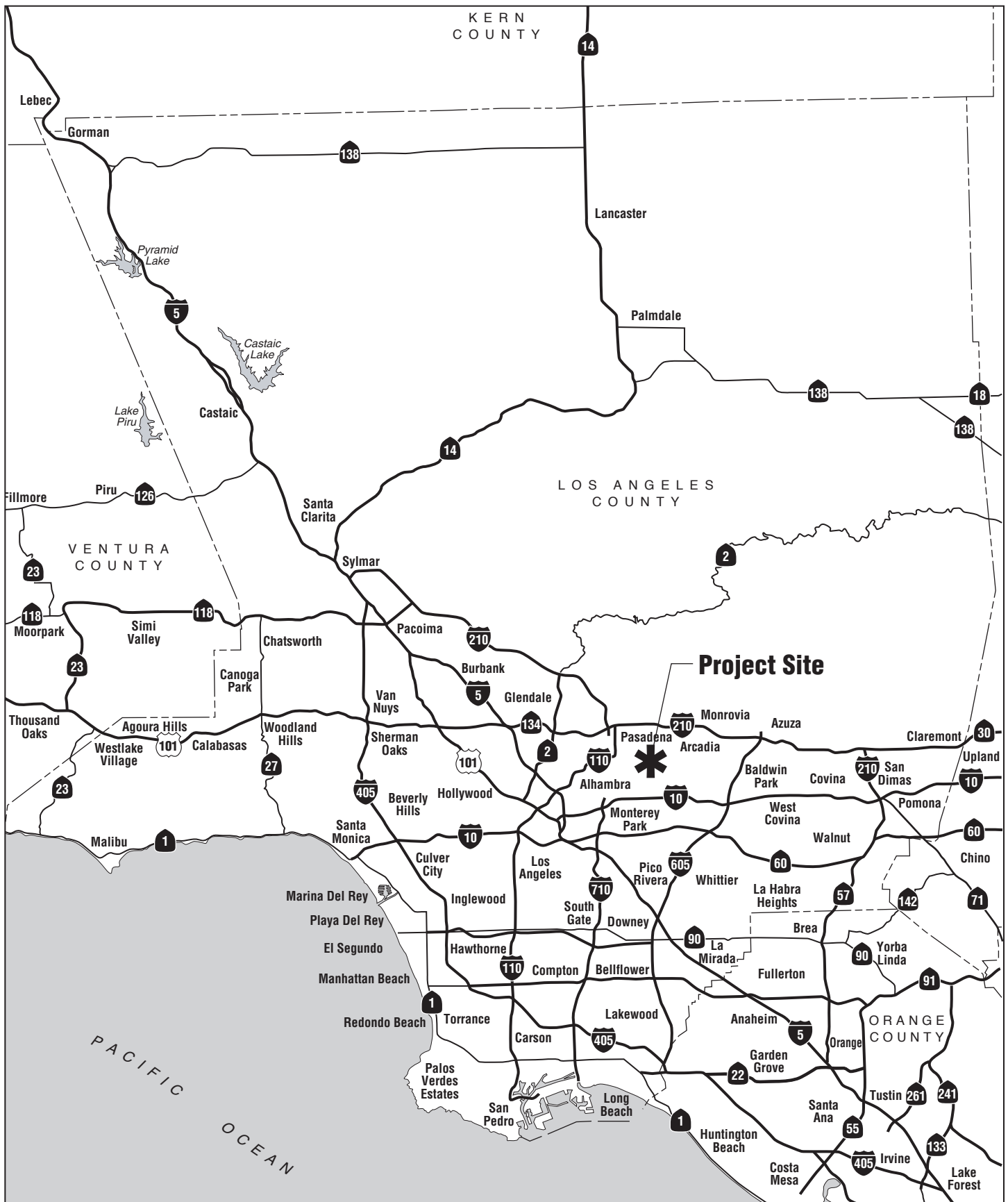
The City of San Gabriel (City) is located in the San Gabriel Valley of Los Angeles County, approximately 11 miles east of the Los Angeles Civic Center; refer to [Exhibit 1, \*Regional Vicinity\*](#). The City consists of 4.09 square miles. Surrounding jurisdictions include the cities of San Marino and Temple City to the north, Temple City and unincorporated County of Los Angeles to the east, Rosemead to the east and south, and Alhambra to the west.

The project site is approximately 1.75 acres and consists of eleven contiguous parcels generally located at 414-420 South San Gabriel Boulevard (Assessor's Parcel Numbers [APN] 5373-025-003 through -009, -020, -021, -023, and -024); refer to [Exhibit 2, \*Site Vicinity\*](#). Regional access to the project site is provided via the San Bernardino Freeway (Interstate 10) or the Foothill Freeway (Interstate 210). Local access to the project site is provided by South San Gabriel Boulevard, Commercial Avenue, and South Gladys Avenue.

