Appendix A
Biological Resources Technical Memorandum

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MEMORANDUM

To:	Michael Haberkorn, Andrew Contreiras (Gatzke Dillon & Ballance)
From:	Callie Amoaku (Dudek)
Subject:	SDSU ARC Expansion Project – Biological Resources Technical Memorandum
Date:	November 20, 2018
cc:	Sarah Lozano, Iulia Roman (Dudek)
Attachment(s):	Figures 1–7 A, Special-Status Plant Species – Potential to Occur on Site B, Special-Status Wildlife Species – Potential to Occur on Site

Dudek conducted an evaluation to determine whether the site associated with the San Diego State University (SDSU) Aztec Recreation Center (ARC) Expansion (proposed project), located in the City of San Diego (City), California, has any value as habitat for endangered, rare, or threatened species. This technical memorandum provides the results of the biological resources investigation. Dudek conducted a site visit and biological reconnaissance survey on August 28, 2018, to map the vegetation and record biological resources, and conducted a bat roosting assessment on September 21, 2018.

1 Methodology

Vegetation communities and land uses on, and within 100 feet of, the site were mapped in the field onto a 200-foot-scale (1 inch = 200 feet) aerial photograph–based field map of the project site (Bing Maps 2018). The vegetation community and land cover mapping used categories from the City's Biology Guidelines, which are based on the original Holland (1986) and revised Holland (Oberbauer et al. 2008) classification systems. Following completion of fieldwork, vegetation polygons were transferred to a topographic base and digitized using ArcGIS, and senior GIS analyst Lesley Terry created a GIS coverage to show the acreage of each vegetation community and land cover present on site.

Plant and animal species encountered during the survey were identified and recorded. Latin and common names of animals follow Crother (2012) for reptiles and amphibians, American Ornithological Society (AOS 2018) for birds, Wilson and Reeder (2005) for mammals, and North American Butterfly Association (NABA 2015) and San Diego Natural History Museum (SDNHM 2002) for butterflies. In addition to species detected during the surveys, wildlife use or habitat was evaluated based on the known habitat preferences of local species and knowledge of their relative distributions in the area. Due to the lack of native habitat within the project area, no focused plant or wildlife surveys were performed.

To assist with the evaluation of the value of the site to special-status species, searches were conducted using the California Department of Fish and Wildlife's California Natural Diversity Database (2018) and California Native Plant Society's Inventory of Rare and Endangered Plants (2018).

The site was reviewed for jurisdictional waters, but there are none; therefore, a formal jurisdictional delineation was not conducted.

2 Project Location and Setting

The project site is located in the western portion of the main SDSU campus within the existing Campus Master Plan boundary, approximately 8 miles east of downtown San Diego (Figure 1, Project Location). The proposed project would be located on a 4.79-acre site on 55th Street and Canyon Crest Drive northwest of Viejas Arena. A portion of this site would be altered for the expansion project. The 0.73-acre staging area used for the proposed project during construction is a fenced-in area adjacent to Aztec Walk (see Figure 2, Project Site).

The project site is located on the U.S. Geological Survey 7.5-minute La Mesa quadrangle in Section 15, Township 16 South, Range 2 West. The surrounding quadrangles include Del Mar, Poway, San Vicente Reservoir, La Jolla, El Cajon, Point Loma, National City, and Jamul Mountains. The approximate centroid of the proposed project is 117°4′44.626″W, 32°46′32.968″N. The project site is located on Assessor's Parcel Number 462-230-19-00.

3 Project Description

The proposed project is an expansion of the existing ARC—a single-story building consisting of approximately 74,000 square feet that includes a four-court gym and cardio fitness and weightlifting areas. The proposed project includes expanding the existing ARC by approximately 68,000 square feet. The expanded ARC building would consist of two stories, a proposed courtyard, and associated landscaping (Figure 3, Site Plan). Figure 5 (Floor Plans) and Figure 6 (Architectural Rendering – Southern Elevation) depict the floor plans and the basic design of the proposed project. In addition to newly renovated recreational spaces, the proposed project would also include solar panels on the roof of the proposed ARC (see Figure 2).

Currently the ARC has a monthly membership level of approximately 16,000 individuals. Of this total, approximately 5%–6% are members of the public not affiliated with SDSU; the remainder are SDSU students, faculty, or staff. Currently, SDSU students must pay to join the ARC; approximately 35% of the SDSU student body are members. Starting in fall 2021, the SDSU Student Body Center fee will increase; this fee increase will allow all students the ability to have access to the ARC. The expanded ARC will continue to be open to the public but will not be actively marketed to increase non-SDSU community membership.

4 Existing Conditions

The project site consists of the existing ARC, walkways, and associated landscaping. The project site is located next to Viejas Arena and receives a lot of student and community activity. The staging area for construction is located off site at an on-campus location west of Aztec Walk, and is a temporarily fenced area commonly used as a construction staging area for campus projects and maintenance.

Vegetation Communities and Land Covers

One land cover was mapped within the project area: urban/developed (Figure 7, Vegetation Communities and Land Covers with Limits of Impact).

The majority of the project area consists of urban/developed area; these are characterized by the existing ARC, parking lot, and concrete walkways. The northeastern slopes are landscaped with bank catclaw (*Acacia redolens*), Washington fan palm (*Washingtonia robusta*), bird-of-paradise shrub (*Caesalpinia gilliesii*), and non-native pine trees (*Pinus* spp.). In accordance with Oberbauer et al. (2008), ornamental plantings are considered urban/developed.

Plants and Wildlife

Plant and wildlife species were recorded during the reconnaissance survey. The plants were primarily non-native landscaping plants, and only three wildlife species were observed. The plants observed on site include bird-of-paradise shrub, Washington fan palm, bank catclaw, fern podocarpus (*Podocarpus gracilior*), and short-pod mustard (*Hirschfeldia incana*). The wildlife species observed were American crow (*Corvus brachyrhynchos*), house finch (*Haemorhous mexicanus*), and fiery skipper (*Hylephila phyleus*). Other common, urban-adapted species that possibly occur on site include California ground squirrel (*Spermophilus [Otospermophilus] beecheyi*), brush rabbit (*Sylvilagus bachmani*), common side-blotched lizard (*Uta stansburiana*), western fence lizard (*Sceloporus occidentalis*), lesser goldfinch (*Spinus psaltria*), Anna's hummingbird (*Calypte anna*), Brewer's blackbird (*Euphagus cyanocephalus*), and mourning dove (*Zenaida macroura*).

Special-Status Species

Special-status biological resources are those defined as follows: (1) species that have been given special recognition by federal, state, or local conservation agencies and organizations due to limited, declining, or threatened population sizes; (2) species and habitat types recognized by local and regional resource agencies as special status; (3) habitat areas or vegetation communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; (4) wildlife corridors and habitat linkages; or (5) biological resources that may or may not be considered special status but are regulated under local, state, and/or federal laws.

No special-status species (including those listed as threatened or endangered or considered rare) were observed on site, and there is no suitable habitat for special-status species within the project site due to the lack of habitat, the developed nature of the site, and non-native landscaping.

The results of the literature search for special-status plant and wildlife species recorded in the vicinity are described in Attachments A and B.[1] Due to the lack of native habitat on site, the developed and landscaped nature of the site, and considerable human activity, there are very few special-status species with any potential to occur. The only special-status species that have some potential to occur on site are pallid bat (*Antrozous pallidus*) and big free-tailed bat (*Nyctinomops macrotis*), which occur within the vicinity and roost in buildings and tree foliage (e.g., pines and eucalyptus). Both bat species are considered species of special concern by the California Department of Fish and Wildlife. A bat roosting assessment was conducted by Dudek bat biologist Tommy Molioo. The palm trees are too maintained to support a bat roost; there are eucalyptus trees just east of the site that could support a roost. Neither the existing ARC nor the trees adjacent to the study area showed sign of any previous or current roosting. Due to the lack of water in the immediate vicinity, regular maintenance of the landscaped areas, and isolated

1 The term "vicinity" refers to the La Mesa, Del Mar, Poway, San Vicente Reservoir, La Jolla, El Cajon, Point Loma, National City, and Jamul Mountains U.S. Geological Survey quadrangles.

patches of trees, the site is not valuable as habitat for the bat species and there is little potential for them to forage on or around the site. Therefore, Dudek has concluded that the site is not being used by roosting bats.

