CHAPTER 3.0

SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT THAT CAN BE MITIGATED

SUBCHAPTER 3.1

NOISE

CHAPTER 3.0 – SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT THAT CAN BE MITIGATED

This chapter addresses environmental issues for which one or more significant and mitigable impacts have been identified based on implementation of the Proposed Project. Identified issues include noise, geology/paleontology, biological resources, cultural resources, and utilities and service systems/public services.

At the beginning of each subchapter, there is a brief discussion of the extent to which the technical topic was addressed in the 1981 Sycamore Springs and 1983 Campus Park (Hewlett Packard) certified EIRs. A summary is presented regarding the significance identified for assessed impacts in those documents, as well as whether mitigation at that time was identified to lower significant impacts to less than significant levels. A brief assessment is then presented regarding the extent to which the earlier analyses are relevant, leading to a conclusion regarding whether or not new technical efforts are necessary for this subsequent EIR.

With regard to the impacts requiring new analyses, each of the subchapters below addresses existing conditions, presents guidelines for the significance determination (and sources thereof), analyzes the potential effects of Project implementation against existing and anticipated future conditions (including the potential cumulative effect of other likely projects also being implemented), identifies potential mitigation measures, and confirms that implementation of those measures would lower identified significant impacts to less than significant levels.

To assist the reader in tracking between impact significance conclusions and related mitigation measures, significance assessments and the associated mitigation measures have been given correlating numbers and letters. For example, for the issue of biological resources, the first significant impact is identified in text in the analysis portion of the discussion as BI-1 (i.e., Biological Resources impact number 1); the measure designed to mitigate that impact is identified as M-BI-1 (i.e., Mitigation for Biological Resources impact number 1).

3.1 Noise

The 1981 and 1983 EIRs identified traffic-generated noise impacts to residential uses as significant but mitigable. The 1981 EIR residential uses were distributed throughout the SPA boundaries, incorporating portions now assigned to commercial and office professional uses, as well as portions of the property now NAP (Palomar College and Campus Park West). The 1983 EIR located residential uses in areas now NAP (Campus Park West). Locations and types of recreational facilities (the golf course in the 1981 EIR and the developed recreation under the 1983 EIR), as well as proposed project road locations are also different.

This is an important consideration because specifics of impacts and associated mitigation measures are related to ambient noise conditions, as well as specific locations of proposed uses. Noise generated by off-site uses has increased commensurate with traffic loading on I-15, SR 76 and other area roads. On-site uses also would generate on-site traffic in different locales, at different times than the earlier projects, and with an on-site capture rate. The increases in off-site noise levels, combined with specifics related to projected on-site levels measured at proposed on-site residential and recreational locations and evaluated specifically with regard to exterior use space/potential for barriers for balconies on multi-family housing, require new analyses. Emergency generators associated with a proposed sewer lift station also comprise a project element not previously analyzed. Noise associated with construction-period activities and cumulative effects were not discussed.

These issues lead to the need for new subsequent analysis based on substantial changes having occurred with respect to the circumstances under which the Project would be undertaken, and that there is new information of substantial importance which would result in significant effects not previously discussed.

This subsection of the EIR summarizes the Campus Park Project Preliminary Noise Analysis (Urban Crossroads 2009, as amended), which is contained in Appendix E. The reader is referred to text below for new and/or revised evaluation of all issues related to noise for the Project.

3.1.1 Existing Conditions

Existing Setting

Noise Descriptors

Noise has been simply defined as "unwanted sound." Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm, or when it has adverse effects on health. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). Equivalent sound levels are not measured directly, but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA) adjusted to reflect only those frequencies that are audible to the human ear. A-weighted decibels approximate the subjective response of the human ear to broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum.

The equivalent sound level (L_{eq}) represents a steady-state sound level containing the same total energy as a time-varying signal over a given sample period.

The Community Noise Equivalent Level (CNEL) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of 5 dB to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and the addition of 10 dB to sound levels at night between 10:00 p.m. to 7:00 a.m. These additions are made to the sound levels at these time periods to account for increased human sensitivity to sound during the evening and night hours, when there is a decrease in the overall amount and loudness of noise generated, as compared to daytime hours. During these hours, the sound seems louder and is weighted accordingly. The County relies on the CNEL noise standard to assess transportation-related impacts on noise-sensitive land uses.

Traffic Noise Elements

The level of traffic noise depends on the volume of traffic, the speed of traffic, and the number of trucks in the flow of traffic because it is a combination of the noise produced by engines, exhaust, and tires. Generally, heavier traffic volumes, higher speeds, and greater number of trucks increase the loudness of traffic noise. Because of the logarithmic nature of traffic noise levels, a doubling of the traffic noise results in a noise level increase of three dBA. Based on the FHWA community noise assessment criteria, this change is barely perceptible. The truck mix on a given roadway has a substantial effect on CNEL; as the number of heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise levels increase.

Existing Ambient Noise Levels

To determine the existing noise level environment, measurements were taken at three locations on the Project site on April 23, 2007, for a minimum period of 30 minutes during the 4 o'clock p.m. hour. The existing noise levels in the Project vicinity primarily result from vehicle traffic from I-15 and the on-site low-intensity cattle ranching operations. Noise monitoring locations were selected based on anticipated

development impact locales and near the primary noise sources (roadways), and were sited in the northern and central portions of the Project site (Figure 3.1-1, Noise Monitoring Locations):

- Monitoring location 1 was located approximately 2,150 feet from the centerline of I-15 adjacent to proposed PA MF-~~3~~31.
- Monitoring location 2 was located approximately 2,500 feet from the centerline of I-15, along the proposed location of Horse Ranch Creek Road, adjacent to PA ~~MF-1~~OS-5.
- Monitoring location 3 was located approximately 325 feet from the centerline of I-15 near the proposed location of the intersection of Horse Ranch Creek Road and Baltimore Oriole Road.

The existing ambient noise levels measured on the Project site during the afternoon hour were 54.8 dBA L_{eq} at monitoring location 1, 54.9 dBA L_{eq} at monitoring location 2, and 71.1 dBA L_{eq} at monitoring location 3.

Monitoring locations were modeled to compare actual readings with predicted readings in order to calibrate the model. The reader is referred to Appendix E for specifics. Modeled existing ambient noise levels measured on the Project site include 53.9 dBA L_{eq} (54.0 dBA CNEL) at monitoring location 1, 52.1 dBA L_{eq} (52.2 dBA CNEL) at monitoring location 2, and 69.4 dBA L_{eq} (69.5 dBA CNEL) at monitoring location 3.

Regulatory Framework

Federal/State Standards

The Project proposes an active sports park, for which there is no County noise standard. County staff recommended that FHWA/Caltrans noise standards be followed for this use. The FHWA and Caltrans Noise Abatement Criteria (NAC) require a 67 dBA L_{eq}(h) exterior noise level for parks and sport areas.

County of San Diego

The County addresses two separate types of noise sources, mobile and stationary. In the context of the noise analysis, transportation noise levels associated with the Proposed Project are regulated by Policy 4b of the Noise Element in the County General Plan. County Noise Ordinance sections 36.404 and 36.409 govern operational and construction noise levels, respectively.

Off-site project impacts generally focus on transportation-related noise associated with increases in project-related vehicular activity. Noise level increases and impacts attributable to development of a project are estimated by comparing the "plus project" ADT to the "without project" ADT (refer to Subchapter 2.1 of this EIR). Noise impacts are considered significant if a project would raise noise levels above the County 60 dBA CNEL standard, unless the existing noise level without project is 58 dBA or greater when a 3 dBA increase is allowed up to the maximum permitted by the FHWA Standards.

County of San Diego Noise Element

The County has adopted interior and exterior noise standards as part of the Noise Element in the General Plan for assessing the compatibility of land uses with transportation-related noise impacts. For assessing noise impacts to sensitive residential land uses, the County requires an exterior noise level of 60 dBA CNEL or less for outdoor living areas and an interior noise standard of 45 dBA CNEL.

County of San Diego Noise Ordinance

Section 36.404 of the County Noise Ordinance provides performance standards and noise control guidelines for determining and mitigating non-transportation (stationary) noise source impacts to residential properties. The purpose of the noise ordinance is to protect, create, and maintain an environment free from noise and vibration that may jeopardize the health or welfare, or degrade the quality of life.

According to County stationary source exterior noise standards, no person shall operate any source of sound at any location within the County or allow the creation of any noise on a property that causes the noise levels to exceed the exterior noise limits at the property boundary within non-industrial zones. The noise ordinance sets an exterior noise limit for residential land uses adjacent to the property of 50 dBA L_{eq} for daytime hours of 7:00 a.m. to 10:00 p.m. and 45 dBA L_{eq} during the noise-sensitive nighttime hours of 10:00 p.m. to 7:00 a.m.

Section 36.409 of the Noise Ordinance controls construction equipment noise and establishes a 75 dBA L_{eq} standard between 7 a.m. and 7 p.m. Monday through Saturday at the property line of off-site residences during on-site construction. For temporary activities, the County sets a threshold of 75 dBA averaged over a period of eight hours. The County Noise Ordinance also states that no person shall operate any construction equipment so as to cause an average sound level greater than 75 dBA at or beyond the property line of any property upon which a legal dwelling unit is located. The sound-level limit at a location on a boundary between two zoning districts is the arithmetic mean of the respective limits for the two districts.

Section 36.410 of the County Ordinance sets sound level limitations on "impulsive" or "single event" noise. In addition to the general limitations on sound levels in Section 36.404, and excluding emergency work, work on a public road project shall not result in an impulsive noise that exceeds the maximum sound levels shown in Tables 36.410A and 36.410B of the Noise Ordinance at properties boundaries.

County of San Diego Standards for Sensitive Birds

In 1991, the USFWS recommended that noise levels not exceed 60 dBA or ambient conditions (whichever is greater) to protect the coastal California gnatcatcher and other sensitive bird species. For this reason, the Project analysis proposes the 60 dBA L_{eq} or ambient levels as the noise criterion to assess noise impacts on sensitive wildlife both on and off site. Subchapter 3.4, Biological Resources, addresses potential impacts to sensitive birds.

3.1.2 Guidelines for the Determination of Significance

Guidelines of Significance

A significant direct noise impact would occur if Project implementation would:

1. Expose any on-site future noise sensitive areas to noise (including road noise) in excess of 60 dBA CNEL or an increase of 10 dBA CNEL over pre-existing conditions.