The L-shaped project site is currently developed with six single-story commercial buildings totaling approximately 11,579 square feet and surface parking. On-site topography is relatively flat averaging at approximately 404 feet above mean sea level (msl) and gently slopes to the southeast. Scattered ornamental trees, low-lying grasses, and shrubs are present throughout the site.

### 1.2 PROJECT DESCRIPTION

Overall, the project proposes to demolish the existing commercial buildings and surface parking and construct a new 199,358-square foot building with approximately 190,232 square feet of climate-controlled self-storage and approximately 9,126 square feet of executive artists space; refer to [Exhibit 3, \*Conceptual Site Plan\*](#). The climate-controlled self-storage would include a 1,000-square foot ground floor rental office and the executive artist space would include a 1,000-square foot community arts space fronting South San Gabriel Boulevard. The proposed structure would be up to five stories (61.5 feet in height). The building frontage along South San Gabriel Boulevard would be up to four stories (58 feet in height), while the building frontage along Commercial Avenue and Gladys Avenue would be up to five stories (61.5 feet in height). The self-storage facility would include 1,524 individual units ranging in size between 25 to 300 square feet.



NOT TO SCALE

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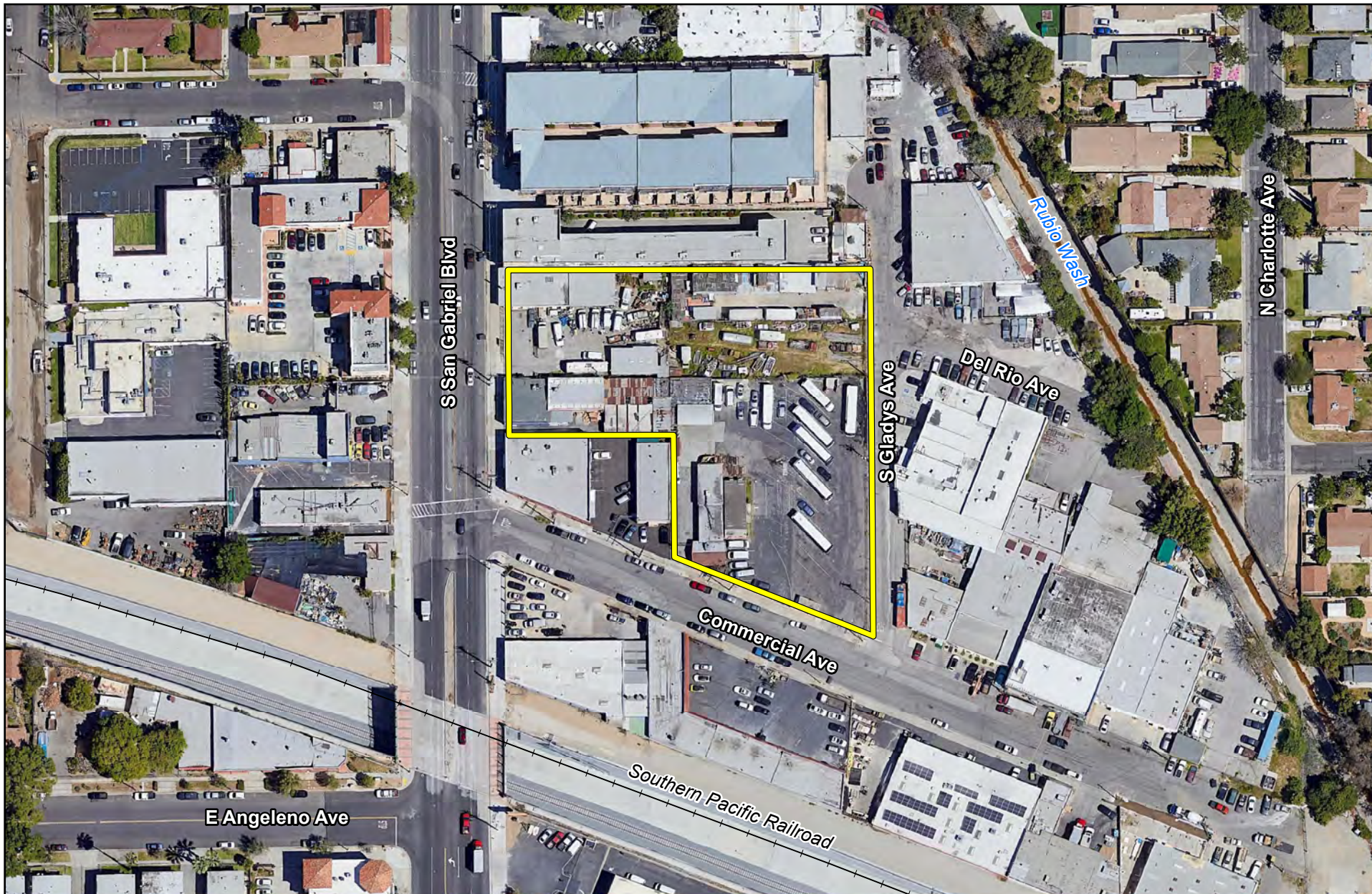
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414 SOUTH SAN GABRIEL BOULEVARD PROJECT  
SHADE/SHADOW STUDY