5 Analysis and Conclusions

The California Environmental Quality Act (CEQA) Guidelines, Section 15332, Exemptions for In-Fill Development Projects, would apply to the proposed project. With respect to biology, the following condition of CEQA Guidelines, Section 15332, is relevant:

(c) The project site has no value as habitat for endangered, rare or threatened species.

As described above, the project site is currently developed and consists of only non-native plants for landscaping. No naturally occurring or native plant species or communities exist on the site, and because of the concentration and types of plants, plants on site do not serve as habitat for wildlife. The only special-status species with any potential to occur on the site are two bat species that roost in urban areas, including in buildings and tree foliage. No previous or current bat roosting was detected, and the site's landscaping does not serve as valuable habitat. The project site consists of portions of the existing ARC, associated infrastructure, and landscaped areas. The proposed project would not result in impacts to special-status vegetation communities or plant or wildlife species that are listed as threatened or endangered or are considered rare.

Sincerely,

Callie Amoaku

Callie Amoaku
Project Biologist

6 References

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Attachment A

Special-Status Plant Species – Potential to Occur on Site

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Abronia maritima	red sand-verbena	None/None/4.2	Coastal dunes/perennial herb/Feb–Nov/0–330	Not expected to occur. No suitable vegetation present.
Acanthomintha ilicifolia	San Diego thorn-mint	FT/SE/1B.1	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; Clay, openings/annual herb/Apr–June/30–3150	Not expected to occur. No suitable vegetation present.
Acmispon prostratus	Nuttall's acmispon	None/None/1B.1	Coastal dunes, Coastal scrub (sandy)/annual herb/Mar–June(July)/0–35	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Adolphia californica	California adolphia	None/None/2B.1	Chaparral, Coastal scrub, Valley and foothill grassland; Clay/perennial deciduous shrub/Dec–May/30–2430	Not expected to occur. No suitable vegetation present.
Agave shawii var. *shawii*	Shaw's agave	None/None/2B.1	Coastal bluff scrub, Coastal scrub; Maritime succulent scrub/perennial leaf succulent/Sep–May/5–395	Not expected to occur. No suitable vegetation present.
Ambrosia chenopodiifolia	San Diego bur-sage	None/None/2B.1	Coastal scrub/perennial shrub/Apr–June/180–510	Not expected to occur. No suitable vegetation present.
Ambrosia monogyra	singlewhorl burrobrush	None/None/2B.2	Chaparral, Sonoran desert scrub; sandy/perennial shrub/Aug–Nov/30–1640	Not expected to occur. No suitable vegetation present.
Ambrosia pumila	San Diego ambrosia	FE/None/1B.1	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; sandy loam or clay, often in disturbed areas, sometimes alkaline/perennial rhizomatous herb/Apr–Oct/65–1360	Not expected to occur. No suitable vegetation present.
Aphanisma blitoides	aphanisma	None/None/1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub; sandy or gravelly/annual herb/Feb–June/0–1000	Not expected to occur. No suitable vegetation present.
Arctostaphylos glandulosa ssp. *crassifolia*	Del Mar manzanita	FE/None/1B.1	Chaparral (maritime, sandy)/perennial evergreen shrub/Dec–June/0–1200	Not expected to occur. No suitable vegetation present.
Arctostaphylos otayensis	Otay manzanita	None/None/1B.2	Chaparral, Cismontane woodland; metavolcanic/perennial evergreen shrub/Jan–Apr/900–5575	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Artemisia palmeri	San Diego sagewort	None/None/4.2	Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland; sandy, mesic/perennial deciduous shrub/(Feb)May–Sep/45–3000	Not expected to occur. No suitable vegetation present.
Asplenium vespertinum	western spleenwort	None/None/4.2	Chaparral, Cismontane woodland, Coastal scrub; rocky/perennial rhizomatous herb/Feb–June/590–3280	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Astragalus deanei	Dean's milk-vetch	None/None/1B.1	Chaparral, Cismontane woodland, Coastal scrub, Riparian forest/perennial herb/Feb–May/245–2280	Not expected to occur. No suitable vegetation present.
Astragalus tener var. *titi*	coastal dunes milk-vetch	FE/SE/1B.1	Coastal bluff scrub (sandy), Coastal dunes, Coastal prairie (mesic); often vernally mesic areas/annual herb/Mar–May/0–165	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Atriplex coulteri	Coulter's saltbush	None/None/1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill grassland; alkaline or clay/perennial herb/Mar–Oct/5–1510	Not expected to occur. No suitable vegetation present.
Atriplex pacifica	South Coast saltscale	None/None/1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Playas/annual herb/Mar–Oct/0–460	Not expected to occur. No suitable vegetation present.
Baccharis vanessae	Encinitas baccharis	FT/SE/1B.1	Chaparral (maritime), Cismontane woodland; sandstone/perennial deciduous shrub/Aug,Oct,Nov/195–2360	Not expected to occur. No suitable vegetation present.
Bergerocactus emoryi	golden-spined cereus	None/None/2B.2	Closed-cone coniferous forest, Chaparral, Coastal scrub; sandy/perennial stem succulent/May–June/5–1295	Not expected to occur. No suitable vegetation present.
Bloomeria clevelandii	San Diego goldenstar	None/None/1B.1	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; clay/perennial bulbiferous herb/Apr–May/160–1525	Not expected to occur. No suitable vegetation present.
Brodiaea filifolia	thread-leaved brodiaea	FT/SE/1B.1	Chaparral (openings), Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools; often clay/perennial bulbiferous herb/Mar–June/80–3675	Not expected to occur. No suitable vegetation present.
Brodiaea orcuttii	Orcutt's brodiaea	None/None/1B.1	Closed-cone coniferous forest, Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland, Vernal pools; mesic, clay/perennial bulbiferous herb/May–July/95–5550	Not expected to occur. No suitable vegetation present.
Calandrinia breweri	Brewer's calandrinia	None/None/4.2	Chaparral, Coastal scrub; sandy or loamy, disturbed sites and burns/annual herb/(Jan)Mar–June/30–4005	Not expected to occur. No suitable vegetation present.
Calochortus dunnii	Dunn's mariposa lily	None/SR/1B.2	Closed-cone coniferous forest, Chaparral, Valley and foothill grassland; gabbroic or metavolcanic, rocky/perennial bulbiferous herb/(Feb)Apr–June/605–6005	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Camissoniopsis lewisii	Lewis' evening-primrose	None/None/3	Coastal bluff scrub, Cismontane woodland, Coastal dunes, Coastal scrub, Valley and foothill grassland; sandy or clay/annual herb/Mar–May(June)/0–985	Not expected to occur. No suitable vegetation present.

