IV.B. VISUAL RESOURCES
SHADE SHADOW

INTRODUCTION

This section identifies and describes the visual characteristics of the Project site and surrounding area and evaluates the potential change in the existing shadow patterns due to implementation of the Proposed Project, particularly with respect to the two apartment buildings on the south side of Franklin Avenue, north of the Project site.

ENVIRONMENTAL SETTING

The issue of shade and shadow pertains to the blockage of direct sunlight by project buildings, which may affect adjacent properties. Shading is an important environmental issue because the users or occupants of certain land uses, such as residential, recreational/parks, churches, schools, outdoor restaurants, and pedestrian areas have some reasonable expectations for direct sunlight and warmth from the sun. These land uses are termed “shadow-sensitive”.

Shadow lengths are dependent on the height and size of the building from which they are cast and the angle of the sun. The angle of the sun varies with respect to the rotation of the earth (i.e. time of day) and elliptical orbit (i.e. change in seasons). The longest shadows are cast during the winter months and the shortest shadows are cast during the summer months.

Winter and Summer Solstice

“Solstice” is defined as either of the two points on the ecliptic (i.e., the path of the earth around the sun) that lie midway between the equinoxes (separated from them by an angular distance of 90°). At the solstices, the sun’s apparent position on the celestial sphere reaches its greatest distance above or below the celestial equator, about 23 1/2° of the arc. At winter solstice, about December 22, the sun is overhead at noon at the Tropic of Capricorn; this marks the beginning of winter in the Northern Hemisphere. At the time of summer solstice, about June 22, 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. Measuring shadow lengths for the winter and summer solstices represents the extremes of the 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.

The area around the Proposed Project site was surveyed for shadow sensitive uses in May 2005. There are adjacent shadow-sensitive uses to the north and west and east of the Project site, which consist of multi-family residential properties. The land uses further east of the Project site are designed as commercial uses.
One of the commercial uses includes a gas station which is not a shadow sensitive use. Further to the east there is a large residential apartment building, a sensitive shadow receptive use, that is separated from the Project site by the gas station located at the southeast corner of the Project site.

**Existing Shadow Patterns**

The Project site is currently developed with four two-story apartment buildings.

**ENVIRONMENTAL IMPACTS**

**Thresholds of Significance**

Determination of impacts from shadows is a subjective assessment. According to the L.A. CEQA Thresholds Guide, a shadow impact is considered significant if shadow-sensitive uses would be shaded by project-related structures for more than three hours between the hours of 9:00 AM and 3:00 PM Pacific Standard Time (between late October and early April), or for more than four hours between the hours of 9:00 AM and 5:00 PM Pacific Daylight Time (between early April and late October). For the purposes of this study the thresholds outlined above will be used.

**Assumptions**

Shadow length multipliers and bearings were projected for 34° latitude, which is the latitude location for the Project site. Shadows shown for winter solstice, cast between 9:00 AM to 3:00 PM, were shown to have a maximum shadow angle of 42° in the west and 44° in the east. Thus, shadow sensitive uses located greater than 42° west or 44° east of due north would not be affected by winter shadows. Shadow patterns for summer solstice, cast from 9:00 AM to 3:00 PM, were shown to have a maximum shadow angle of 95° and 95°, respectively. Thus, shadow sensitive uses located greater than 95° west or greater than 95° east of due north would not be affected by summer shadows. The slight northwest to southeast sloping gradient on the Project site was accommodated in the shadow calculations by the shadow calculation software. Topography was not incorporated as an input in the following analysis because the changes in elevation in the area of the Project site are gradual. Building heights were based on the number of floors of each building. The dimensions, setbacks, and placement of existing buildings were estimated based on a site reconnaissance, ground photographs and aerial photographs of the project vicinity. Physical measurements of the shadows are not necessary or standard since shadow movements are calculated by the shadow calculation software.

**Project Impacts**

**Winter Shadows**

The sun angle during the winter solstice is responsible for casting the longest shadows of the year, with peak shadows occurring shortly after sunrise and before sunset.
9:00 AM

As shown in Figure IV.B-1, winter shadows cast at 9:00 AM by the Proposed Project would fall across Franklin Avenue in a northwesterly direction shading parts of the street and sidewalk and shading the two multiple-family residential buildings north of the Project site on the south side of Franklin Avenue.

12:00 PM

As shown in Figure IV.B-2, shadows at 12:00 PM would be cast in a northerly direction onto Franklin Avenue and the two multiple-family residential buildings north of the Project site on the south side of Franklin Avenue.

3:00 PM

As shown in Figure IV.B-3, shadows cast at 3:00 PM would fall in a northeasterly direction onto the multiple-family residential buildings north of the Project site on the south side of Franklin Avenue and the gas station at the southwest corner of Franklin Avenue and Gower Street.

As the multiple family residential buildings north of the Project site would be shaded at all times between the hours of 9:00 AM and 3:00 PM this would be a significant adverse impact.

Summer Shadows

9:00 AM

As shown in Figure IV.B-4, summer shadows cast at 9:00 AM by the Proposed Project would fall in a westerly direction on to one of the multiple-family residential buildings north of the Project site on the south side of Franklin Avenue and on to Vista Del Mar Avenue. However, as shown in Figure IV.B-5, 12:00 PM shadows would not shade the multiple family residential uses that immediately abut the Project site and therefore shading would not last longer than 3 hours.

12:00 PM

As shown in Figure IV.B-5, shadows at 12:00 PM would be very short and would not shade any sensitive land uses. Therefore, no significant impacts would occur.

3:00 PM

As shown in Figure IV.B-6, shadows cast at 3:00 PM by the Proposed Project would fall in an easterly direction on to Gower Street and the gas station on the southwest corner of Gower Street and Franklin Avenue. Neither of these uses are considered to be shadow-sensitive and therefore, summer shadow impacts would be less than significant.
CUMULATIVE IMPACTS

As shown in Figure II-11, there are no related projects adjacent to, or in the immediate vicinity of, the Project site that would result in any cumulative shade and shadow impacts when considered with the development of the Proposed Project. Therefore, shade and shadow impacts would not be cumulatively considerable or significant.

MITIGATION MEASURES

There are no feasible mitigation measures that would reduce the significant and unavoidable shade shadow impacts to a level of less than significant. Therefore, no mitigation can be measures suggested.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Winter shadow impacts from the Proposed Project on to the surrounding shadow sensitive land uses (the two multiple-family residential buildings north of the Project site on the south side of Franklin Avenue) would be significant and unavoidable. Summer shadow impacts would be less than significant.
Figure IV.B-1, Winter Shadows 9AM
Figure IV.B-2, Winter Shadows 12PM
Figure IV.B-3, Winter Shadows 3PM
Figure IV.B-4, Summer Shadows 9AM
Figure IV.B-5, Summer Shadows 12PM
Figure IV.B-6, Summer Shadows 3PM