## Regional Vicinity

**Exhibit 1**





Source: Google Imagery March 2018, Los Angeles County

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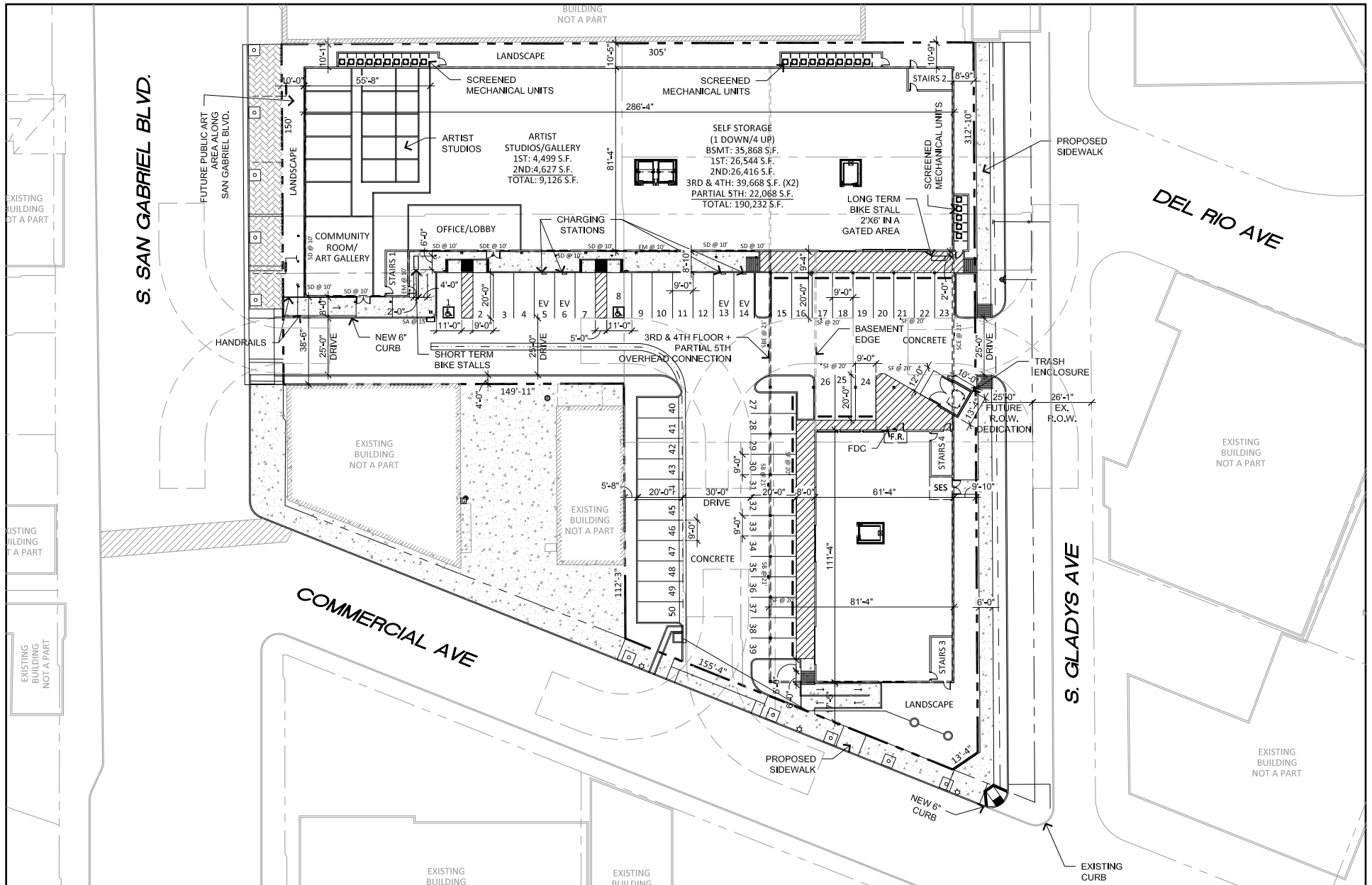
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414 SOUTH SAN GABRIEL BOULEVARD PROJECT  
SHADE/SADOW STUDY

**Site Vicinity**

**Exhibit 2**







A total of 50 parking spaces, including four electric vehicle spaces and two ADA-accessible spaces, would be provided for employees and visitors in a surface parking lot located along the site's interior.