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Castilleja plagiotoma	Mojave paintbrush	None/None/4.3	Great Basin scrub (alluvial), Joshua tree woodland, Lower montane coniferous forest, Pinyon and juniper woodland/perennial herb (hemiparasitic)/Apr–June/980–8200	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Ceanothus cyaneus	Lakeside ceanothus	None/None/1B.2	Closed-cone coniferous forest, Chaparral/perennial evergreen shrub/Apr–June/770–2475	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Ceanothus otayensis	Otay Mountain ceanothus	None/None/1B.2	Chaparral (metavolcanic or gabbroic)/perennial evergreen shrub/Jan–Apr/1965–3610	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Ceanothus verrucosus	wart-stemmed ceanothus	None/None/2B.2	Chaparral/perennial evergreen shrub/Dec–May/0–1245	Not expected to occur. No suitable vegetation present.
Centromadia parryi ssp. *australis*	southern tarplant	None/None/1B.1	Marshes and swamps (margins), Valley and foothill grassland (vernally mesic), Vernal pools/annual herb/May–Nov/0–1575	Not expected to occur. No suitable vegetation present.
Centromadia pungens ssp. *laevis*	smooth tarplant	None/None/1B.1	Chenopod scrub, Meadows and seeps, Playas, Riparian woodland, Valley and foothill grassland; alkaline/annual herb/Apr–Sep/0–2100	Not expected to occur. No suitable vegetation present.
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	None/None/1B.1	Coastal bluff scrub (sandy), Coastal dunes/annual herb/Jan–Aug/0–330	Not expected to occur. No suitable vegetation present.
Chamaebatia australis	southern mountain misery	None/None/4.2	Chaparral (gabbroic or metavolcanic)/perennial evergreen shrub/Nov–May/980–3345	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Chloropyron maritimum ssp. *maritimum*	salt marsh bird's-beak	FE/SE/1B.2	Coastal dunes, Marshes and swamps (coastal salt)/annual herb (hemiparasitic)/May–Oct(Nov)/0–100	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Chorizanthe leptotheca	Peninsular spineflower	None/None/4.2	Chaparral, Coastal scrub, Lower montane coniferous forest; alluvial fan, granitic/annual herb/May–Aug/980–6235	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Chorizanthe orcuttiana	Orcutt's spineflower	FE/SE/1B.1	Closed-cone coniferous forest, Chaparral (maritime), Coastal scrub; sandy openings/annual herb/Mar–May/5–410	Not expected to occur. No suitable vegetation present.
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	None/None/1B.2	Chaparral, Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools; often clay/annual herb/Apr–July/95–5020	Not expected to occur. No suitable vegetation present.
Cistanthe maritima	seaside cistanthe	None/None/4.2	Coastal bluff scrub, Coastal scrub, Valley and foothill grassland; sandy/annual herb/(Feb)Mar–June(Aug)/15–985	Not expected to occur. No suitable vegetation present.
Clarkia delicata	delicate clarkia	None/None/1B.2	Chaparral, Cismontane woodland; often gabbroic/annual herb/Apr–June/770–3280	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Clinopodium chandleri	San Miguel savory	None/None/1B.2	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland; Rocky, gabbroic or metavolcanic/perennial shrub/Mar–July/390–3525	Not expected to occur. No suitable vegetation present.
Comarostaphylis diversifolia ssp. *diversifolia*	summer holly	None/None/1B.2	Chaparral, Cismontane woodland/perennial evergreen shrub/Apr–June/95–2590	Not expected to occur. No suitable vegetation present.
Convolvulus simulans	small-flowered morning-glory	None/None/4.2	Chaparral (openings), Coastal scrub, Valley and foothill grassland; clay, serpentinite seeps/annual herb/Mar–July/95–2430	Not expected to occur. No suitable vegetation present.
Corethrogyne filaginifolia var. *incana*	San Diego sand aster	None/None/1B.1	Coastal bluff scrub, Chaparral, Coastal scrub/perennial herb/June–Sep/5–375	Not expected to occur. No suitable vegetation present.
Corethrogyne filaginifolia var. *linifolia*	Del Mar Mesa sand aster	None/None/1B.1	Coastal bluff scrub, Chaparral (maritime, openings), Coastal scrub; sandy/perennial herb/May,July,Aug,Sep/45–490	Not expected to occur. No suitable vegetation present.
Cylindropuntia californica var. *californica*	snake cholla	None/None/1B.1	Chaparral, Coastal scrub/perennial stem succulent/Apr–May/95–490	Not expected to occur. No suitable vegetation present.
Deinandra conjugens	Otay tarplant	FT/SE/1B.1	Coastal scrub, Valley and foothill grassland; clay/annual herb/(Apr)May–June/80–985	Not expected to occur. No suitable vegetation present.
Deinandra paniculata	paniculate tarplant	None/None/4.2	Coastal scrub, Valley and foothill grassland, Vernal pools; usually vernally mesic, sometimes sandy/annual herb/(Mar)Apr–Nov/80–3085	Not expected to occur. No suitable vegetation present.
Dichondra occidentalis	western dichondra	None/None/4.2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/perennial rhizomatous herb/(Jan)Mar–July/160–1640	Not expected to occur. No suitable vegetation present.

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Dicranostegia orcuttiana	Orcutt's bird's-beak	None/None/2B.1	Coastal scrub/annual herb (hemiparasitic)/(Mar)Apr–July(Sep)/30–1150	Not expected to occur. No suitable vegetation present.
Diplacus aridus	low bush monkeyflower	None/None/4.3	Chaparral (rocky), Sonoran desert scrub/perennial evergreen shrub/Apr–July/2460–3935	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	None/None/1B.1	Coastal bluff scrub, Chaparral, Coastal scrub, Valley and foothill grassland; rocky, often clay or serpentinite/perennial herb/Apr–June/15–1475	Not expected to occur. No suitable vegetation present.
Dudleya brevifolia	short-leaved dudleya	None/SE/1B.1	Chaparral (maritime, openings), Coastal scrub; Torrey sandstone/perennial herb/Apr–May/95–820	Not expected to occur. No suitable vegetation present.
Dudleya variegata	variegated dudleya	None/None/1B.2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools; clay/perennial herb/Apr–June/5–1905	Not expected to occur. No suitable vegetation present.
Dudleya viscida	sticky dudleya	None/None/1B.2	Coastal bluff scrub, Chaparral, Cismontane woodland, Coastal scrub; rocky/perennial herb/May–June/30–1805	Not expected to occur. No suitable vegetation present.
Ericameria palmeri var. *palmeri*	Palmer's goldenbush	None/None/1B.1	Chaparral, Coastal scrub; mesic/perennial evergreen shrub/(July)Sep–Nov/95–1970	Not expected to occur. No suitable vegetation present.
Eriodictyon sessilifolium	sessile-leaved yerba stanta	None/None/2B.1	Coastal scrub; volcanic/perennial shrub/July/555–560	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Eryngium aristulatum var. *parishii*	San Diego button-celery	FE/SE/1B.1	Coastal scrub, Valley and foothill grassland, Vernal pools; mesic/annual / perennial herb/Apr–June/65–2035	Not expected to occur. No suitable vegetation present.
Erysimum ammophilum	sand-loving wallflower	None/None/1B.2	Chaparral (maritime), Coastal dunes, Coastal scrub; sandy, openings/perennial herb/Feb–June/0–195	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Erythranthe diffusa	Palomar monkeyflower	None/None/4.3	Chaparral, Lower montane coniferous forest; sandy or gravelly/annual herb/Apr–June/4000–6005	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Euphorbia misera	cliff spurge	None/None/2B.2	Coastal bluff scrub, Coastal scrub, Mojavean desert scrub; rocky/perennial shrub/Dec–Aug(Oct)/30–1640	Not expected to occur. No suitable vegetation present.
Ferocactus viridescens	San Diego barrel cactus	None/None/2B.1	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools/perennial stem succulent/May–June/5–1475	Not expected to occur. No suitable vegetation present.
Frankenia palmeri	Palmer's frankenia	None/None/2B.1	Coastal dunes, Marshes and swamps (coastal salt), Playas/perennial herb/May–July/0–35	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Fremontodendron mexicanum	Mexican flannelbush	FE/SR/1B.1	Closed-cone coniferous forest, Chaparral, Cismontane woodland; gabbroic, metavolcanic, or serpentinite/perennial evergreen shrub/Mar–June/30–2350	Not expected to occur. No suitable vegetation present.
Galium proliferum	desert bedstraw	None/None/2B.2	Joshua tree woodland, Mojavean desert scrub, Pinyon and juniper woodland; rocky, carbonate (limestone)/annual herb/Mar–June/3900–5350	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Geothallus tuberosus	Campbell's liverwort	None/None/1B.1	Coastal scrub (mesic), Vernal pools; soil/ephemeral liverwort/N.A./30–1970	Not expected to occur. No suitable vegetation present.
Githopsis diffusa ssp. *filicaulis*	Mission Canyon bluecup	None/None/3.1	Chaparral (mesic, disturbed areas)/annual herb/Apr–June/1475–2295	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Grindelia hallii	San Diego gumplant	None/None/1B.2	Chaparral, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland/perennial herb/May–Oct/605–5725	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Harpagonella palmeri	Palmer's grapplinghook	None/None/4.2	Chaparral, Coastal scrub, Valley and foothill grassland; Clay; open grassy areas within shrubland/annual herb/Mar–May/65–3135	Not expected to occur. No suitable vegetation present.
Hesperocyparis forbesii	Tecate cypress	None/None/1B.1	Closed-cone coniferous forest, Chaparral; clay, gabbroic or metavolcanic/perennial evergreen tree/N.A./260–4920	Not expected to occur. No suitable vegetation present.
Heterotheca sessiliflora ssp. *sessiliflora*	beach goldenaster	None/None/1B.1	Chaparral (coastal), Coastal dunes, Coastal scrub/perennial herb/Mar–Dec/0–4020	Not expected to occur. No suitable vegetation present.
Holocarpha virgata ssp. *elongata*	graceful tarplant	None/None/4.2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/annual herb/May–Nov/195–3610	Not expected to occur. No suitable vegetation present.