2. Expose interior on- or off-site, existing or planned noise-sensitive areas to noise in excess of 45 dBA CNEL. For rooms in the noise sensitive areas, which are usually occupied only part of the day (schools, libraries, or similar), the interior one-hour average sound level due to noise outside, should not exceed 50 dBA CNEL.

3. Elevate noise levels above the County 60 dBA CNEL standard unless the existing noise level without Project is 58 dBA or greater when a 3 dBA increase is allowed up a maximum permitted by FHWA Standards.

4. Generate noise that exceeds the standards listed under the San Diego County Code, Section 36.404, Sound Level Limits, at or beyond the property line.

5. Generate construction noise that exceeds the standards listed in the San Diego County Code, Section 36.409, Construction Equipment.

A cumulatively considerable noise impact would occur if Project implementation would:

6. Increase noise levels by more than one dBA under cumulative conditions.

Guideline Sources

Guideline Nos. 1, 2, 4, 5 and 6 are taken from the County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Noise (February 4, 2009). Guideline 3 is additionally derived from state regulations that address human health and quality of life concerns. The 3-dBA CNEL change in Guideline No. 3 acknowledges a just-perceivable difference in noise levels, and 60 dBA CNEL is the standard for maximum outdoor noise levels in residential areas.

3.1.3 Analysis of Project Effects and Determination as to Significance

The Sound32 traffic noise model was used to project the expected Campus Park roadway noise impacts. The analysis was based on the Caltrans *Highway Design Manual* California Vehicle Noise Emission Levels (Calveno Curves), which most accurately reflect motor vehicle noise characteristics in the Project area. The key input parameters include lane travel speed; percentages of automobiles, medium trucks, and heavy trucks in the roadway volume; site conditions ("hard" or "soft"); and peak hour traffic volumes. Soft site conditions were used in the noise analysis for first-floor receptors based on the topography in the Project site area. Hard site conditions were used for all second-floor receptors.

The Sound32 model calculates the peak hour L_{eq} dBA noise level; these numbers were converted into CNEL values. The L_{eq} to CNEL calculations are based on a typical vehicle distribution over a 24-hour period with the appropriate noise penalties for the evening and nighttime periods. Project grading plans were used to identify the relationship between roadway centerline elevation, pad elevation, and centerline distance to the noise barrier; backyard receptors; and at the building façade to predict the future noise environment. A calibration factor was used for all receptors located behind a row of proposed buildings for all modeled areas. Typically, three dB of attenuation is allowed for the first row of buildings when they block 40 to 65 percent of the line-of-sight to the noise source, and three to five dB is allowed when the buildings obstruct more than 65 percent of the line-of-sight. A conservative factor of three dBA was taken into account for the applicable buildings on the Project site, and no grade correction was included.

To simulate noise impacts following development of the Proposed Project, outdoor receptors located in noise sensitive areas (NSAs) were placed 5 feet above the pad elevation and approximately 10 feet from the top of slope. All first-floor receptors were placed 5 feet above the proposed finished floor elevation at the building façade, and all second- and third-floor receptors were located 15 and 25 feet above the proposed finished floor elevation, respectively.

To assess peak hour traffic noise conditions, 10 percent of the ADT was assigned to all study area roadways. The future traffic noise model uses vehicle mixes, including: 96 percent for automobiles, 2 percent for medium trucks, and 2 percent for heavy trucks for all internal Project roads, and 90 percent for automobiles, 3 percent for medium trucks, and 7 percent for heavy trucks for I-15. (This mix was verified during monitoring; a video camera was placed adjacent to monitoring location 3 to confirm the I-15 vehicle mix.)

While a number of roadways are located in the Project area (see Table 6-1 in Appendix E), a combination of Year 2030 vehicle noise from I-15 and SR 76, and proposed Pala Mesa Drive, Horse Ranch Creek Road, and Pankey Place would comprise the principal source of community noise within the Project site. The Project buildout scenario includes the conservative future Year 2030 traffic volume forecasts from the Traffic Impact Study developed for the 1,076-residential unit project (LOS Engineering, Inc. 2009; Appendix C of this EIR). Horse Ranch Creek Road would be classified as a light collector north of Baltimore Oriole Road and a boulevard south of Baltimore Oriole Road to SR 76. Pankey Road, Pala Mesa Drive ~~(north of Pankey Place)~~ and Pankey Place would be classified as light collectors. ~~Pala Mesa Drive between Pankey Place and SR 76 would be classified as a collector.~~ SR 76 is classified as a major roadway. Estimated traffic speeds of 40 mph for boulevards, 45 mph for light collectors, and 55 mph for major roadways were used based on the County of San Diego Department of Public Works Public Road Standards. (Horse Ranch Creek Road would have a speed limit of 40 mph.) A traffic speed of 65 mph was used for I-15.

The exterior noise levels were analyzed for existing and buildout conditions. An analysis was performed to determine the acoustical shielding that might be used to reduce the expected roadway noise impact for the affected outdoor usable areas. Key input data for these barrier performance equations include relative source-barrier-receiver horizontal separations, relative source-barrier-receiver vertical separations, typical noise source spectra, and barrier transmission loss.

The reader should note that all dB CNEL in the text below has been rounded to the nearest whole number and numbers in the tables are rounded to the nearest tenth.

Traffic Noise Impacts to Proposed On-site Uses (Guidelines No. 1, 2, and 4)

Figure 3.1-2, 2030 Buildout Contours, shows the locations of the first- and second-floor 75 and 60 dBA CNEL noise contours on the Project site. (Noise contours are lines that are drawn around a noise source indicating a constant or equal level of noise exposure and are generally used as a planning tool to assess the need for additional analysis.) Specifically, Figure 3.1-2 provides the location of the first- and second-floor 75 dBA CNEL noise contour boundary from I-15 and the 60 dBA CNEL contour boundary from the combined roadways. The 75 dBA CNEL contour boundary from Horse Ranch Creek Road is located within the public right-of-way and is not shown on the figure. The noise contours do not take into account Project grading or buildings. As shown on Figure 3.1-2, the 75 dBA CNEL contour is located generally west of the Project site. The location of the 60 dBA CNEL contour, however, indicates that sensitive use areas on the Project site would experience noise levels in excess of the County's exterior noise standard, as much of the Project site would be located between the 75 and 60 dBA contours. Based on this finding, additional detailed exterior noise analyses were performed for each sensitive use planning area, which took into account Project-related landform alteration and construction of buildings. Modeled observation locations were identified for the northern and southern single-family residential neighborhoods, as well as for each of the multi-family residential planning areas. Impacts to these areas at buildout (modeled) are described in further detail below, north to south.

Buildout Scenario Exterior Noise Analysis – Northern Single-family Residential Area (PAs R-4 and R-5)

Figure 3.1-3, Modeled Receptor Locations for PA R-4 and R-5, shows modeled exterior noise locations at 38 receptor sites within PAs R-4 and R-5. Table 3.1-1, PAs R-4 and R-5 Buildout Condition – Exterior Noise Levels, indicates that 6 of the 38 modeled receptor locations (receptors 9 through 14) would experience ground floor exterior noise levels that would exceed the County standard of 60 dBA CNEL. The impacted receptors would face Jaeger Street and Baltimore Oriole Road. As ground-level sensitive receptor sites in PA R-4 would experience noise levels that are greater than the County standard of 60 dBA CNEL, a **significant impact** would occur. (**Impact N-1**)

Buildout Scenario Exterior Noise Analysis – Southern Single-family Residential Area (PAs R-1, R-2, and R-3)

Table 3.1-2, PAs R-1, R-2, and R-3 Buildout Condition – Exterior Noise Levels, shows that 6 of the 34 modeled receptor locations (receptors 1 through 5 and 14) would experience ground floor exterior noise levels that would exceed the County guideline for outdoor areas. The receptor locations are shown on Figure 3.1-4, Modeled Receptor Locations for PAs R-1, R-2, and R-3. The receptors with noise levels that exceed the County standard would be located in PA R-1 and would front on the office professional area, and active sports park. A **significant impact** would occur in that area of PA R-1. (**Impact N-2**)

~~Buildout Scenario Exterior Noise Analysis – PA MF-1~~

~~PA MF-1 does not include private use areas on the first floor; however, balconies are located on the second floor of all units. Table 3.1-3 shows that 5 of the 20 modeled receptor locations (receptors 6, 10, 13, 19, and 20) would experience second-floor exterior noise levels that would exceed the County guideline for outdoor areas. The receptor locations are shown on Figure 3.1-5, Modeled Receptor Locations for PA MF-1. These impacted areas would occur along Horse Ranch Creek Road. A **significant impact** would occur. (**Impact N-3**)~~

Buildout Scenario Exterior Noise Analysis – PA MF-~~3~~1

Within PA MF-~~3~~1, 6 of the 24 modeled receptor locations (receptors 1, 5, 9, 13, 17, and 21) would experience an exterior ground-floor noise level exceeding the County guideline. The receptor locations are shown on Figure 3.1-~~5~~7, Modeled Receptor Locations for PA MF-~~3~~1. These impacted areas would be located adjacent to the Town Center and Longspur Road. A **significant impact** would occur. (**Impact N-~~5~~3**)

Buildout Scenario Exterior Noise Analysis – PA MF-2

Within PA MF-2, 14 of the 22 modeled receptor locations (receptors 1 through 7, 10, 13 through 17, and 19) would experience ground-floor exterior noise levels that would exceed the County guideline. Figure 3.1-6, Modeled Receptor Locations for PA MF-2, shows the receptor locations. The noise-impacted areas would extend along Horse Ranch Creek Road and Harvest Glen Lane. A **significant impact** would occur. (**Impact N-4**)

~~Buildout Scenario Exterior Noise Analysis – PA MF-4~~

~~Within PA MF-4, all but 3 (receptors 10, 11, and 12) of the 25 modeled receptor locations would experience an exterior ground-floor noise level exceeding the County guideline. The receptor locations are shown on Figure 3.1-8, Modeled Receptor Locations for PA MF-4. **Significant impacts** would occur. (**Impact N-6**)~~