## 2.0 METHODOLOGY

Shading refers to the effect of shadows cast upon adjacent areas by proposed structures. Consequences of shadows upon land uses may be positive, including cooling effects during warm weather, or negative, such as the loss of natural light necessary for solar energy purposes or the loss of warming influences during cool weather. Shadow effects are dependent upon several factors, including the local topography, the height and bulk of the project's structural elements, sensitivity of adjacent land uses, season, and duration of shadow projection. Facilities and operations sensitive to the effects of shading include routinely usable outdoor spaces associated with residential, recreational, or institutional (e.g., schools, convalescent homes) land uses; commercial uses such as pedestrian-oriented outdoor spaces or restaurants with outdoor eating areas; nurseries; and existing solar collectors. These uses are considered sensitive because sunlight is important to function, physical comfort, or commerce.

To identify the proposed project's potential shadow-related impacts, existing and project-generated morning, mid-day, afternoon, and evening shade patterns were compared for each of the four seasons. Specifically, four dates were used for analysis purposes:

- Winter and summer solstices (December 21 and June 21), when the sun is at its lowest and highest point, respectively, and
- Spring and fall equinoxes (March 21 and September 21), when day and night are of approximately equal length.

The longest shadows are cast during the winter months and the shortest shadows are cast during the summer months. The following discussion describes the summer/winter solstice and vernal/autumnal equinox phenomenon, local topography, and some general assumptions that affect shadow patterns in the project vicinity. Note that the analysis considers shadow effects associated with proposed building massing only and the shadow patterns associated with proposed landscaping are not addressed.

### SUMMER AND WINTER SOLSTICE

"Solstice" is defined as either of the two points on the ecliptic that lie midway between the equinoxes (separated from them by an angular distance of 90 degrees [°]). At the solstices, the sun's apparent position on the celestial sphere reaches its greatest distance above or below the celestial equator, about 23.5° of the arc. At the time of summer solstice, approximately June 21, the sun is directly overhead at noon at the Tropic of Cancer. In the Northern Hemisphere, the longest day and shortest night of the year occur on this date, marking the beginning of summer. At winter solstice, approximately December 21, the sun is overhead at noon at the Tropic of Capricorn; this marks the beginning of winter in the Northern Hemisphere. Measuring shadow lengths for the winter and summer solstices represents the extreme shadow patterns that occur

throughout the year. Shadows cast on the summer solstice are the shortest shadows during the year, becoming progressively longer until winter solstice when the shadows are the longest they are all year.

## **VERNAL AND AUTUMNAL EQUINOX**

An equinox is the moment when the sun passes over the equator. The event occurs twice a year, approximately March 21 and September 21. The equinoxes are the two days each year when the middle of the sun is an equal amount of time above and below the horizon for every location on Earth. In the Northern Hemisphere, the March equinox is known as the vernal equinox and the September equinox is the autumnal equinox. In the Southern Hemisphere, the names are reversed. In practice, at the equinox, the day is longer than the night.

The equinoxes can be interpreted as virtual points in the sky. As Earth moves around the sun, the apparent position of the sun relative to the other stars moves in a full circle over the period of a year. This circle is called the ecliptic, and is also the plane of Earth's orbit projected against the whole sky. Other bright planets like Venus, Mars, and Saturn also appear to move along the ecliptic, because their orbits are in a similar plane to Earth's. Another virtual circle in the sky is the celestial equator, or the projection of the plane of Earth's equator against the whole sky. Because Earth's axis of rotation is tilted relative to the plane of Earth's orbit around the sun, the celestial equator is inclined to the ecliptic by about 23.5°.

## **SHADE/SHADOW DIAGRAMS**

The shade/shadow diagrams are composed of a series of three-dimensional rendered site plans. The site plans consist of the project massing models, as well as the surrounding context and geography. Upon receiving the electronic site plan files (AutoCAD) and project description, a 3D model is created to the correct heights. The 3D model is then merged with an ortho-rectified aerial photograph into AutoCAD at the correct coordinates, creating a base for the model. The existing surrounding buildings are modeled to height and included with the project model. The model is then set to include the model location, times, and dates, and then the shadow conditions are rendered. The model illustrates the shadow effects of existing buildings and new buildings proposed as part of the project application. The orientation of the model was set to represent the orientation of the project site. Dates selected for each season include the summer/winter solstices and the vernal/autumnal equinoxes. For each of those days selected, the time periods were 9:00 a.m., 12:00 p.m., and 3:00 p.m., as well as 6:00 p.m. (for summer solstice and autumnal equinox only).

## **3.0 EXISTING CONDITIONS**

The L-shaped project site is currently developed with six single-story commercial buildings totaling approximately 11,691 square feet and surface parking. On-site topography is relatively flat averaging at approximately 404 feet msl and gently slopes to the southeast. Scattered ornamental trees, low-lying grasses, and shrubs are present throughout the site.

The project site is generally located within a developed area of the City, surrounded by the following land uses:

- North: Two-story commercial buildings are located to the north of the project. Areas further north of the project site include a three-story mixed-use building (commercial and residential uses);
- East: South Gladys Avenue bounds the project site to the east with single-story light industrial buildings located to the east of South Gladys Avenue;
- South: Commercial Avenue and single-story commercial buildings bound the project site to the south with single-story light industrial buildings further south; and,
- West: South San Gabriel Boulevard and single-story commercial uses bound the project site to the west. Areas to the west of South San Gabriel Boulevard include single- and two-story commercial buildings.