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Hordeum intercedens	vernal barley	None/None/3.2	Coastal dunes, Coastal scrub, Valley and foothill grassland (saline flats and depressions), Vernal pools/annual herb/Mar–June/15–3280	Not expected to occur. No suitable vegetation present.
Horkelia truncata	Ramona horkelia	None/None/1B.3	Chaparral, Cismontane woodland; clay, gabbroic/perennial herb/May–June/1310–4265	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Isocoma menziesii var. *decumbens*	decumbent goldenbush	None/None/1B.2	Chaparral, Coastal scrub (sandy, often in disturbed areas)/perennial shrub/Apr–Nov/30–445	Not expected to occur. No suitable vegetation present.
Iva hayesiana	San Diego marsh-elder	None/None/2B.2	Marshes and swamps, Playas/perennial herb/Apr–Oct/30–1640	Not expected to occur. No suitable vegetation present.
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	None/None/4.2	Coastal dunes (mesic), Meadows and seeps (alkaline seeps), Marshes and swamps (coastal salt)/perennial rhizomatous herb/(Mar)May–June/5–2955	Not expected to occur. No suitable vegetation present.
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	None/None/1B.1	Marshes and swamps (coastal salt), Playas, Vernal pools/annual herb/Feb–June/0–4005	Not expected to occur. No suitable vegetation present.
Lepechinia cardiophylla	heart-leaved pitcher sage	None/None/1B.2	Closed-cone coniferous forest, Chaparral, Cismontane woodland/perennial shrub/Apr–July/1705–4495	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Lepechinia ganderi	Gander's pitcher sage	None/None/1B.3	Closed-cone coniferous forest, Chaparral, Coastal scrub, Valley and foothill grassland; Gabbroic or metavolcanic/perennial shrub/June–July/1000–3295	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	None/None/4.3	Chaparral, Coastal scrub/annual herb/Jan–July/0–2905	Not expected to occur. No suitable vegetation present.
Leptosyne maritima	sea dahlia	None/None/2B.2	Coastal bluff scrub, Coastal scrub/perennial herb/Mar–May/15–490	Not expected to occur. No suitable vegetation present.
Lycium californicum	California box-thorn	None/None/4.2	Coastal bluff scrub, Coastal scrub/perennial shrub/(Dec)Mar,June,July,Aug/15–490	Not expected to occur. No suitable vegetation present.
Microseris douglasii ssp. *platycarpha*	small-flowered microseris	None/None/4.2	Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools; clay/annual herb/Mar–May/45–3510	Not expected to occur. No suitable vegetation present.
Mobergia calculiformis	light gray lichen	//3	Coastal scrub (?); On rocks/crustose lichen (saxicolous)/N.A./30–35	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Monardella hypoleuca ssp. *lanata*	felt-leaved monardella	None/None/1B.2	Chaparral, Cismontane woodland/perennial rhizomatous herb/June–Aug/980–5165	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Monardella viminea	willowy monardella	FE/SE/1B.1	Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland; alluvial ephemeral washes/perennial herb/June–Aug/160–740	Not expected to occur. No suitable vegetation present.
Mucronea californica	California spineflower	None/None/4.2	Chaparral, Cismontane woodland, Coastal dunes, Coastal scrub, Valley and foothill grassland; sandy/annual herb/Mar–July(Aug)/0–4595	Not expected to occur. No suitable vegetation present.
Myosurus minimus ssp. *apus*	little mousetail	None/None/3.1	Valley and foothill grassland, Vernal pools (alkaline)/annual herb/Mar–June/65–2100	Not expected to occur. No suitable vegetation present.
Nama stenocarpa	mud nama	None/None/2B.2	Marshes and swamps (lake margins, riverbanks)/annual / perennial herb/Jan–July/15–1640	Not expected to occur. No suitable vegetation present.
Navarretia fossalis	spreading navarretia	FT/None/1B.1	Chenopod scrub, Marshes and swamps (assorted shallow freshwater), Playas, Vernal pools/annual herb/Apr–June/95–2150	Not expected to occur. No suitable vegetation present.
Navarretia prostrata	prostrate vernal pool navarretia	None/None/1B.1	Coastal scrub, Meadows and seeps, Valley and foothill grassland (alkaline), Vernal pools; Mesic/annual herb/Apr–July/5–3970	Not expected to occur. No suitable vegetation present.
Nemacaulis denudata var. *denudata*	coast woolly-heads	None/None/1B.2	Coastal dunes/annual herb/Apr–Sep/0–330	Not expected to occur. No suitable vegetation present.
Nemacaulis denudata var. *gracilis*	slender cottonheads	None/None/2B.2	Coastal dunes, Desert dunes, Sonoran desert scrub/annual herb/(Mar)Apr–May/-160–1310	Not expected to occur. No suitable vegetation present.
Ophioglossum californicum	California adder's-tongue	None/None/4.2	Chaparral, Valley and foothill grassland, Vernal pools (margins); mesic/perennial rhizomatous herb/(Dec)Jan–June/195–1720	Not expected to occur. No suitable vegetation present.
Orcuttia californica	California Orcutt grass	FE/SE/1B.1	Vernal pools/annual herb/Apr–Aug/45–2165	Not expected to occur. No suitable vegetation present.
Orobanche parishii ssp. *brachyloba*	short-lobed broomrape	None/None/4.2	Coastal bluff scrub, Coastal dunes, Coastal scrub; sandy/perennial herb (parasitic)/Apr–Oct/5–1000	Not expected to occur. No suitable vegetation present.