Buildout Scenario Interior Noise Analysis – Residential Developments

The interior noise level is the difference between the predicted exterior noise level at the building façade and the noise reduction of the structure. Typical building construction provides a noise reduction of approximately 12 dBA with the windows open and 20 dBA with the windows closed. Because the exterior noise levels would be greater than 60 dBA CNEL at some receptors, the interior levels also are projected to be greater than the 45 dBA CNEL guideline established by the County. Impacts to the interior of proposed homes would be **significant**. (**Impact N-~~7~~5**)

Buildout Scenario Exterior Noise Analysis – Other Sensitive Use Areas

The project proposes six neighborhood parks in single-family residential areas (PAs P-1, P-2, and P-5~~4~~ through P-8~~6~~), an HOA recreational facility (PA P-3), a trail staging area (PA P-4), and one sports complex (PA SC-1). These recreational areas are shown on Figure 3.1-7~~9~~, Modeled Receptor Locations for Other Sensitive Uses. As indicated on Table 3.1-7, the projected exterior noise levels at PAs P-1 and P-2, as well as the recreational ~~acres~~ areas associated with PAs MF-1~~,~~ and MF-3~~2~~, ~~and MF-4,~~ would conform to the County's noise standard of 60 dBA CNEL. Noise levels at PA P-2 (receptor 2) would exceed the buildout exterior noise levels (61 dBA CNEL). **Significant impacts** would occur. (**Impact N-~~8~~6**)

The project proposes a sports complex consisting of baseball and soccer fields, for active sports participation. The County does not have a standard for sports complexes; however, cities in the County have set thresholds at a 70 dBA CNEL exterior level. The County has opted to use federal standards (FHWA and Caltrans NAC) set a 67 dBA L_{eq}(h) exterior noise level for parks and sport areas. Noise levels at the proposed sports complex could be as high as 66 dBA CNEL. Therefore, noise impacts to the sports complex are identified as **less than significant**.

Sewer Lift Station

As stated in Chapter 1.0, the Proposed Project includes a sewer lift station located in PA I-1, ~~west~~ east of ~~Pala Mesa Drive~~Pankey Road, south of the proposed trailing staging area for hikers and equestrians, and north of Pala Road (SR 76). The lift station and proposed use to the south across SR 76 are both zoned commercial. East of the proposed pump station site/staging area, and west of Pankey Road, biological open space is proposed by the Project. Streetscape vegetation (including trees, shrubs, and ~~vines~~grasses) would be provided between the viewers along SR 76 and ~~the multi-family housing~~Project uses. Proposed residential uses are planned further to the east as part of Meadowood and to the west as part of Campus Park West~~would be abutted by commercial uses to the south, residential uses to the northeast, and a trail staging area and biological open space to the west~~. The County Noise Ordinance sets ~~an~~ exterior noise limits of 50 dBA L_{eq} for property lines adjacent to ~~the~~ residential uses ~~adjacent to the property of~~and ~~50~~ 60 dBA L_{eq} for property lines adjacent to commercial uses. These thresholds pertain for daytime hours of 7:00 a.m. to 10:00 p.m., with limits of and 45 and 55 dBA L_{eq} respectively, during the noise sensitive nighttime hours of 10:00 p.m. to 7:00 a.m. The adjacent biological open space has an hourly standard of 60 dBA L_{eq}. ~~The most restrictive limit of 45 dBA L_{eq} was used in this analysis.~~

~~The lift station is designed to be enclosed in an above-ground structure. Measurements were taken at an above-ground pump station by Urban Crossroads on October 7, 2004. The enclosed pump measured a worse-case noise level of 58.1 dBA L_{eq} at a distance of 25 feet at the location of the ventilation (louvers). The edge of the proposed lift station lot would be located approximately 130 feet from the adjacent residential Pala Mesa Drive. Utilizing a drop-off rate of 6 dBA per doubling of distance, the above-ground pump station would produce a worse-case property line noise level of 42.8 dBA L_{eq} at a distance of approximately 145 feet.~~

Pump stations also typically contain emergency or back up generators, which potentially generate the loudest noise at such a facility. The Project backup generator is assumed to be 80 kilowatts (kW) in size. Based on manufacturer (Kohler) information, such a generator could generate unmitigated sound levels of ~~79~~ 70 dBA L_{eq} at a distance of 23~~50~~ feet from the source if equipped with the manufacturer's sound enclosure ~~if the generators are above ground~~.

The station is proposed to be located a minimum of 35 feet from the trail staging area and 100 feet from the edge of biological open space. Utilizing a drop-off rate of 6 dBA per doubling of distance, as demonstrated on Table 3.1-8, Property Line Noise Levels with Sound Enclosure, noise generated by the pump station would fall within acceptable limits for each property line. Specifically, it would meet or exceed standards of 45 dBA L_{eq}

at abutting residential lots, 55 dBA L_{eq} at an abutting commercial lot, 60 dBA L_{eq} at abutting biological open space lots, and 67 dBA L_{eq} at the abutting trail staging area.

~~To minimize noise levels, the ventilation on the pump station should be located on the side of the building farthest from any property boundary. In addition, s~~Sound level certification measurements of the sewer lift station activities should be conducted at the nearest property line once the station is operational to ensure compliance with the County Noise Ordinance.

Until the structure is built and sound generation is confirmed, a conservative **significant impact** to the adjacent ~~MF-4 residential development and~~ open space is identified. (**Impact N-~~9~~7**)

Traffic Noise Impacts to Off-site Uses (Guideline No. 3)

Off-site transportation-related noise would be associated with the development of the Project. Noise level increases and impacts attributable to development of the Proposed Project are estimated by comparing the existing traffic volumes to the Existing Plus Project traffic volumes.

To assess off-site noise level impacts associated with development of the Proposed Project, noise contours were developed for the existing (present-day noise conditions without construction of the Proposed Project) and Existing Plus Project (present-day noise conditions with buildout of the Proposed Project) traffic scenarios. Table 3.1-8 presents a comparison of the Existing and the Existing with Project noise levels. Roadway noise levels would increase between 0.1 and 7.8 dBA CNEL with the development of the Proposed Project. The Project would result in an increase of more than 3 dBA CNEL along Stewart Canyon Road between Old Highway 395 and Horse Ranch Creek Road, but would not increase existing noise levels above the 60 dBA CNEL at 100 feet. There are no existing sensitive receptors along this road segment, and no sensitive uses are proposed. Therefore, off-site traffic noise impacts would be **less than significant**.

Short-term Construction Noise (Guideline No. 5)

Construction noise represents a short-term impact on the ambient noise levels. Noise generated by construction equipment, including trucks, graders, bulldozers, and scrapers can reach high levels. Grading activities typically represent one of the highest potential sources for noise impacts. A total of 2 D-6 dozers, 2 D-8 dozers, 6 D-9 dozers, 4 834 rubber-tire dozers, 12 657 scrapers, 2 16-6 blades, 8 water trucks, and 4 dump trucks would be required to complete the proposed grading operations, with Project grading anticipated to last two years. In the event that blasting is required, one hoe ram and two rock drills would be utilized to complete the proposed grading operations. Rock resulting from blasting is expected to be used on site in its raw state and no rock crushing would be required.

Construction equipment noise levels can range from 70 to 85 dBA at 50 feet (see Table 9-1 in Appendix E). The most effective method of controlling construction noise is through local control of construction hours and by limiting the hours of construction to normal weekday working hours. The Proposed Project would be graded in two main phases. Phase I would involve the southerly portions of the site, and Phase II would involve the northerly portions of the site. Construction may begin on Phase II prior to the completion of grading for Phase I and occupancy in the residential lots on the Project site is anticipated prior to the completion of grading for the entire Project. All construction activities may only occur during the time period stated in Section 36.409 of the County Noise Ordinance (i.e., 7 a.m. to 7 p.m. Monday through Saturday). This time limit includes the queuing of trucks outside and inside of the Project site and the warming up and idling of any engines and equipment.

The USEPA has compiled data regarding the noise generating characteristics of specific types of construction equipment. Noise levels generated by heavy construction equipment can range from approximately 60 dBA to

noise levels in excess of 100 dBA when measured at 50 feet. However, these noise levels diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 68 dBA measured at 50 feet from the noise source to the receptor would be reduced to 62 dBA at 100 feet from the source to the receptor and would be further reduced to 56 dBA at 200 feet from the source to the receptor. Because routine construction practices would result in the equipment being spread throughout the site on different task, no significant impacts are anticipated. If all Project grading equipment were placed in a central location, the equipment would have a noise level of 92.7 dBA at 50 feet. Using a 6 dBA reduction per doubling of distance, at distances farther than 375 feet from any property line, the noise levels would comply with the County's 75 dBA standard.

If all the blasting equipment were placed in a central location in the northern portion of the proposed single-family units in combination with other construction equipment, as discussed in the preceding paragraph, the equipment would generate a noise level of 94.5 dBA at 50 feet. Utilizing a six dBA reduction per doubling of distance, the noise levels would comply with the County of San Diego's 75 dBA standard and the Noise Ordinance criteria at distances further than 450 feet from any property line. Blasting would occur on an as-needed basis across the northern portion of the proposed single-family units and may only take place two times each day. No existing sensitive receptors are located within 450 feet of the potential blasting areas.

This conservation analysis, however, assumes that it is possible that grading equipment may all be staged within less than 375 feet from the property line or Phase 1 homes within the development.

If, as expected, the construction equipment were to be spread out around the Project site, no significant impacts would occur. In the unlikely event that all grading equipment is staged within 375 feet of any property line or on-site residents of Campus Park, or all grading and blasting operations are staged within 450 feet from a property line or on-site residents on Campus Park, temporary **significant impacts** may occur. (**Impacts N-~~10a~~ 8a and b**)

3.1.4 Cumulative Impact Analysis

Project-generated noise primarily would be associated with Project-related traffic. The cumulative study area associated with noise identified for the Proposed Project therefore included other projects affecting area roads also impacted by the Proposed Project (refer to Subchapter 2.2, Transportation/Traffic). To assess the off-site noise level cumulative impacts associated with Project implementation in conjunction with other planned developments in the area (refer to Table 1-14 of this EIR), noise contours were developed for both the existing and cumulative plus Project scenarios. The latter scenario refers to the background noise conditions for near-term conditions, which corresponds to the completion of the Project's buildout plus a 10 percent growth factor to include additional future cumulative developments.