### 3.1 CLIMATE

The general region lies in the semipermanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. The climate consists of a semiarid environment with mild winters, warm summers, moderate temperatures, and comfortable humidity. Precipitation is limited to a few winter storms. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds.

The average annual temperature varies little throughout the area (which encompasses the project site), averaging 75 degrees Fahrenheit (°F). However, with a less-pronounced oceanic influence, the eastern inland portions of the project's geographical area show greater variability in annual minimum and maximum temperatures. All portions of the area have had recorded temperatures over 100°F in recent years.

Although the project's geographical area has a semi-arid climate, the air near the surface is moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the area by offshore winds, the ocean effect is dominant. Periods with heavy fog are frequent, and low stratus clouds, occasionally referred to as "high fog," are a characteristic climate feature. The local climate is typically warm during summer when temperatures tend to be in the 80s and cool during winter when temperatures tend to be in the 60s. The warmest month of the year is August with an average maximum temperature of 87°F, while the coldest month of the year is December with an average minimum temperature of 44°F. The annual average precipitation in San Gabriel is 18.06 inches. Rainfall occurs most frequently in February, with an average rainfall of 4.66 inches.<sup>1</sup>

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<sup>1</sup> The Weather Channel, *San Gabriel, CA Monthly Weather*, <https://weather.com/weather/monthly/l/72c00ef93e5739c7c8de446fb391b845057190926d9522da9ba4aa6ada34493a>, accessed May 8, 2020.



### 3.2 EXISTING SHADOW-SENSITIVE USES

As noted above, facilities and operations sensitive to the effects of shading include: routinely usable outdoor spaces associated with residential, recreational, or institutional (e.g., schools, convalescent homes) land uses; commercial uses such as pedestrian-oriented outdoor spaces or restaurants with outdoor eating areas; nurseries; and existing solar collectors. Shadow-sensitive uses in the vicinity of the project site include the balcony and courtyard areas associated with the mixed-uses to the north of the project site. These areas are dependent on sunlight for the physical comfort of this use (outdoor space for residence).

### 3.3 EXISTING SHADE/SHADOW CONDITIONS

Existing shade/shadow diagrams were created for the existing commercial buildings within the project site. The following describes the existing shadow conditions of the project site during the summer/winter solstices and the vernal/autumnal equinoxes.

**Winter Solstice.** During the winter solstice, shadows cast from the on-site commercial buildings between the morning (9:00 a.m.) and afternoon (3:00 p.m.) hours are predominantly confined to the boundaries of the project site; refer to Exhibit 4, Existing Shade/Shadow Patterns. A limited portion of South San Gabriel Boulevard is shaded during the morning (9:00 a.m.) hour. No shadow-sensitive uses are currently shaded by the existing on-site commercial structures during the winter solstice; refer to Exhibit 4.

**Vernal Equinox.** During the vernal equinox, shadows cast from the on-site commercial buildings between the morning (9:00 a.m.) and afternoon (3:00 p.m.) hours are predominantly confined to the boundaries of the project site. A limited portion of South San Gabriel Boulevard is shaded during the morning (9:00 a.m.) hour. No shadow-sensitive uses are currently shaded by the existing on-site commercial structures during the vernal equinox; refer to Exhibit 4.

**Summer Solstice.** During the summer solstice, shadows cast from the on-site commercial buildings between the morning (9:00 a.m.) and evening (6:00 p.m.) hours are predominantly confined to the boundaries of the project site. Small portions of South San Gabriel Boulevard and Commercial Avenue are shaded during the morning (9:00 a.m.) hour; refer to Exhibit 4. However, these roads are not considered shadow-sensitive. The existing on-site commercial buildings do not currently shade any sensitive uses during the summer solstice.

**Autumnal Equinox.** During the autumnal equinox, shadows cast from the on-site commercial buildings between the morning (9:00 a.m.) and evening (6:00 p.m.) hours are predominantly confined to the boundaries of the project site. A limited portion of South San Gabriel Boulevard is shaded during the morning (9:00 a.m.) hour. No shadow-sensitive uses are currently shaded by the existing on-site commercial structures during the autumnal equinox; refer to Exhibit 4.

## Late October to Early April



Winter Solstice



Vernal Equinox

## Early April to Late October



Summer Solstice



Autumnal Equinox

### LEGEND

- 9 a.m. Shadow Pattern
- 12 p.m. Shadow Pattern
- 3 p.m. Shadow Pattern
- 6 p.m. Shadow Pattern

Note: Based on the daytime lighting conditions throughout the year, the Summer Solstice and Autumnal Equinox shadow patterns are represented from 9:00 a.m. and 6:00 p.m. and the Winter Solstice and Vernal Equinox shadow patterns are represented from 9:00 a.m. to 3:00 p.m.