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Packera ganderi	Gander's ragwort	None/SR/1B.2	Chaparral (burns, gabbroic outcrops)/perennial herb/Apr–June/1310–3935	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Pentachaeta aurea ssp. *aurea*	golden-rayed pentachaeta	None/None/4.2	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Riparian woodland, Valley and foothill grassland/annual herb/Mar–July/260–6070	Not expected to occur. No suitable vegetation present.
Phacelia ramosissima var. *austrolitoralis*	south coast branching phacelia	None/None/3.2	Chaparral, Coastal dunes, Coastal scrub, Marshes and swamps (coastal salt); sandy, sometimes rocky/perennial herb/Mar–Aug/15–985	Not expected to occur. No suitable vegetation present.
Phacelia stellaris	Brand's star phacelia	None/None/1B.1	Coastal dunes, Coastal scrub/annual herb/Mar–June/0–1310	Not expected to occur. No suitable vegetation present.
Pickeringia montana var. *tomentosa*	woolly chaparral-pea	None/None/4.3	Chaparral; Gabbroic, granitic, clay/evergreen shrub/May–Aug/0–5575	Not expected to occur. No suitable vegetation present.
Pinus torreyana ssp. *torreyana*	Torrey pine	None/None/1B.2	Closed-cone coniferous forest, Chaparral; Sandstone/perennial evergreen tree/N.A./95–525	Not expected to occur. No suitable vegetation present.
Piperia cooperi	chaparral rein orchid	None/None/4.2	Chaparral, Cismontane woodland, Valley and foothill grassland/perennial herb/Mar–June/45–5200	Not expected to occur. No suitable vegetation present.
Pogogyne abramsii	San Diego mesa mint	FE/SE/1B.1	Vernal pools/annual herb/Mar–July/295–655	Not expected to occur. No suitable vegetation present.
Pogogyne nudiuscula	Otay Mesa mint	FE/SE/1B.1	Vernal pools/annual herb/May–July/295–820	Not expected to occur. No suitable vegetation present.
Pseudognaphalium leucocephalum	white rabbit-tobacco	None/None/2B.2	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland; sandy, gravelly/perennial herb/(July)Aug–Nov(Dec)/0–6890	Not expected to occur. No suitable vegetation present.
Quercus cedrosensis	Cedros Island oak	None/None/2B.2	Closed-cone coniferous forest, Chaparral, Coastal scrub/perennial evergreen tree/Apr–May/835–3150	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Quercus dumosa	Nuttall's scrub oak	None/None/1B.1	Closed-cone coniferous forest, Chaparral, Coastal scrub; sandy, clay loam/perennial evergreen shrub/Feb–Apr(May–Aug)/45–1310	Not expected to occur. No suitable vegetation present.
Quercus engelmannii	Engelmann oak	None/None/4.2	Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland/perennial deciduous tree/Mar–June/160–4265	Not expected to occur. No suitable vegetation present.
Romneya coulteri	Coulter's matilija poppy	None/None/4.2	Chaparral, Coastal scrub; Often in burns/perennial rhizomatous herb/Mar–July(Aug)/65–3935	Not expected to occur. No suitable vegetation present.
Salvia munzii	Munz's sage	None/None/2B.2	Chaparral, Coastal scrub/perennial evergreen shrub/Feb–Apr/375–3495	Not expected to occur. No suitable vegetation present.
Selaginella cinerascens	ashy spike-moss	None/None/4.1	Chaparral, Coastal scrub/perennial rhizomatous herb/N.A./65–2100	Not expected to occur. No suitable vegetation present.
Senecio aphanactis	chaparral ragwort	None/None/2B.2	Chaparral, Cismontane woodland, Coastal scrub; sometimes alkaline/annual herb/Jan–Apr(May)/45–2625	Not expected to occur. No suitable vegetation present.
Sidalcea neomexicana	salt spring checkerbloom	None/None/2B.2	Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Playas; alkaline, mesic/perennial herb/Mar–June/45–5020	Not expected to occur. No suitable vegetation present.
Sphaerocarpos drewei	bottle liverwort	None/None/1B.1	Chaparral, Coastal scrub; openings, soil/ephemeral liverwort/N.A./295–1970	Not expected to occur. No suitable vegetation present.
Stemodia durantifolia	purple stemodia	None/None/2B.1	Sonoran desert scrub (often mesic, sandy)/perennial herb/(Jan)Apr,June,Aug,Sep,Oct,Dec/590–985	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Stipa diegoensis	San Diego County needle grass	None/None/4.2	Chaparral, Coastal scrub; rocky, often mesic/perennial herb/Feb–June/30–2625	Not expected to occur. No suitable vegetation present.
Streptanthus bernardinus	Laguna Mountains jewelflower	None/None/4.3	Chaparral, Lower montane coniferous forest/perennial herb/May–Aug/2195–8200	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Stylocline citroleum	oil neststraw	None/None/1B.1	Chenopod scrub, Coastal scrub, Valley and foothill grassland; clay/annual herb/Mar–Apr/160–1310	Not expected to occur. No suitable vegetation present.
Suaeda esteroa	estuary seablite	None/None/1B.2	Marshes and swamps (coastal salt)/perennial herb/(May)July–Oct(Jan)/0–15	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Suaeda taxifolia	woolly seablite	None/None/4.2	Coastal bluff scrub, Coastal dunes, Marshes and swamps (margins of coastal salt)/perennial evergreen shrub/Jan–Dec/0–165	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Tetracoccus dioicus	Parry's tetracoccus	None/None/1B.2	Chaparral, Coastal scrub/perennial deciduous shrub/Apr–May/540–3280	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.

Scientific Name	Common Name	Status (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Texosporium sancti-jacobi	woven-spored lichen	None/None/3	Chaparral (openings); On soil, small mammal pellets, dead twigs, and on *Selaginella* spp/*crustose lichen* (terricolous)/N.A./195–2165	Not expected to occur. No suitable vegetation present.
Triquetrella californica	coastal triquetrella	None/None/1B.2	Coastal bluff scrub, Coastal scrub; soil/moss/N.A./30–330	Not expected to occur. No suitable vegetation present.
Viguiera laciniata	San Diego County viguiera	None/None/4.3	Chaparral, Coastal scrub/perennial shrub/Feb–June(Aug)/195–2460	Not expected to occur. No suitable vegetation present.
Xanthisma junceum	rush-like bristleweed	None/None/4.3	Chaparral, Coastal scrub/perennial herb/May–Jan/785–3280	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.

Attachment B

Special-Status Wildlife Species – Potential to Occur on Site

Row Labels	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Amphibians				
Anaxyrus californicus	arroyo toad	FE/SSC	Semi-arid areas near washes, sandy riverbanks, riparian areas, palm oasis, Joshua tree, mixed chaparral and sagebrush; stream channels for breeding (typically third order); adjacent stream terraces and uplands for foraging and wintering	Not expected to occur. No suitable vegetation present.
Spea hammondii	western spadefoot	None/SSC	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture	Not expected to occur. No suitable vegetation present.
Reptiles				
Anniella stebbinsi	southern California legless lizard	None/SSC	Coastal dunes, stabilized dunes, beaches, dry washes, valley–foothill, chaparral, and scrubs; pine, oak, and riparian woodlands; associated with sparse vegetation and moist sandy or loose, loamy soils	Not expected to occur. No suitable vegetation present.
Arizona elegans occidentalis	California glossy snake	None/SSC	Commonly occurs in desert regions throughout southern California. Prefers open sandy areas with scattered brush. Also found in rocky areas.	Not expected to occur. No suitable vegetation present.
Aspidoscelis hyperythra	orange-throated whiptail	None/WL	Low-elevation coastal scrub, chaparral, and valley–foothill hardwood	Not expected to occur. No suitable vegetation present.
Aspidoscelis tigris stejnegeri	San Diegan tiger whiptail	None/SSC	Hot and dry areas with sparse foliage, including chaparral, woodland, and riparian areas.	Not expected to occur. No suitable vegetation present.
Chelonia mydas	green sea turtle	FT/None	Shallow waters of lagoons, bays, estuaries, mangroves, eelgrass, and seaweed beds	Not expected to occur. No suitable habitat present.
Coleonyx variegatus abbotti	San Diego banded gecko	None/SSC	Rocky areas within coastal scrub and chaparral	Not expected to occur. No suitable vegetation present.
Coluber fuliginosus	Baja California coachwhip	None/SSC	In California restricted to southern San Diego County, where it is known from grassland and coastal sage scrub. Open areas in grassland and coastal sage scrub.	Not expected to occur. No suitable vegetation present.
Crotalus ruber	red diamondback rattlesnake	None/SSC	Coastal scrub, chaparral, oak and pine woodlands, rocky grasslands, cultivated areas, and desert flats	Not expected to occur. No suitable vegetation present.
Phrynosoma blainvillii	Blainville's horned lizard	None/SSC	Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley–foothill hardwood, conifer, riparian, pine–cypress, juniper, and annual grassland habitats	Not expected to occur. No suitable vegetation present.
Plestiodon skiltonianus interparietalis	Coronado skink	None/WL	Woodlands, grasslands, pine forests, and chaparral; rocky areas near water	Not expected to occur. No suitable vegetation present.
Salvadora hexalepis virgultea	coast patch-nosed snake	None/SSC	Brushy or shrubby vegetation; requires small mammal burrows for refuge and overwintering sites	Not expected to occur. No suitable vegetation present.
Thamnophis hammondii	two-striped gartersnake	None/SSC	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools	Not expected to occur. No suitable vegetation present.
Birds				
Accipiter cooperii (nesting)	Cooper's hawk	None/WL	Nests and forages in dense stands of live oak, riparian woodlands, or other woodland habitats often near water	Not expected to occur. No suitable vegetation present.
Agelaius tricolor (nesting colony)	tricolored blackbird	BCC/PSE, SSC	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberry; forages in grasslands, woodland, and agriculture	Not expected to occur. No suitable vegetation present.
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	None/WL	Nests and forages in open coastal scrub and chaparral with low cover of scattered scrub interspersed with rocky and grassy patches	Not expected to occur. No suitable vegetation present.
Ammodramus savannarum (nesting)	grasshopper sparrow	None/SSC	Nests and forages in moderately open grassland with tall forbs or scattered shrubs used for perches	Not expected to occur. No suitable vegetation present.
Aquila chrysaetos (nesting and wintering)	golden eagle	BCC/FP, WL	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	Not expected to occur. No suitable vegetation present.
Artemisiospiza belli belli	Bell's sage sparrow	BCC/WL	Nests and forages in coastal scrub and dry chaparral; typically in large, unfragmented patches dominated by chamise; nests in more dense patches but uses more open habitat in winter	Not expected to occur. No suitable vegetation present.
Athene cunicularia (burrow sites and some wintering sites)	burrowing owl	BCC/SSC	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	Not expected to occur. No suitable vegetation present.
Buteo swainsoni (nesting)	Swainson's hawk	BCC/ST	Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture	Not expected to occur. No suitable vegetation present.