Table 3.1-9, Off-site Traffic-related Cumulative Noise Impacts, presents a comparison of the Existing and the Cumulative with Project noise levels. In the cumulative buildout condition, roadway noise levels would increase between 0.1 and 2.0 dBA CNEL with the development of the Proposed Project and cumulative projects. As stated in Section 3.1.2 of this subchapter, roadway noise impacts would be significant if a project raises the existing noise level by more than one dBA. As shown on Table 3.1-9, the Proposed Project would increase cumulative traffic noise levels by more than one dBA along two road segments: Pankey Road between SR 76 and Dulin Road and Stewart Canyon Road between Old Highway 395 and Horse Ranch Creek Road.

There are no rear yards or other noise sensitive land uses located adjacent to these segments, however, and none are proposed along these segments of Pankey Road and Stewart Canyon Road. (In fact, the affected Stewart Canyon Road segment passes under I-15 and is located primarily within Caltrans right-of-way.) **No impact** is identified.

Cumulative construction noises also may occur if a portion of the Project is occupied during construction of the remainder of the Project and/or the construction of adjacent projects. Noise impacts would only be cumulatively considerable if construction activities were to occur within 375 feet of on- or off-site occupied residences. Although precise construction timeframes for Campus Park West and Meadowood are currently unknown, a conservative approach is taken for this issue and it is assumed that two or more projects could be under construction simultaneously after some residents are already moved into the development(s). If so, **significant cumulative impacts** related to construction noise could occur. (**Impact N-~~11~~9)**

3.1.5 Significance Prior to Mitigation

The following significant impacts related to noise would occur with Project implementation:

Impact N-1 Exterior ground-level receptors within PA R-4 would experience noise levels greater than the County standard of 60 dBA CNEL.

Impact N-2 Exterior ground-level receptors within PA R-1 would experience noise levels greater than the County standard of 60 dBA CNEL.

~~Impact N-3 Exterior second-floor receptors within PA MF-1 would experience noise levels greater than the County standard of 60 dBA CNEL.~~

Impact N-~~5~~3 Exterior ground-level receptors within PA MF-~~3~~ 1 would experience noise levels greater than the County standard of 60 dBA CNEL.

Impact N-4 Exterior ground-level receptors within PA MF-2 would experience noise levels greater than the County standard of 60 dBA CNEL.

~~Impact N-6 Exterior ground-level receptors within PA MF-4 would experience noise levels greater than the County standard of 60 dBA CNEL.~~

Impact N-~~7~~5 At receptors where the exterior noise would be significant, interior noise levels also would exceed the County standard of 45 dBA CNEL.

Impact N-~~8~~6 Noise levels at PA P-3 would exceed the County standard of 60 dBA CNEL.

Impact N-~~9~~7 Pending post-construction testing, ~~N~~noise levels associated with emergency generators for the proposed sewer lift station in PA I-1 may exceed the County standard ~~of 60 dBA CNEL~~ at the nearest property line.

Impacts N-~~10a~~ 8a and b
A temporary significant impact associated with construction operations (grading and blasting) may occur to off-site residences or to potential on-site residents of Campus Park.

Impact N-~~11~~9 Because occupied residences may be within 375 feet of construction activities, significant cumulative impacts related to construction noise could occur.

3.1.6 Mitigation

On-site Exterior Noise

M-N-1 Nine-foot high noise attenuation barriers shall be constructed along the property boundaries of lots 285 through 301 within PA R-4 and the HOA recreational facility (PA P-3) (Figure 3.1-~~10~~8, Location of Noise Attenuation Barriers).

The designed noise screening may only be accomplished if the barrier weight is at least 3.5 pounds per square foot of face area and if barriers have no decorative cutouts or line-of-site openings between shielded areas and the roadways. All gaps (except for weep holes) should be filled with grout or caulking. Recommended noise attenuation barriers may be constructed using one of the following alternative materials:

1. Masonry block;
2. Stucco veneer over wood framing (or foam core), or one-inch-thick tongue and groove wood of sufficient weight per square foot;
3. Glass (¼ inch thick), or other transparent material with sufficient weight per square foot;
4. Earthen berm; and/or
5. Any combination of these construction materials.

M-N-2 Ten-foot high noise attenuation barriers shall be constructed along the property boundaries of lots 21 through 52 within PA R-1 (Figure 3.1-~~10~~8). The barriers shall be designed as stated above in M-N-1.

~~M-N-3 Outdoor balconies of the residences adjacent to Horse Ranch Creek Road and the two southernmost units within PA MF-1 shall require six-foot high noise attenuation barriers (Figure 3.1-10). The barriers shall be designed as stated above in items 2 and/or 3 of M-N-1.~~

M-N-~~5~~3 Ten-foot high noise attenuation barriers shall be constructed along portions of MF-~~3~~-1 that front the Town Center and a portion of Longspur Road (Figure 3.1-~~10~~8). The barriers shall be designed as stated above in M-N-1.

M-N-4 Ten-foot high noise attenuation barriers shall be constructed along portions of MF-2 that front Horse Ranch Creek Road and Harvest Glen Lane (Figure 3.1-~~10~~8). The barriers shall be designed as stated above in M-N-1.

~~M-N-6 Eight-foot high noise attenuation barriers shall be constructed along portions of MF-4 that front Pala Mesa Drive and Pankey Place and 10-foot high noise attenuation barriers shall be constructed along portions of MF-4 that front SR-76 (Figure 3.1-10). The barriers shall be designed as stated above in M-N-1.~~

On-site Interior Noise

M-N-~~7~~5 A final noise study for the second floors of all single- and multi-family homes on the Project site shall be prepared prior to obtaining building permits for the Project. The report shall finalize the noise requirements based on actual building design specifications. Noise requirements could include the following:

- A "windows closed" condition shall be provided that requires a means of mechanical ventilation for the second floors of all single- and multi-family houses.
- The second floors of all single- and multi-family houses shall be provided with weather-stripped solid-core exterior doors.
- Exterior wall/roof assembles shall be free of cutouts and openings.
- Upgraded windows shall be provided for the second floors of single- and multi-family houses.

Preliminary exterior and interior noise requirements for tentative tract map approval shall be presented in the final noise report prior to obtaining building permits.

Park Areas

M-N-~~8~~6 Nine-foot high noise attenuation barriers shall be constructed along the western side of the northern half of PA P-3 (Figure 3.1-~~10~~8). The barriers shall be designed as stated above in M-N-1.

Sewer Lift Station

M-N-~~9~~7 The generators shall be equipped with the manufacturer's sound enclosure to decrease noise levels to 70 dBA at 23 feet to comply with ~~located in a cinder block building that utilizes acoustical louvers to decrease the noise level to the~~ adjacent property line standards. Additionally, the proposed generator must be sited within the parcel a minimum of 35 feet from the trail staging area and 100 feet from biological open space. ~~The louvers shall be placed on the southern side of the building. The sides of the building facing east, north, and westshall be completely free of any openings or ventilation.~~ Sound level measurements shall be conducted at the nearest property line once the pump stations are fully operational to ensure compliance with the County's Noise Ordinance.

Construction Noise

M-N-~~10a~~ 8a and b

A specific mitigation plan based upon the location of the construction equipment and/or blasting activities shall be identified by a County-approved acoustical engineer. If construction noise impacts are anticipated, the Project Applicant shall install a temporary noise attenuation barrier along any property line, or at an appropriate location (e.g., between newly constructed and occupied housing and later phases of construction). The mitigation plan shall determine the height and location of any necessary temporary barriers based on elevations of the construction area relative to the sensitive receptor and specific types of equipment being used. The barrier shall be constructed of solid non-gapping wood and shall comply with the County's 75 dBA standard and Noise Ordinance criteria for construction operations.

Cumulative Noise

M-N-~~11~~9 Cumulative impacts associated with construction to future on-site residences would be mitigated by the implementation of Mitigation Measure M-N-~~10a~~ 8a and b.

3.1.7 Conclusion

The Proposed Project would result in significant on-site noise impacts related to traffic. Specifically, significant impacts associated with exterior noise levels would occur to receptors within PAs R-1, R-4, and MF-1 ~~through 4~~and 2 (Impacts N-1 through ~~6~~4). Significant interior noise impacts are assessed at these locations as well (Impact N-~~7~~5). Noise levels at the HOA recreation facility (PA P-3) also would exceed County standards, thus resulting in a significant impact (Impact N-~~8~~6). Mitigation for these impacts would include construction of noise attenuation barriers at various heights (determined by the amount of traffic on a roadway), as discussed above, which would reduce impacts to below a level of significance for exterior and ground level interior effects. The final noise study prepared for the second floors of all single- and multi-family homes on the Project site would finalize interior requirements based on actual building design specifications and would ensure that County standards are met.

Emergency generators associated with the proposed sewer lift station may result in significant noise impacts while the generators are being tested or used for back up purposes (Impact N-~~9~~7). To mitigate impacts, the emergency generators would be equipped with the manufacturer's sound enclosure, and sited specific minimum distances from biological open space and recreational use property lines~~placed in a cinder block building with louvers facing away from sensitive land uses (residences and open space~~. Certification testing following construction would ensure that County standards are met.

Temporary construction noise impacts have the potential to be significant. In the unlikely event that all grading equipment is staged within 375 feet of any property line or on-site residents; or if grading equipment and blasting activities occur within 450 feet within of any property line or on-site residents, a temporary significant impact may occur (Impacts N-~~10~~ 8 and ~~11~~9). If, as expected, the construction equipment were to be spread out around the Project site, no significant impacts would occur. If significant impacts would occur, temporary noise attenuation barriers would be placed between the noise source and affected receptors.

Cumulative impacts associated with temporary construction noise (Impact N-~~11~~9) also would be mitigated by the implementation of Mitigation Measures M-N-~~10a~~ 8a and b and would include the construction of temporary and permanent noise attenuation barriers, which would reduce any cumulative impacts to less than significant levels.

Implementation of the proposed mitigation would ensure compliance with the County Noise Ordinance. The purposes of the Noise Ordinance include controlling disturbing, offensive and excessive noise, providing an environment in which noise is not detrimental to life, health and enjoyment of property and "securing and promoting the public health, comfort, convenience, safety, welfare, prosperity, peace and quiet of the County of San Diego and its inhabitants" (County Code Sections 36.401(b), (d), and (e)). Compliance with Noise Ordinance limits would ensure that noise generated on the Project site would fall within the dB levels specified in the ordinance. This would comprise effective mitigation as the dB level standards specified in the ordinance are those generally found to be compatible with abutting sensitive receptors within the contour. This measure would adequately minimize disturbance to on-site residences, parks, and open space.