## 4.0 SHADE/SHADOW ANALYSIS

### 4.1 THRESHOLDS OF SIGNIFICANCE

A project would have a significant impact pertaining to the degradation of character/quality if it would substantially block surrounding shadow-sensitive areas. Since the City of San Gabriel does not have a specific adopted threshold to determine whether or not increased shade/shadow patterns are considered significant, Michael Baker International has utilized the City of Los Angeles' adopted threshold. Further, the urbanized character of the City is similar to that of Los Angeles (pertaining to potential shade/shadow concerns) and Los Angeles is one of the few cities in southern California with an adopted threshold of significance for shade/shadow impacts. Thus, for the purposes of this analysis, a project would have a significant impact if:

- Shadow-sensitive use areas (where sunlight is important to its function) would be shaded by project-related structures for more than three hours between the hours of 9:00 a.m. and 3:00 p.m. Pacific Standard Time (between late October and early April), or for more than four hours between the hours of 9:00 a.m. and 5:00 p.m. Pacific Daylight Time (between early April and late October), compared to existing conditions.<sup>2</sup>

For the purposes of this analysis, facilities and operations sensitive to the effects of shading include: routinely useable outdoor spaces associated with residential, recreational, or institutional (e.g., schools, convalescent homes) land uses; commercial uses such as pedestrian-oriented outdoor spaces or restaurants with outdoor eating areas; nurseries; and existing solar collectors. These uses are considered sensitive because sunlight is important to function, physical comfort, or commerce.

### 4.2 IMPACTS AND MITIGATION MEASURES

**SS-1**      *Result in shading of shadow-sensitive use areas (where sunlight is important to its function) by project-related structures for more than three hours between the hours of 9:00 a.m. and 3:00 p.m. Pacific Standard Time (between late October and early April), or for more than four hours between the hours of 9:00 a.m. and 5:00 p.m. Pacific Daylight Time (between early April and late October), compared to existing conditions?*

*Level of Significance Before Mitigation: Less Than Significant Impact.*

The proposed project would demolish the existing on-site commercial buildings and surface parking and construct a new 198,358-square foot building. The proposed structure would be up to five stories (61.5 feet in height). The building frontage along South San Gabriel Boulevard would be up to four stories (58 feet in height), while the building frontage along Commercial Avenue and Gladys Avenue would be up to five stories (61.5 feet in height). The following

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<sup>2</sup> City of Los Angeles, *L.A. CEQA Thresholds Guide*, 2006.



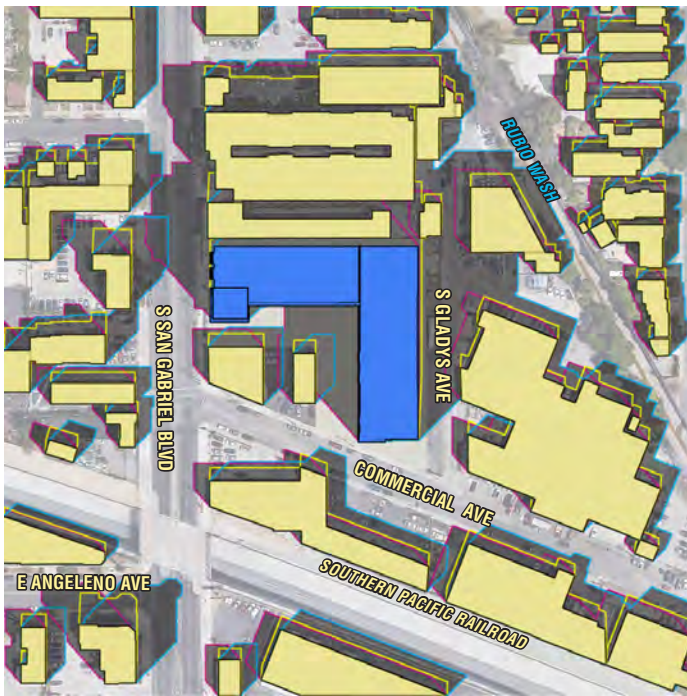
analysis describes the shadow conditions from the proposed project onto surrounding uses during the summer/winter solstices and the vernal/autumnal equinoxes.

**Winter Solstice.** On December 21, shadows are widespread within and around the project site from the morning (9:00 a.m.) to the afternoon (3:00 p.m.) hours; refer to Exhibit 5, Proposed Shade/Shadow Patterns. Morning shadows (9:00 a.m.) would spill onto South San Gabriel Boulevard, commercial uses to the north and south, and mixed-uses (commercial and residential uses) to the north. At mid-day (12:00 p.m.), shadows cast from the project site would spill onto commercial and mixed-uses to the north. Shadows cast during the afternoon (3:00 p.m.) would cast onto commercial and mixed-uses to the north as well as South Gladys Avenue and light industrial uses to the east; refer to Exhibit 5. As noted above, the commercial and mixed-uses to the north of the project site proposed project would be shaded for more than three hours between the morning (9:00 a.m.) and afternoon (3:00 p.m.). The commercial areas are not considered shadow-sensitive (as sunlight is not important to their function) and/or routinely usable outdoor spaces. The balcony areas associated with the mixed-uses to the north of the project site are considered shadow-sensitive. However, the balcony areas associated with the mixed-uses to the north experience shading under existing conditions as a result of the existing commercial uses to the north of the project site; refer to Exhibit 4. A less than significant impact would occur in this regard.