Row Labels	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Campylorhynchus brunneicapillus sandiegensis (San Diego and Orange Counties only)	coastal cactus wren	BCC/SSC	Southern cactus scrub patches	Not expected to occur. No suitable vegetation present.
Charadrius alexandrinus nivosus (nesting)	western snowy plover	FT, BCC/SSC	On coasts nests on sandy marine and estuarine shores; in the interior nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds	Not expected to occur. No suitable vegetation present.
Coccyzus americanus occidentalis (nesting)	western yellow-billed cuckoo	FT, BCC/SE	Nests in dense, wide riparian woodlands and forest with well-developed understories	Not expected to occur. No suitable vegetation present.
Coturnicops noveboracensis	yellow rail	BCC/SSC	Nesting requires wet marsh/sedge meadows or coastal marshes with wet soil and shallow, standing water	Not expected to occur. No suitable vegetation present.
Elanus leucurus (nesting)	white-tailed kite	None/FP	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	Not expected to occur. No suitable vegetation present.
Empidonax traillii extimus (nesting)	southwestern willow flycatcher	FE/SE	Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration	Not expected to occur. No suitable vegetation present.
Eremophila alpestris actia	California horned lark	None/WL	Nests and forages in grasslands, disturbed lands, agriculture, and beaches; nests in alpine fell fields of the Sierra Nevada	Not expected to occur. No suitable vegetation present.
Falco mexicanus (nesting)	prairie falcon	BCC/WL	Forages in grassland, savanna, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs	Not expected to occur. No suitable vegetation present.
Falco peregrinus anatum (nesting)	American peregrine falcon	FDL, BCC/SDL, FP	Nests on cliffs, buildings, and bridges; forages in wetlands, riparian, meadows, croplands, especially where waterfowl are present	Not expected to occur. No suitable vegetation present.
Icteria virens (nesting)	yellow-breasted chat	None/SSC	Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush	Not expected to occur. No suitable vegetation present.
Ixobrychus exilis (nesting)	least bittern	BCC/SSC	Nests in freshwater and brackish marshes with dense, tall growth of aquatic and semi-aquatic vegetation	Not expected to occur. No suitable vegetation present.
Laterallus jamaicensis coturniculus	California black rail	BCC/ST, FP	Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations	Not expected to occur. No suitable vegetation present.
Pandion haliaetus (nesting)	osprey	None/WL	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast	Not expected to occur. No suitable vegetation present.
Passerculus sandwichensis beldingi	Belding's savannah sparrow	None/SE	Nests and forages in coastal saltmarsh dominated by pickleweed (*Salicornia* spp.)	Not expected to occur. No suitable vegetation present.
Pelecanus occidentalis californicus (nesting colonies and communal roosts)	California brown pelican	FDL/SDL, FP	Forages in warm coastal marine and estuarine environments; in California, nests on dry, rocky offshore islands	Not expected to occur. No suitable vegetation present.
Phalacrocorax auritus (nesting colony)	double-crested cormorant	None/WL	Nests in riparian trees near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and open coastlines; winter habitat includes lakes, rivers, and coastal areas	Not expected to occur. No suitable vegetation present.
Polioptila californica californica	coastal California gnatcatcher	FT/SSC	Nests and forages in various sage scrub communities, often dominated by California sagebrush and buckwheat; generally avoids nesting in areas with a slope of greater than 40%; majority of nesting at less than 1,000 feet above mean sea level	Not expected to occur. No suitable vegetation present.
Rallus obsoletus levipes	Ridgway’s rail	FE/SE, FP	Coastal wetlands, brackish areas, coastal saline emergent wetlands	Not expected to occur. No suitable vegetation present.
Setophaga petechia (nesting)	yellow warbler	BCC/SSC	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	Not expected to occur. No suitable vegetation present.
Sternula antillarum browni (nesting colony)	California least tern	FE/SE, FP	Forages in shallow estuaries and lagoons; nests on sandy beaches or exposed tidal flats	Not expected to occur. No suitable vegetation present.
Vireo bellii pusillus (nesting)	least Bell's vireo	FE/SE	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	Not expected to occur. No suitable vegetation present.
Mammals				
Antrozous pallidus	pallid bat	None/SSC	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees	A bat roosting visual assessment of the existing recreational center and nearby trees concluded that there is no sign of roosting. Bats may forage on site, but the lack of water in the immediately surrounding area reduces bat activity on site.

Row Labels	Common Name	Status (Federal/State)	Habitat	Potential to Occur
Chaetodipus californicus femoralis	Dulzura pocket mouse	None/SSC	Open habitat, coastal scrub, chaparral, oak woodland, chamise chaparral, mixed-conifer habitats; disturbance specialist; 0 to 3,000 feet above mean sea level	Not expected to occur. No suitable vegetation present.
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	None/SSC	Coastal scrub, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon–juniper, and annual grassland	Not expected to occur. No suitable vegetation present.
Choeronycteris mexicana	Mexican long-tongued bat	None/SSC	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon–juniper woodland; roosts in caves, mines, and buildings	Not expected to occur. No suitable vegetation present.
Corynorhinus townsendii	Townsend's big-eared bat	None/SSC	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, man-made structures, and tunnels	Not expected to occur. No suitable vegetation present.
Euderma maculatum	spotted bat	None/SSC	Foothills, mountains, desert regions of southern California, including arid deserts, grasslands, and mixed-conifer forests; roosts in rock crevices and cliffs; feeds over water and along washes	Not expected to occur. No suitable vegetation present.
Eumops perotis californicus	western mastiff bat	None/SSC	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels	Not expected to occur. No suitable vegetation present.
Lasiurus blossevillii	western red bat	None/SSC	Forest, woodland, riparian, mesquite bosque, and orchards, including fig, apricot, peach, pear, almond, walnut, and orange; roosts in tree canopy	Not expected to occur. No suitable vegetation present.
Lasiurus xanthinus	western yellow bat	None/SSC	Valley–foothill riparian, desert riparian, desert wash, and palm oasis habitats; below 2,000 feet above mean sea level; roosts in riparian and palms	Not expected to occur. No suitable vegetation present.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	None/SSC	Arid habitats with open ground; grasslands, coastal scrub, agriculture, disturbed areas, and rangelands	Not expected to occur. No suitable vegetation present.
Neotoma lepida intermedia	San Diego desert woodrat	None/SSC	Coastal scrub, desert scrub, chaparral, cacti, rocky areas	Not expected to occur. No suitable vegetation present.
Nyctinomops femorosaccus	pocketed free-tailed bat	None/SSC	Pinyon–juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oases; roosts in high cliffs or rock outcrops with drop-offs, caverns, and buildings	Not expected to occur. No suitable vegetation present.
Nyctinomops macrotis	big free-tailed bat	None/SSC	Rocky areas; roosts in caves, holes in trees, buildings, and crevices on cliffs and rocky outcrops; forages over water	A bat roosting visual assessment of the existing recreational center and nearby trees concluded that there is no sign of roosting. Bats may forage on site, but the lack of water in the immediately surrounding area reduces bat activity on site.
Perognathus longimembris pacificus	Pacific pocket mouse	FE/SSC	fine-grained sandy substrates in open coastal strand, coastal dunes, and river alluvium	Not expected to occur. No suitable vegetation present.
Taxidea taxus	American badger	None/SSC	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	Not expected to occur. No suitable vegetation present.
Invertebrates				
Branchinecta sandiegonensis	San Diego fairy shrimp	FE/None	Vernal pools, non-vegetated ephemeral pools	Not expected to occur. No suitable vegetation present.
Euphydryas editha quino	quino checkerspot butterfly	FE/None	Annual forblands, grassland, open coastal scrub and chaparral; often soils with cryptogamic crusts and fine-textured clay; host plants include Plantago erecta, Antirrhinum coulterianum, and Plantago patagonica (Silverado Occurrence Complex)	Not expected to occur. No suitable vegetation present.
Lycaena hermes	Hermes copper	FC/None	Mixed woodlands, chaparral, and coastal scrub	Not expected to occur. No suitable vegetation present.
Streptocephalus woottoni	Riverside fairy shrimp	FE/None	Vernal pools, non-vegetated ephemeral pools	Not expected to occur. No suitable vegetation present.