Table 3.1-1
PAs R-4 AND R-5 BUILDOUT CONDITIONS – EXTERIOR NOISE LEVELS (dBA CNEL)

Receptor	Unmitigated Ground Floor Exterior Noise Level[1]	Barrier Height (in Feet)[2]	Mitigated Ground Floor Exterior Noise Level[1]	Second Floor with Barriers Façade Noise Level[1,3]
1	54.2	N/A	54.2	59.1
2	54.7	N/A	54.7	59.5
3	57.8	N/A	57.8	62.1
4	59.4	N/A	59.4	63.8
5	55.7	N/A	55.7	59.9
6	56.9	N/A	56.9	60.6
7	57.7	N/A	57.7	60.7
8	57.9	N/A	57.9	60.9
9	**61.9**	9.0	59.0	66.0
10	**63.1**	9.0	60.3	67.5
11	**63.9**	9.0	60.4	68.6
12	**64.6**	9.0	59.4	69.7
13	**63.5**	9.0	60.4	68.2
14	**60.8**	N/A	60.3	64.8
15	60.2	N/A	60.1*	64.4
16	60.2	N/A	60.1*	64.1
17	59.2	N/A	59.2	63.7
18	58.2	N/A	58.2	63.2
19	56.7	N/A	56.7	61.2
20	56.7	N/A	56.7	61.8
21	55.3	N/A	55.3	60.3
22	56.4	N/A	56.4	61.6
23	56.8	N/A	56.8	61.3
24	57.0	N/A	57.0	62.4
25	57.7	N/A	57.7	61.8
26	58.0	N/A	58.0	62.9
27	58.8	N/A	58.4*	61.7
28	58.4	N/A	58.4	63.1
29	58.8	N/A	58.0*	62.3
30	59.0	N/A	58.9*	63.7
31	60.0	N/A	59.8*	65.0
32	57.7	N/A	57.7	63.8
33	58.1	N/A	57.8*	62.9
34	57.5	N/A	57.4*	63.0
35	57.4	N/A	57.1*	61.8
36	56.3	N/A	56.2*	61.3
37	57.4	N/A	57.2*	61.5
38	57.0	N/A	56.9*	56.9

Source: Urban Crossroads 2009

[1] Numbers are rounded up or down to the nearest whole number in the text to determine noise level.

[2] Barrier height in feet above pad or roadway elevation, whichever is greater to achieve maximum insertion loss.

[3] The exterior of the second floor in single-family dwellings with yards is not a sensitive land use. Exterior noise levels associated with this floor area is used to determine interior mitigation and do not need to meet the exterior use area 60 dBA CNEL standard.

BOLD = Exceeds County standard of 60 dBA CNEL; N/A = No barrier is required so there is no difference to the identified exterior noise level; * Noise level reduced due to shielding of nearby residences.

Table 3.1-2
PAs R-1, R-2, AND R-3 BUILDOUT CONDITIONS – EXTERIOR NOISE LEVELS (dBA CNEL)

Receptor	Unmitigated Ground Floor Exterior Noise Level[1]	Barrier Height (in Feet)[2]	Mitigated Ground Floor Exterior Noise Level[1]	Second Floor with Barriers Façade Noise Level[1,3]
1	**62.9**	10.0	58.2	68.0
2	**63.2**	10.0	58.5	68.3
3	**63.5**	10.0	59.9	68.5
4	**63.5**	10.0	59.0	68.2
5	**63.5**	10.0	60.0	68.4
6	58.8	N/A	58.8	64.0
7	59.4	N/A	59.4	64.5
8	59.9	N/A	59.8*	64.8
9	58.0	N/A	57.6*	62.4
10	57.4	N/A	56.9*	61.4
11	58.0	N/A	57.6*	62.4
12	59.7	N/A	59.3*	63.9
13	58.9	N/A	58.4*	63.2
14	**60.7**	N/A	59.4*	63.5
15	58.6	N/A	58.5*	63.0
16	58.9	N/A	58.8*	63.3
17	60.0	N/A	59.9*	64.6
18	57.9	N/A	57.6*	62.3
19	59.5	N/A	59.5	64.6
20	58.5	N/A	58.5	63.5
21	59.2	N/A	59.2	64.0
22	58.4	N/A	58.3*	63.2
23	59.2	N/A	59.1*	64.1
24	58.0	N/A	57.9*	62.9
25	57.5	N/A	57.4*	62.4
26	58.3	N/A	58.3	63.4
27	57.7	N/A	57.6*	62.9
28	57.7	N/A	57.7	63.0
29	56.4	N/A	56.4	61.7
30	56.5	N/A	56.5	61.6
31	56.9	N/A	56.7*	61.4
32	57.2	N/A	57.2	62.4
33	57.5	N/A	57.4*	62.7
34	59.1	N/A	59.1	64.1

Source: Urban Crossroads 2009

[1] Numbers are rounded up or down to the nearest whole number in the text to determine noise level.

[2] Barrier height in feet above pad or roadway elevation, whichever is greater to achieve maximum insertion loss.

[3] The exterior of the second floor in single-family dwellings with yards is not a sensitive land use. Exterior noise levels associated with this floor area is used to determine interior mitigation and do not need to meet the exterior use area 60 dBA CNEL standard.

BOLD = Exceeds County standard of 60 dBA CNEL; N/A = No barrier is required so there is no difference to the identified exterior noise level; * Noise level reduced due to shielding of nearby residences.

Table 3.1-3
PA MF-1 BUILDOUT CONDITIONS – EXTERIOR NOISE LEVELS (dBA CNEL)

Receptor	Unmitigated Second Floor Exterior Noise Level[1]	Barrier Height (in Feet)[2]	Mitigated Second Floor Exterior Noise Level[1]	Third Floor with Barriers Façade Noise Level[1,3]
1	60.1	N/A	60.1	64.8
2	59.8	N/A	59.8	64.3
3	60.1	N/A	60.1	64.2
4	59.9	N/A	59.9	64.3
5	54.8	N/A	54.8	57.2
6	**64.0**	6.0	59.2	66.4
7	59.9	N/A	59.9	64.2
8	59.9	N/A	59.9	64.3
9	59.0	N/A	59.0	63.1
10	**65.0**	6.0	60.0	67.4
11	59.9	N/A	59.9	64.3
12	59.9	N/A	59.9	64.2
13	**64.1**	6.0	58.6	66.1
14	59.4	N/A	59.4	63.7
15	58.3	N/A	58.2*	62.1
16	59.4	N/A	59.4	63.7
17	59.3	N/A	59.3	63.6
18	60.0	N/A	59.9*	64.8
19	**60.5**	6.0	60.4	68.2
20	**66.3**	6.0	60.3	68.1

Source: Urban Crossroads 2009

[1] Numbers are rounded up or down to the nearest whole number in the text to determine noise level.

[2] Barrier height in feet above pad or roadway elevation, whichever is greater to achieve maximum insertion loss.

[3] The exterior of the third floor is not a sensitive land use on multi-family units, as no balconies are proposed. Exterior noise levels associated with this floor are used to determine interior mitigation and do not need to meet the exterior use area 60 dBA CNEL standard.

BOLD = Exceeds County standard of 60 dBA CNEL; N/A = No barrier is required so there is no difference to the identified exterior noise level; * Noise level reduced due to shielding of nearby residences.

Table 3.1-43
PA MF-2 BUILDOUT CONDITIONS – EXTERIOR NOISE LEVELS (dBA CNEL)

Receptor	Unmitigated Ground Floor Exterior Noise Level[1]	Barrier Height (in Feet)[2]	Mitigated Ground Floor Exterior Noise Level[1]	Second Floor with Barriers Façade Noise Level[1,3]
1	**66.3**	10.0	59.7	67.7
2	**63.7**	10.0	59.3	66.5
3	**62.6**	10.0	58.9	66.0
4	**62.0**	10.0	58.8	65.8
5	**61.5**	10.0	58.9	65.5
6	**61.0**	10.0	59.3	65.1
7	**67.0**	10.0	59.6	67.7
8	55.5	N/A	55.1*	59.1
9	60.1	N/A	59.3*	63.9
10	**66.9**	10.0	59.7	67.3
11	54.4	N/A	54.2*	56.7
12	59.2	N/A	58.3*	63.0
13	**66.9**	10.0	59.3	66.9
14	**61.6**	N/A	58.9*	63.1
15	**60.7**	N/A	59.5*	63.7
16	**66.9**	10.0	59.2	66.7
17	**61.3**	N/A	59.2*	63.3
18	52.6	N/A	52.3*	53.7
19	**67.1**	10.0	60.3	57.2
20	53.0	N/A	52.6*	54.2
21	53.9	N/A	53.1*	55.4
22	56.3	N/A	53.8*	56.4

Source: Urban Crossroads 2009
[1] Numbers are rounded up or down to the nearest whole number in the text to determine noise level.
[2] Barrier height in feet above pad or roadway elevation, whichever is greater to achieve maximum insertion loss.
[3] The exterior of the second floor in single-family dwellings with yards is not a sensitive land use. Exterior noise levels associated with this floor area is used to determine interior mitigation and do not need to meet the exterior use area 60 dBA CNEL standard.
BOLD = Exceeds County standard of 60 dBA CNEL; N/A = No barrier is required so there is no difference to the identified exterior noise level; * Noise level reduced due to shielding of nearby residences.