**Vernal Equinox.** Shadows generated by the proposed project on March 21, when the sun shines at a moderate angle at noon, would cast shadows to the north, northeast, east, west, and northwest between the hours of 9:00 a.m. and 3:00 p.m.; refer to Exhibit 5. The proposed project would cast shadows onto South San Gabriel Boulevard to the west and commercial uses to the north of the project site during the morning (9:00 a.m.) and mid-day (12:00 p.m.) hours. During the afternoon (3:00 p.m.) hour, shadows would be cast onto the commercial uses to the north of the project site and South Gladys Avenue to the east of the project site. As seen on Exhibit 5, the project would cast shadows onto commercial uses to the north of the project site for greater than three hours between 9:00 a.m. and 3:00 p.m. during the spring months. However, this area is not considered shadow-sensitive (as sunlight is not important to their function) and/or routinely useable outdoor space. A less than significant impact would occur in this regard.

**Summer Solstice.** During the summer solstice, the proposed project would cast shadows onto South San Gabriel Boulevard, a small portion of Commercial Avenue to the southwest, and commercial uses to the south and west during the morning (9:00 a.m.) hour. During the mid-day (12:00 p.m.) hour, shadows cast by the proposed project would primarily be contained within the project's boundary. During the afternoon (3:00 p.m.) hour, shadows cast by the proposed project would nominally be cast onto South Gladys Avenue to the east. Shadows cast during the evening (6:00 p.m.) hour would spill onto South Gladys Avenue and light industrial uses to the east. As shown in Exhibit 5, shadows cast by the project during summer solstice would not shade any off-site shadow-sensitive uses for more than four hours. A less than significant impact would occur in this regard.

## Late October to Early April

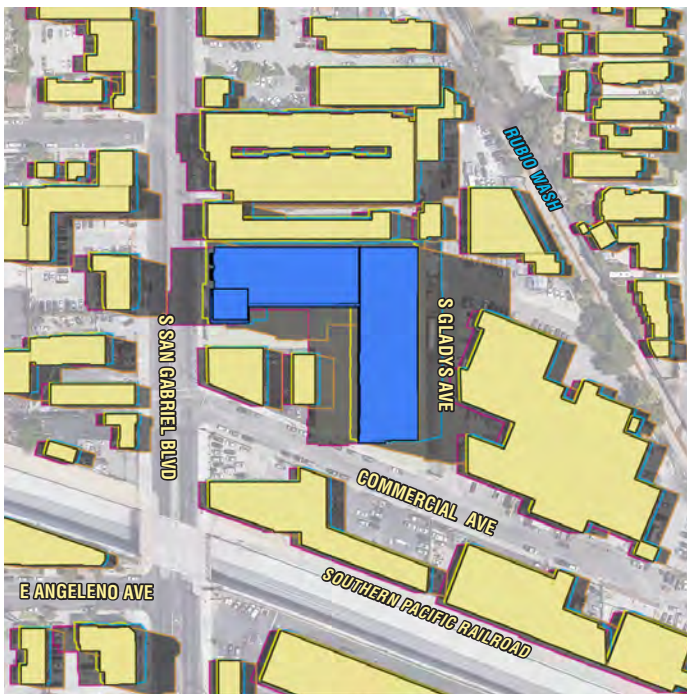


Winter Solstice



Vernal Equinox

## Early April to Late October



Summer Solstice



Autumnal Equinox

### LEGEND

- 9 a.m. Shadow Pattern
- 12 p.m. Shadow Pattern
- 3 p.m. Shadow Pattern
- 6 p.m. Shadow Pattern

Note: Based on the daytime lighting conditions throughout the year, the Summer Solstice and Autumnal Equinox shadow patterns are represented from 9:00 a.m. and 6:00 p.m. and the Winter Solstice and Vernal Equinox shadow patterns are represented from 9:00 a.m. to 3:00 p.m.

**Autumnal Equinox.** Shadows generated by the proposed project on September 21 would occur when the sun shines at a moderate angle at noon and would cast shadows to the north, east, and southeast between the hours of 9:00 a.m. and 6:00 p.m.; refer to Exhibit 5. The proposed project would cast shadows onto South San Gabriel Boulevard and commercial uses to the north and west of the project site during the morning (9:00 a.m.) hour. At mid-day (12:00 p.m.), shadows cast by the project would be similar to those cast in the morning hour, although to a lesser extent (commercial uses to the west would not be shaded). Shadows cast during the afternoon (3:00 p.m.) hour would spill onto commercial uses to the north and South Gladys Avenue to the east. During the evening (6:00 p.m.) hour, shadows would be cast onto commercial uses to the north, as well as South Gladys Avenue, light industrial uses, the Rubio Wash, and residential uses to the east. As shown on Exhibit 5, the project would cast shade to off-site uses for greater than four hours between the hours of 9:00 a.m. and 6:00 p.m. during the fall months. Specifically, commercial uses to the north would be shaded for more than four hours between 9:00 a.m. and 6:00 p.m. However, these uses are not considered a shadow-sensitive use (as sunlight is not important to its function) and/or routinely useable outdoor space. Further, the commercial uses to the north already experience shading under existing conditions. Thus, during the fall months, surrounding uses would not experience significant shadow impacts as a result of the proposed project.