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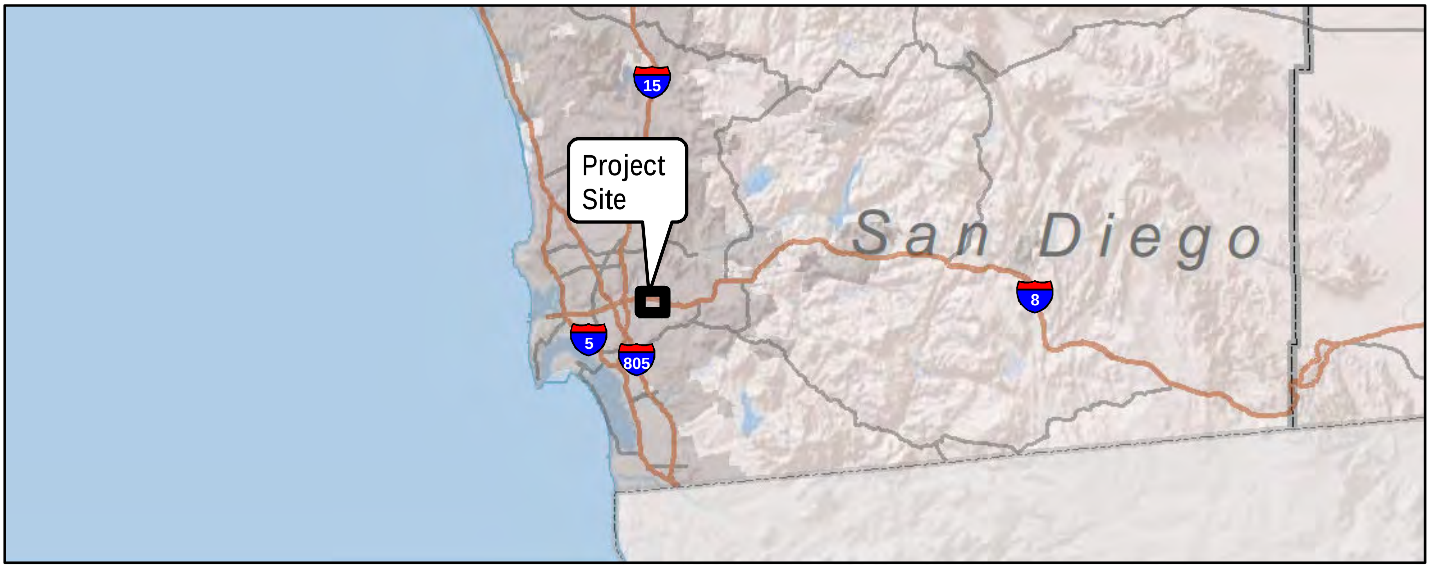
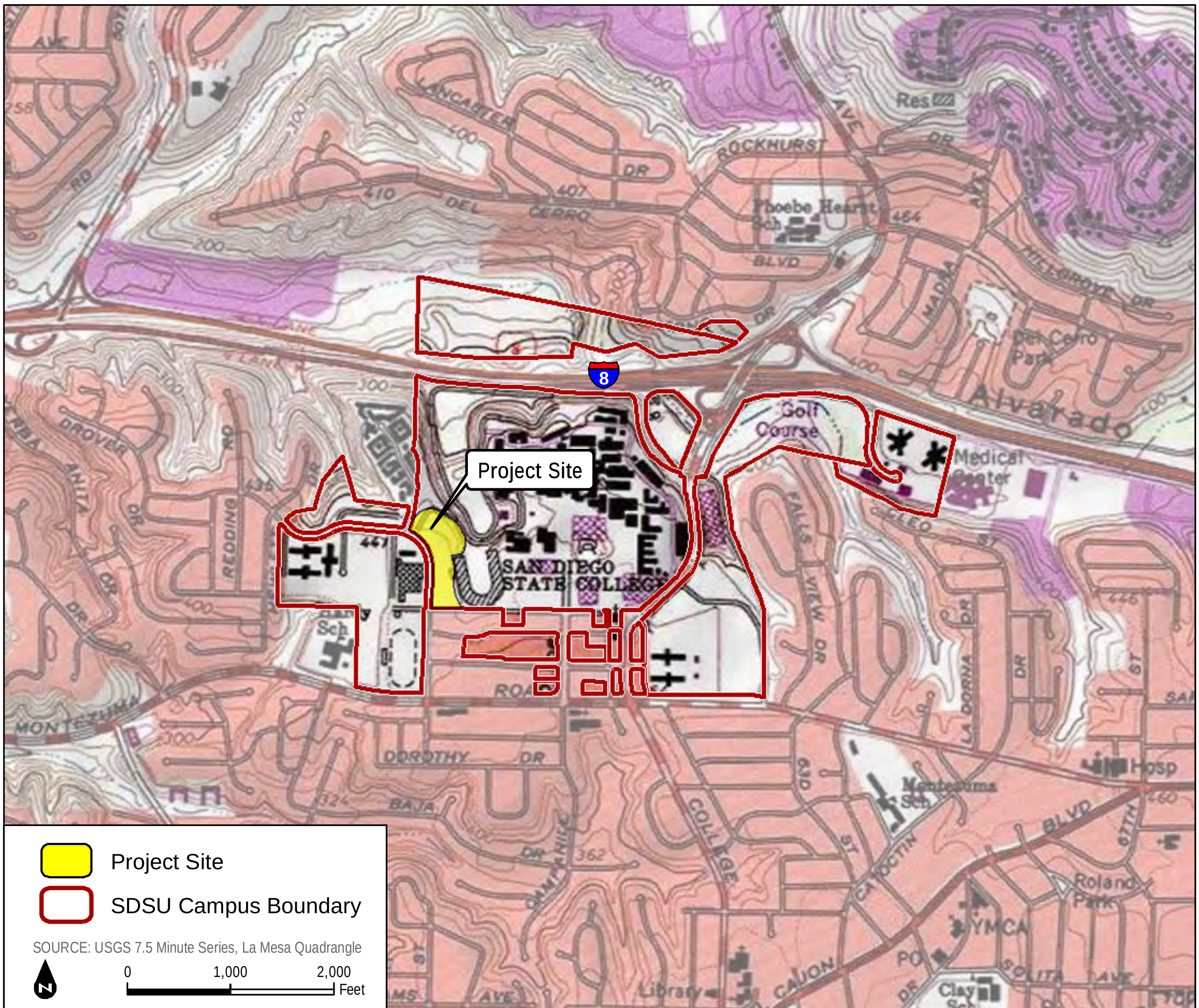