Table 3.1-~~5~~4
PA MF-~~3~~ 1 BUILDOUT CONDITIONS – EXTERIOR NOISE LEVELS (dBA CNEL)

Receptor	Unmitigated Ground Floor Exterior Noise Level[1]	Barrier Height (in Feet)[2]	Mitigated Ground Floor Exterior Noise Level[1]	Second Floor with Barriers Façade Noise Level[1,3]
1	**63.6**	10.0	59.1	68.3
2	59.7	10.0	59.1	64.2
3	58.5	N/A	58.4*	63.2
4	57.4	N/A	57.3*	62.1
5	**63.4**	10.0	59.8	68.2
6	58.8	N/A	58.4*	63.2
7	58.2	N/A	58.0*	62.8
8	57.1	N/A	57.0*	61.9
9	**63.3**	10.0	59.5	67.7
10	58.6	N/A	58.1*	62.8
11	57.3	N/A	57.1*	61.9
12	56.5	N/A	56.4*	61.3
13	**63.1**	10.0	59.5	67.4
14	58.0	N/A	57.8*	62.5
15	56.9	N/A	56.8*	61.5
16	56.0	N/A	55.9*	60.8
17	**62.9**	10.0	59.6	67.3
18	57.7	N/A	57.4*	62.2
19	56.5	N/A	56.4*	61.1
20	55.8	N/A	55.7*	60.6
21	**62.6**	10.0	59.5	67.3
22	57.9	N/A	57.7*	62.5
23	56.4	N/A	56.3*	61.3
24	55.8	N/A	55.7*	60.4

Source: Urban Crossroads 2009
[1] Numbers are rounded up or down to the nearest whole number in the text to determine noise level.
[2] Barrier height in feet above pad or roadway elevation, whichever is greater to achieve maximum insertion loss.
[3] The exterior of the second floor in single-family dwellings with yards is not a sensitive land use. Exterior noise levels associated with this floor area is used to determine interior mitigation and do not need to meet the exterior use area 60 dBA CNEL standard.
BOLD = Exceeds County standard of 60 dBA CNEL; N/A = No barrier is required so there is no difference to the identified exterior noise level; * Noise level reduced due to shielding of nearby residences.

Table 3.1-6
PA MF-4 BUILDOUT CONDITIONS – EXTERIOR NOISE LEVELS (dBA CNEL)

Receptor	Unmitigated Ground Floor Exterior Noise Level[1]	Barrier Height (in Feet)[2]	Mitigated Ground Floor Exterior Noise Level[1]	Second Floor with Barriers Façade Noise Level[1,3]
1	**67.6**	8.0	60.1	69.2
2	**65.4**	8.0	60.3	67.4
3	**64.0**	8.0	60.0	65.4
4	**64.4**	8.0	59.1	66.7
5	**64.9**	8.0	60.2	67.2
6	**65.7**	8.0	59.7	67.8
7	**67.1**	8.0	59.4	68.9
8	**61.8**	N/A	59.2*	62.3
9	**61.1**	N/A	59.0*	62.3
10	60.4	N/A	58.8*	62.1
11	60.2	N/A	58.7*	62.1
12	60.0	N/A	58.7*	62.2
13	**67.2**	8.0	59.4	68.0
14	**61.6**	N/A	59.6*	62.6
15	**61.8**	N/A	59.4*	62.8
16	**61.1**	N/A	59.2*	61.2
17	**66.9**	8.0	59.0	69.0
18	**61.9**	N/A	58.6*	62.4
19	**61.0**	N/A	58.2*	62.1
20	**60.5**	N/A	58.0*	62.1
21	**70.4**	8.0	60.3	71.0
22	**67.2**	10.0	59.2	67.9
23	**66.7**	10.0	58.5	68.3
24	**66.9**	10.0	59.9	72.0
25	**67.4**	10.0	60.0	72.8

Source: Urban Crossroads 2009

[1] Numbers are rounded up or down to the nearest whole number in the text to determine noise level.

[2] Barrier height in feet above pad or roadway elevation, whichever is greater to achieve maximum insertion loss.

[3] The exterior of the second floor in single-family dwellings with yards is not a sensitive land use. Exterior noise levels associated with this floor area is used to determine interior mitigation and do not need to meet the exterior use area 60 dBA CNEL standard.

BOLD = Exceeds County standard of 60 dBA CNEL; N/A = No barrier is required so there is no difference to the identified exterior noise level; * Noise level reduced due to shielding of nearby residences.

Table 3.1-~~7~~5
OTHER SENSITIVE USE AREAS BUILDOUT CONDITIONS – EXTERIOR NOISE LEVELS (dBA CNEL)

Receptor	Receptor Location (PA)	Unmitigated Ground Floor Exterior Noise Level[1]	Barrier Height (in Feet)[2]	Mitigated Ground Floor Exterior Noise Level[1]
1	P-1 (park)	58.3	N/A	58.3
2	P-3 (pool)	**61.7**	9.0	59.8
3	P-3 (pool)	58.4	N/A	58.4
4	P-2 (park)	60.3	N/A	60.3
5	MF-~~3~~1 (rec area)	58.2	N/A	58.2
~~6~~	~~MF-1 (rec area)~~	~~59.6~~	~~N/A~~	~~59.6~~
~~7~~	~~MF-4 (rec area)~~	~~59.0~~	~~N/A~~	~~59.0~~
8	SC-1	65.6	N/A	65.6
9	SC-1	65.5	N/A	65.5

Source: Urban Crossroads 2009
[1] Numbers are rounded up or down to the nearest whole number in the text to determine noise level.
[2] Barrier height in feet above pad or roadway elevation, whichever is greater to achieve maximum insertion loss.
BOLD = Exceeds County standard of 60 dBA CNEL (for parks, pools, and recreational areas) or FHWA and Caltrans NAC standard of 67 dBA CNEL (for the sports complex); N/A = No barrier is required so there is no difference to the identified exterior noise level; rec area = recreational area

Table 3.1-~~8~~6
OFF-SITE TRAFFIC-RELATED DIRECT PROJECT NOISE IMPACTS

Road Segment		CNEL (dBA) at 100 Feet		Project Contribution
		Existing	Existing with Project	
Old Highway 395	East Mission Road to Reche Road	62.2	63.9	1.8
	Reche Road to Stewart Canyon Road	62.6	64.6	2.0
	Stewart Canyon Road to Tecalote Lane	63.1	63.6	0.5
	Tecalote Lane to Pala Mesa Drive	63.2	63.8	0.5
	Pala Mesa Drive to Pala Road (SR 76)	64.2	64.8	0.6
	SR 76 (Pala Road) to Dulin Road	63.3	63.5	0.3
	Dulin Road to West Lilac Road	58.1	58.5	0.5
Reche Road	Green Canyon to Live Oak Park Road	61.9	62.2	0.2
	Live Oak Park Road to Gird Road	62.0	62.3	0.3
	Gird Road to Wilt Road	61.0	61.4	0.4
	Wilt Road to Tecalote Road	60.8	61.2	0.4
	Tecalote Road to Old Highway 395	60.6	61.0	0.4
SR 76 (Pala Road)	Via Monserate to Gird Road	70.5	70.7	0.3
	Gird Road to Sage Road	70.3	70.5	0.3
	Sage Road to Old Highway 395	70.2	70.5	0.3
	Old Highway 395 to I-15 SB Ramps	71.0	71.1	0.1
	I-15 NB Ramps to Pankey Road	64.9	67.0	2.1
	Pankey Road to Horse Ranch Creek Road	64.8	67.0	2.2
	Horse Ranch Creek Road to Rice Canyon Road	64.8	65.3	0.5
	Rice Canyon Road to Couser Canyon Road	64.6	65.1	0.5
	Couser Canyon Road to Pala Mission	64.4	64.8	0.4
Dulin Road	Old Highway 395 to Pankey Road	59.5	60.0	0.5
Pankey Road	Street R to SR 76 (Pala Road)	DNE	51.9	-
	SR 76 (Pala Road) to Dulin Road	51.6	54.0	2.4
Stewart Canyon Road	Old Highway 395 to Horse Ranch Creek Road	49.6	**57.4**	**7.8**