### **Impact Conclusion**

The proposed project would result in new shadows cast onto surrounding commercial, light industrial, residential, and mixed-uses, as well as adjacent roadways, sidewalks, and the Rubio Wash. As discussed in Section 4.1, *Thresholds of Significance*, a significant impact would result if shadow-sensitive use areas (where sunlight is important to its function) would be shaded by project-related structures for more than three hours between 9:00 a.m. and 3:00 p.m. Pacific Standard Time (between late October and early April), or for more than four hours between 9:00 a.m. and 5:00 p.m. Pacific Daylight Time (between early April and late October), compared to existing conditions.

### **Early April to Late October**

**Summer Months.** As illustrated on Exhibit 5, the proposed project would cast shadows onto South San Gabriel Boulevard, a small portion of Commercial Avenue to the southwest, and commercial uses to the south and west during the morning (9:00 a.m.) hour. During the mid-day (12:00 p.m.) hour, shadows cast by the proposed project would primarily be contained within the project's boundary. During the afternoon (3:00 p.m.) hour, shadows cast by the proposed project would nominally be cast onto South Gladys Avenue to the east. Shadows cast during the evening (6:00 p.m.) hour would spill onto South Gladys Avenue and light industrial uses to the east. As shown in Exhibit 5, the project would not result in the shading of any shadow-sensitive uses for more than four hours between 9:00 a.m. and 5:00 p.m. Thus, during the summer months, surrounding uses would not experience significant shadow impacts as a result of the proposed project.



**Fall Months.** As illustrated on Exhibit 5, the proposed project would cast shade to off-site uses for greater than four hours between the hours of 9:00 a.m. and 6:00 p.m. during the fall months. Commercial uses to the north would be shaded for more than four hours between 9:00 a.m. and 6:00 p.m. However, this area is not considered shadow-sensitive (as sunlight is not important to its function) and/or routinely useable outdoor space. Further, the commercial uses to the north already experience shading under existing conditions. Thus, during the fall months, surrounding uses would not experience significant shadow impacts as a result of the proposed project.

### **Late October to Early April**

**Winter Months.** As illustrated on Exhibit 5, the proposed project would cast shade for greater than three hours between 9:00 a.m. and 3:00 p.m. at off-site areas in the winter months. These areas shaded for more than three hours include commercial and mixed-uses (commercial and residential) to the north of the project site. The commercial areas are not considered shadow-sensitive (as sunlight is not important to their function) and/or routinely usable outdoor spaces. The balcony areas associated with the mixed-uses to the north of the project site are considered shadow-sensitive. However, the balcony areas associated with the mixed-uses to the north experience shading under existing conditions as a result of the existing commercial uses to the north of the project site. Therefore, the project would not result in significant shade/shadow impacts during the winter months.

**Spring Months.** As illustrated on Exhibit 5, the proposed project would cast shadows onto commercial uses to north of the project site for greater than three hours between 9:00 a.m. and 3:00 p.m. during the spring months. However, this area is not considered shadow-sensitive (as sunlight is not important to its function) and/or routinely useable outdoor space. Therefore, the project would not result in significant shade/shadow impacts during the spring months.

Although the commercial and mixed-uses (commercial and residential uses) to the north would experience significant shading as a result of the project, these uses are not considered shadow-sensitive (as these areas are not dependent on sunlight for its function, and these areas are not routinely usable outdoor spaces). In addition, the areas associated with the mixed-uses to the north already experience shading under existing conditions. As such, the proposed project would not result in significant shading of the any shadow-sensitive uses for more than three hours between 9:00 a.m. and 3:00 p.m. Pacific Standard Time (between late October and early April), or for more than four hours between 9:00 a.m. and 5:00 p.m. Pacific Daylight Time (between early April and late October). A less than significant shade/shadow impact would occur with implementation of the proposed project.

**Mitigation Measures:** No mitigation measures are required.

## 5.0 REFERENCES

### 5.1 PREPARERS

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### 5.2 DOCUMENTS

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### 5.3 WEBSITES

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2. The Weather Channel, *San Gabriel, CA Monthly Weather*, <https://weather.com/weather/monthly/l/72c00ef93e5739c7c8de446fb391b845057190926d9522da9ba4aa6ada34493a>, accessed May 8, 2020.

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