Source: Urban Crossroads 2009
BOLD = Exceeds County standard of 3 dBA CNEL

Table 3.1-~~9~~7
OFF-SITE TRAFFIC-RELATED CUMULATIVE NOISE IMPACTS

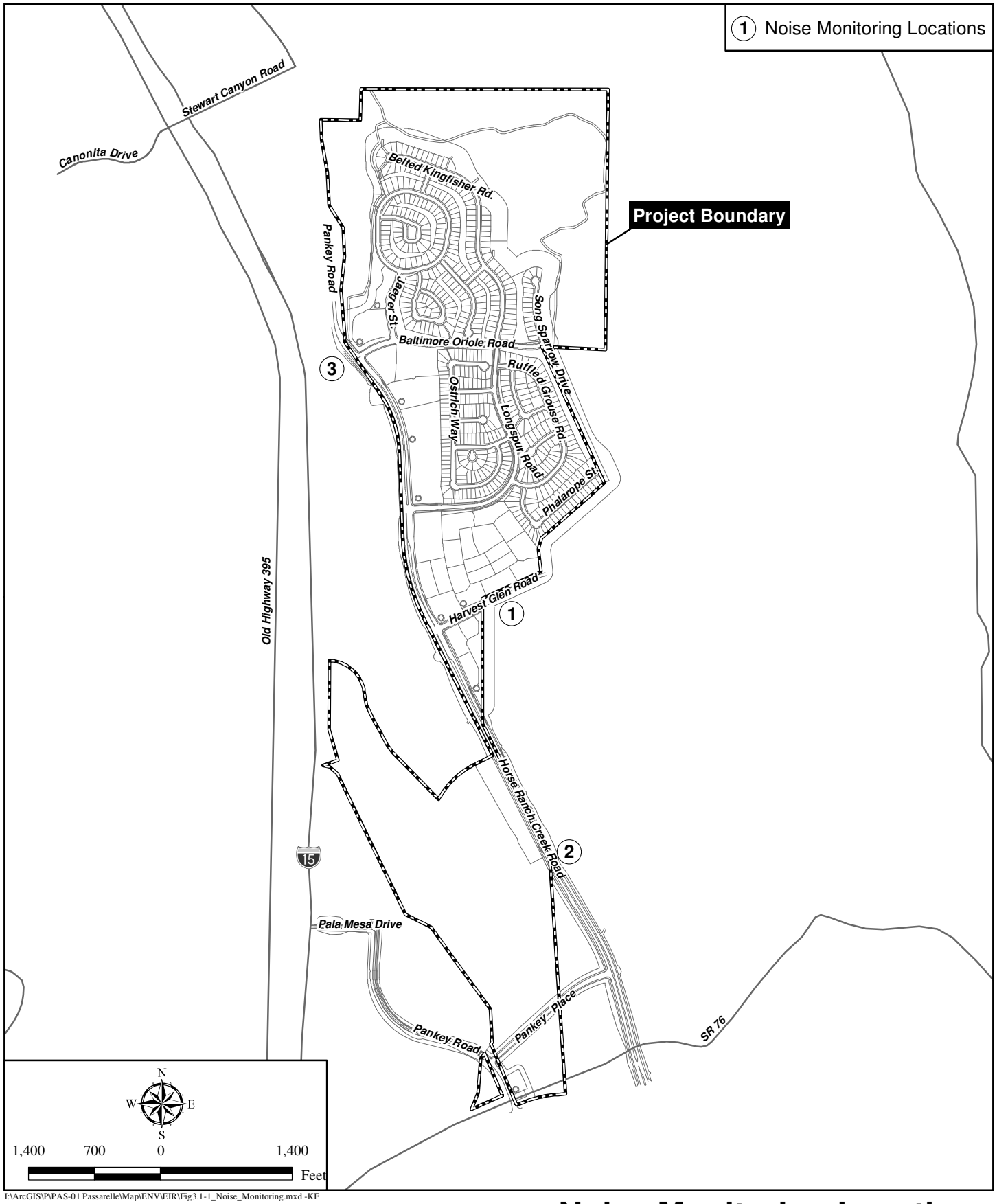
Road Segment		CNEL (dBA) at 100 Feet		
		Cumulative	Cumulative with Project	Project Contribution
Old Highway 395	East Mission Road to Reche Road	67.4	68.0	0.6
	Reche Road to Stewart Canyon Road	68.0	68.7	0.7
	Stewart Canyon Road to Tecalote Lane	67.3	67.5	0.2
	Tecalote Lane to Pala Mesa Drive	67.7	67.9	0.2
	Pala Mesa Drive to Pala Road (SR 76)	68.0	68.3	0.3
	SR 76 (Pala Road) to Dulin Road	66.6	66.8	0.1
	Dulin Road to West Lilac Road	64.1	64.2	0.1
Reche Road	Green Canyon to Live Oak Park Road	63.1	63.3	0.2
	Live Oak Park Road to Gird Road	62.4	62.7	0.3
	Gird Road to Wilt Road	61.4	61.7	0.3
	Wilt Road to Tecalote Road	61.0	61.4	0.4
	Tecalote Road to Old Highway 395	61.8	62.1	0.3
SR 76 (Pala Road)	Via Monserate to Gird Road	73.4	73.5	0.1
	Gird Road to Sage Road	72.5	72.7	0.2
	Sage Road to Old Highway 395	72.8	73.0	0.2
	Old Highway 395 to I-15 SB Ramps	73.0	73.0	0.1
	I-15 NB Ramps to Pankey Road	69.7	70.2	0.4
	Pankey Road to Horse Ranch Creek Road	68.9	69.9	1.0
	Horse Ranch Creek Road to Rice Canyon Road	70.2	70.3	0.2
	Rice Canyon Road to Couser Canyon Road	70.0	70.2	0.2
	Couser Canyon Road to Pala Mission	69.2	69.3	0.1
Dulin Road	Old Highway 395 to Pankey Road	60.3	60.7	0.4
Pankey Road	Street R to SR 76 (Pala Road)	64.2	64.4	0.2
	SR 76 (Pala Road) to Dulin Road	61.1	**62.6**	**1.6**
Stewart Canyon Road	Old Highway 395 to Horse Ranch Creek Road	58.9	**60.9**	**2.0**

Source: Urban Crossroads 2009
BOLD = Exceeds County standard of 1 dBA CNEL

Table 3.1-8
PROPERTY LINE NOISE LEVELS WITH SOUND ENCLOSURE

Property Line	Source Level Equivalent at 23 Feet (dBA)	Distance to Property Line (Feet)	Noise Reduction Due to Distance (dBA)	Resultant Noise Level at Property Line (dBA L_{EQ})	Property Line Standard	Complies with Property Line Standard
Biological (North)	70.0*	110	-13.6	56.4	60	Yes
Commercial (South)		330	-23.1	46.9	55	Yes
Park (East)		35	-3.6	66.4	67	Yes
Biological (West)		145	-16.0	54.4	60	Yes
Residential (West)		645	-29.0	41.0	45	Yes
Residential (East)		525	-27.2	42.8	45	Yes

Source: Ldn Consulting 2010
*Manufacturer's sound level with provided sound enclosure



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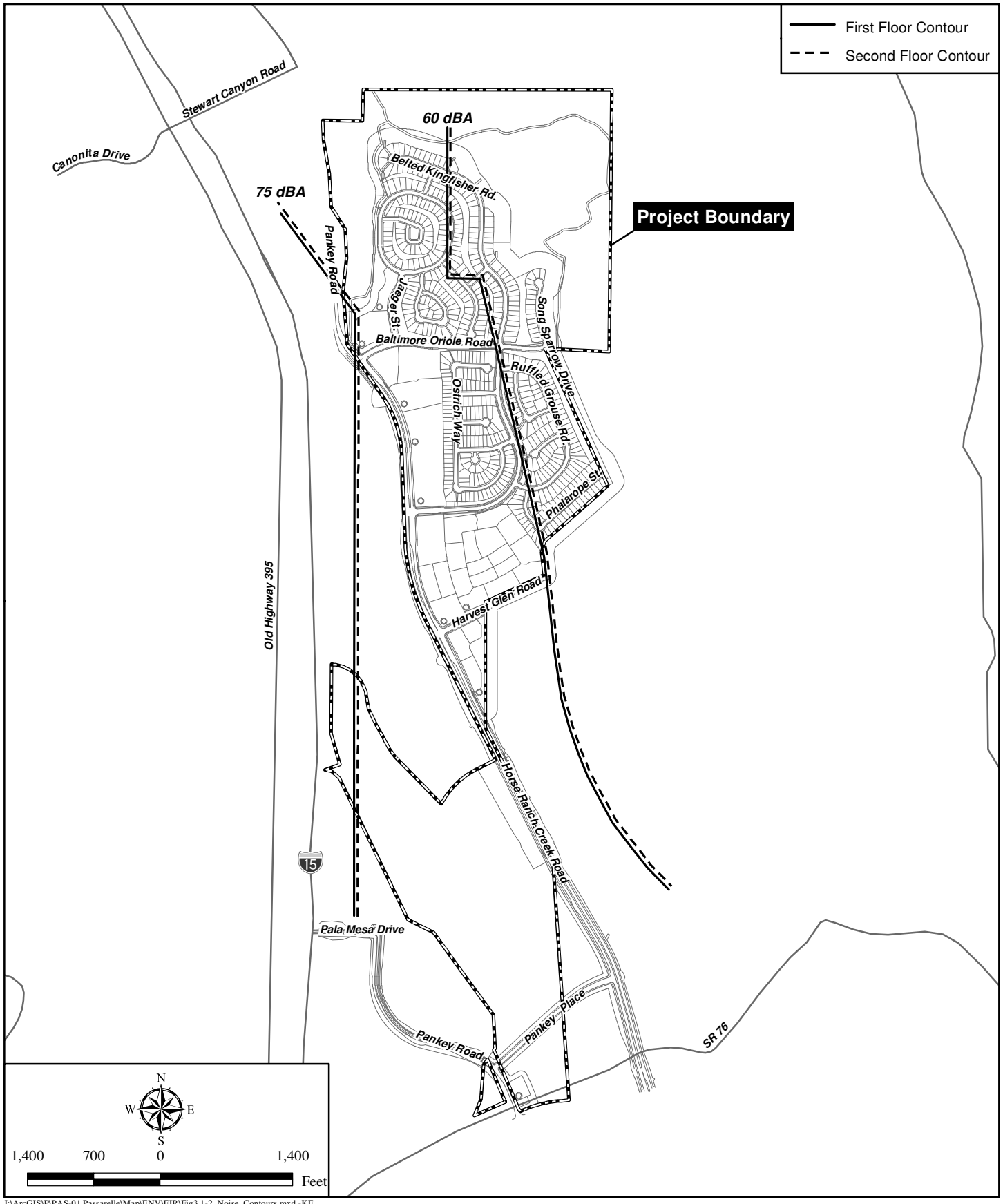
Noise Monitoring Locations

CAMPUS PARK PROJECT

HELIX

Figure 3.1-1



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Year 2030 Unmitigated Noise Contours

CAMPUS PARK PROJECT

HELIX

Figure 3.1-2

Source: Urban Crossroads, 2009

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Modeled Receptor Locations for Northern Single-family Residential Area

CAMPUS PARK PROJECT

HELIX

Figure 3.1-3

Source: Urban Crossroads, 2009

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Modeled Receptor Locations for Southern Single-family Residential Area

CAMPUS PARK PROJECT

HELIX

Figure 3.1-4

Source: Urban Crossroads, 2009

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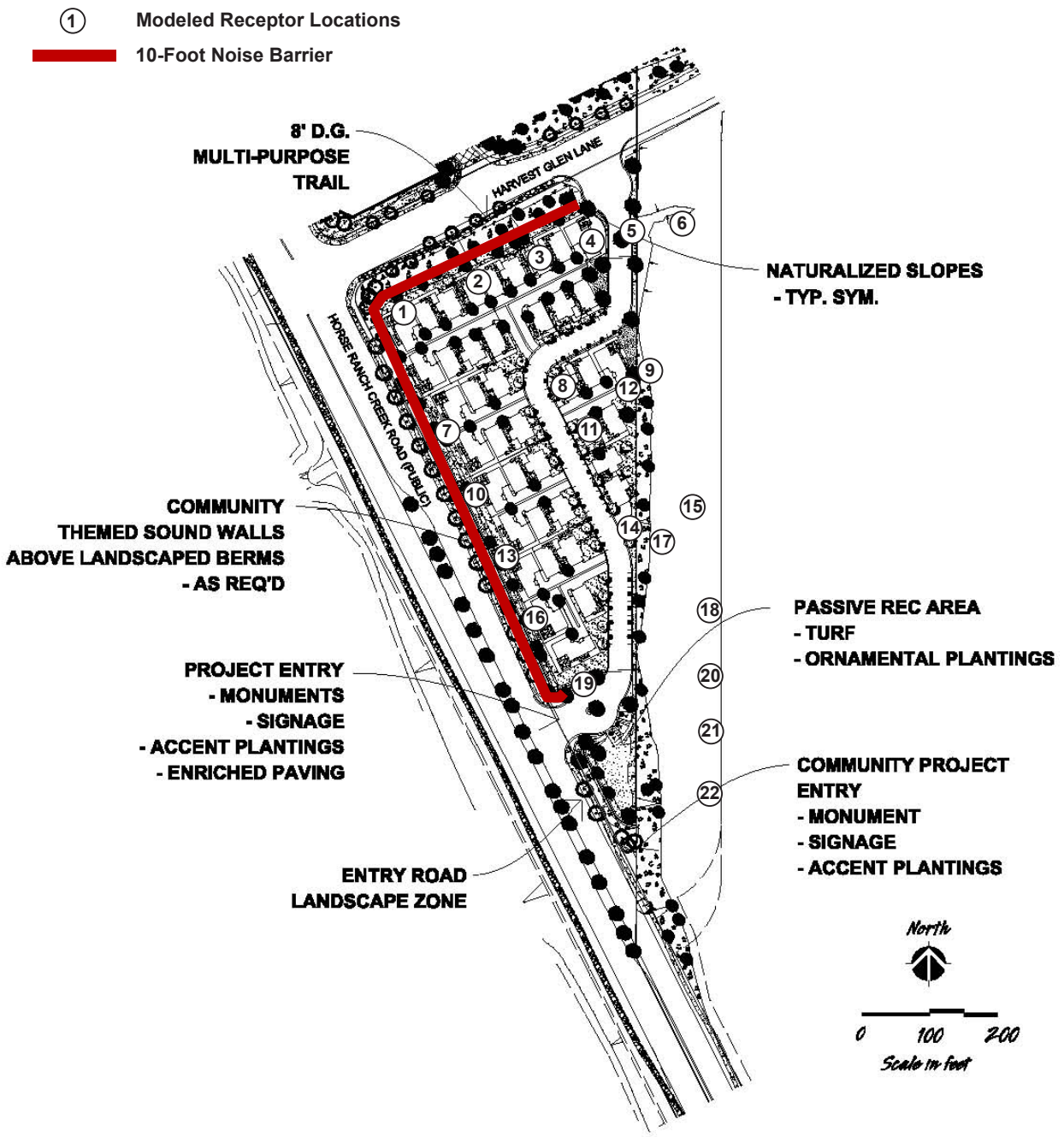
Modeled Receptor Locations for PA MF-1

CAMPUS PARK PROJECT

HELIX

Figure 3.1-5



Source: Ldn Consulting, 2010

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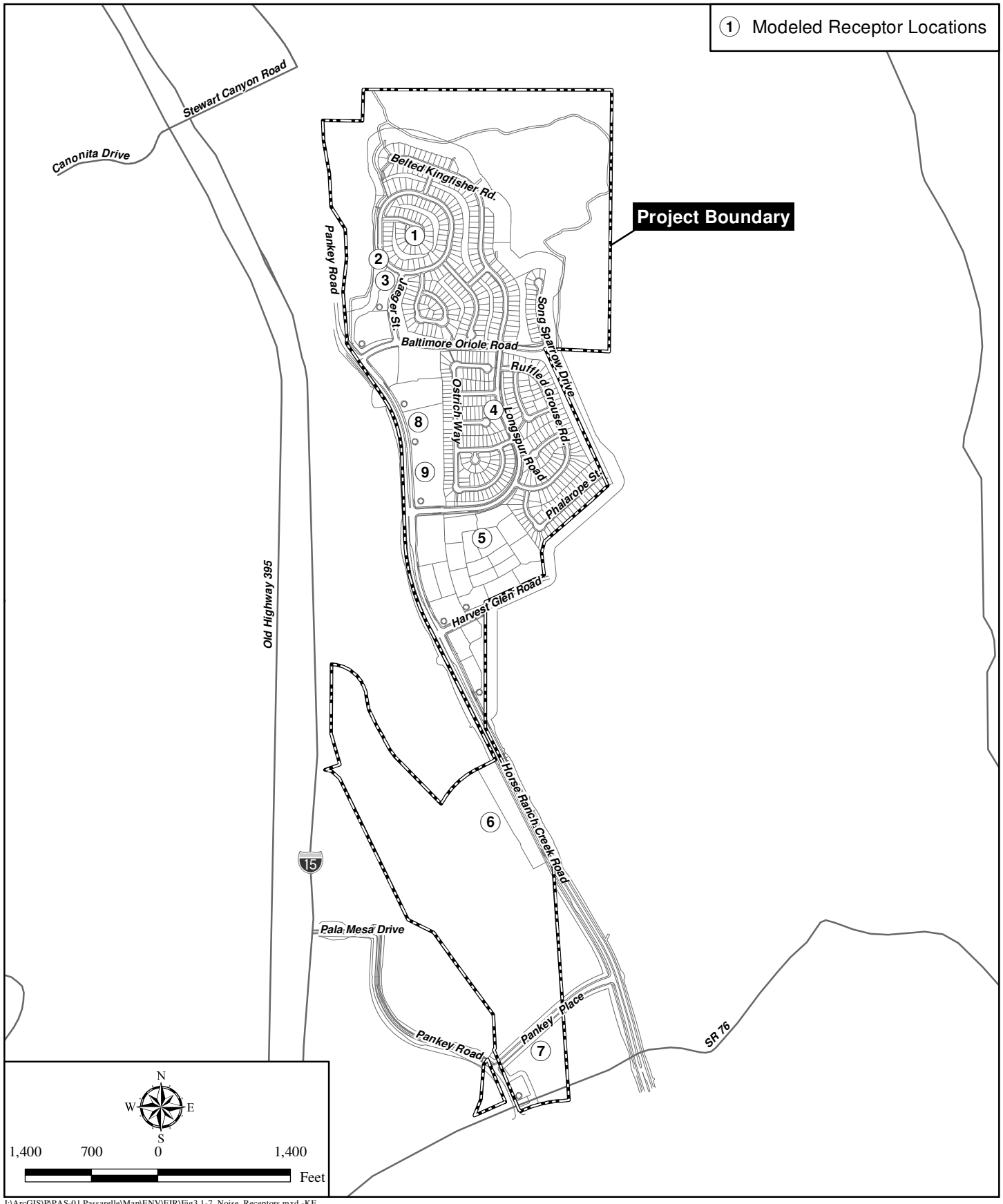
Modeled Receptor Locations for PA MF-2

CAMPUS PARK PROJECT

HELIX

Figure 3.1-6



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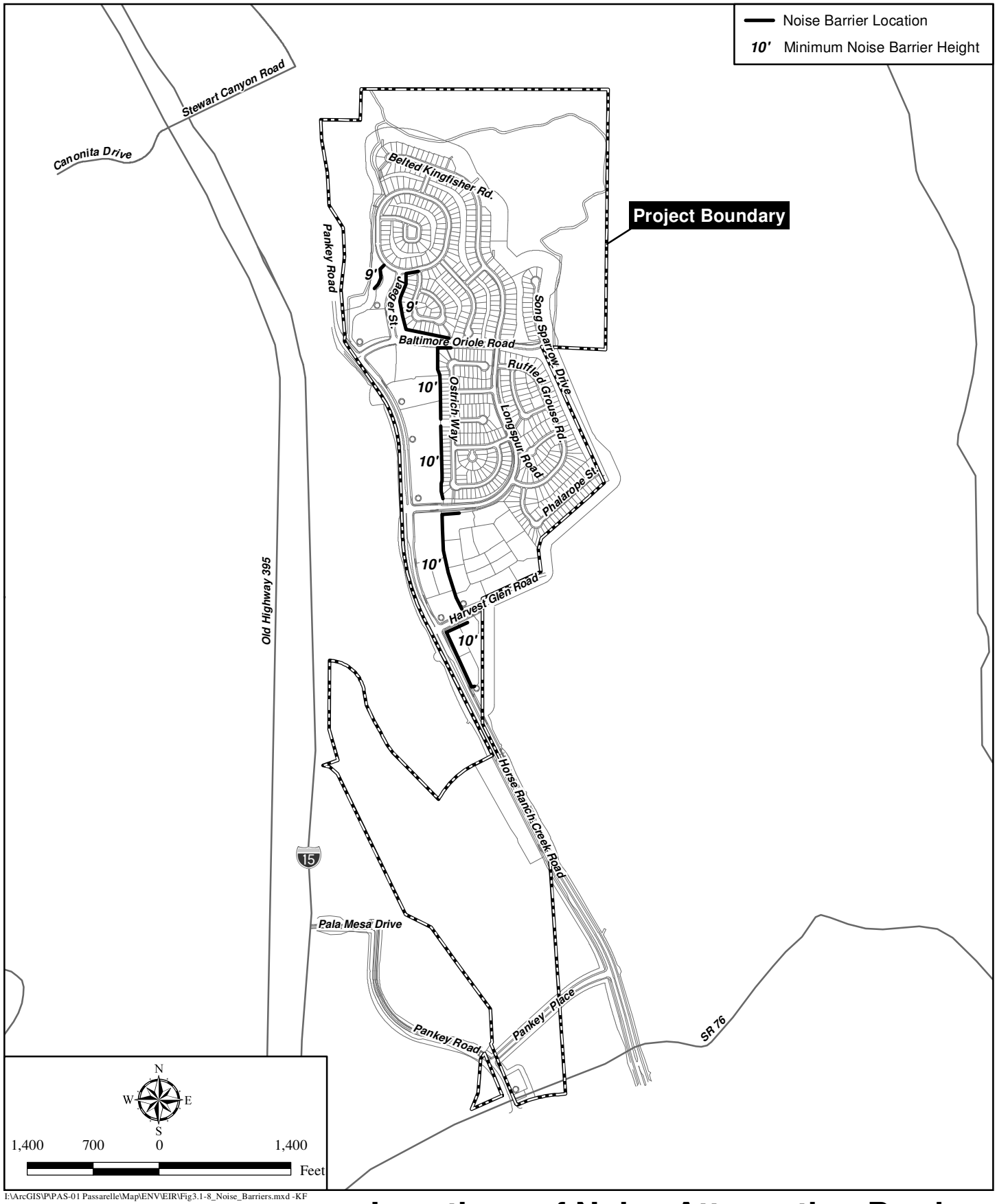
Modeled Receptor Locations for Other Sensitive Uses

CAMPUS PARK PROJECT

HELIX

Figure 3.1-7



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Locations of Noise Attenuation Barriers

CAMPUS PARK PROJECT

HELIX

Figure 3.1-8