SDSU ARC Expansion Project

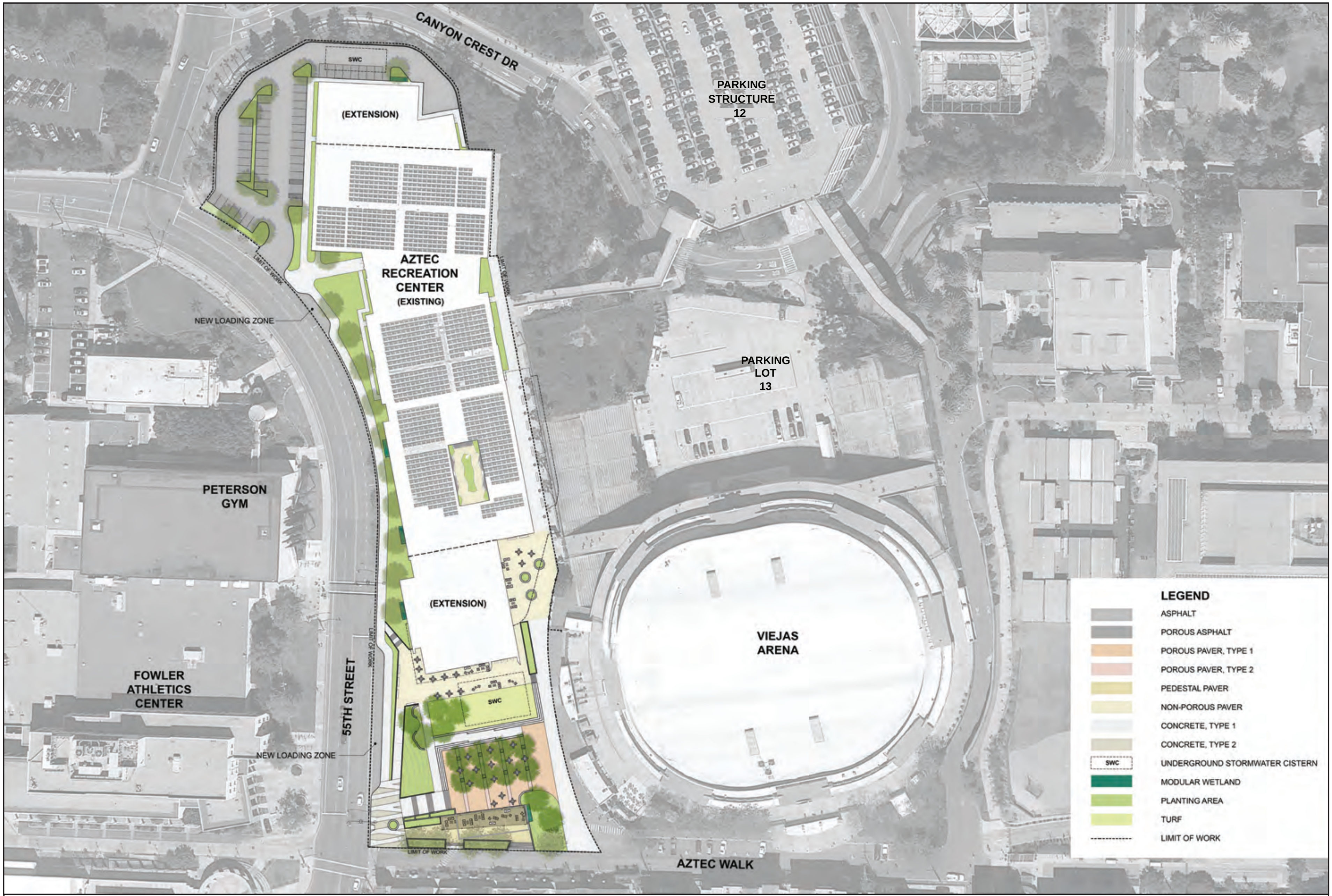
SAN DIEGO STATE UNIVERSITY

Figure 1
Project Location

SDSU ARC Expansion Project

SAN DIEGO STATE UNIVERSITY

Figure 2
Project Site



SDSU ARC Expansion Project

San Diego State University

Figure 3

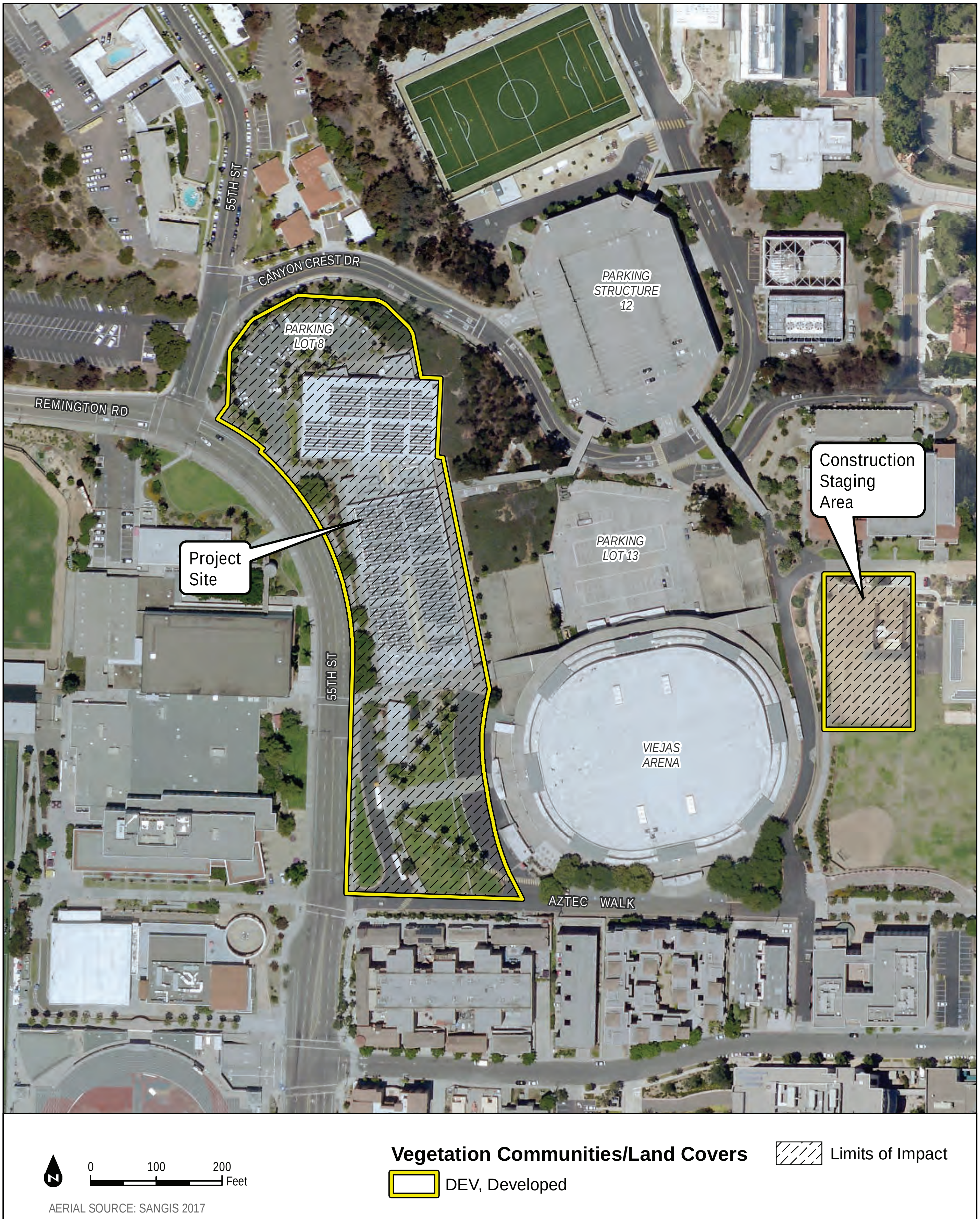
Site Plan

SOURCE: McCarthy / SmithGroupJJR 2018

SDSU ARC Expansion Project

San Diego State University

Figure 6
Architectural Rendering – Southern Elevation



Vegetation Communities/Land Covers

DEV, Developed

Limits of Impact

SDSU ARC Expansion Project

SAN DIEGO STATE UNIVERSITY

Figure 7
Vegetation Communities and Land Covers with Limits of Impact

Appendix B
Transportation Impact Analysis

Linscott Law & Greenspan engineers

Transportation Impact Analysis

SDSU Aztec Recreation Center Expansion

San Diego, California
November 8, 2018

LLG Ref. 3-18-2969

Prepared by:

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Transportation Engineer II

Under the Supervision of:

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TRANSPORTATION IMPACT ANALYSIS

SDSU AZTEC RECREATION CENTER EXPANSION

San Diego, California
November 8, 2018

1.0 INTRODUCTION

Linscott, Law & Greenspan, Engineers (LLG) has prepared this report to assess the potential transportation-related impacts associated with the proposed San Diego State University (SDSU) Aztec Recreational Center (ARC) Expansion project ("Project").

This report includes the following sections:

- Project Description
- Existing Conditions Discussion
- Analysis Approach and Methodology
- Significance Criteria
- Existing Capacity Analysis
- Cumulative Projects
- Project Trip Generation/Distribution/Assignment
- Project Buildout Capacity Analysis
- VMT Analysis
- Construction Impacts Analysis
- Access Analysis
- Pedestrian/Bicycle/Transit Analysis
- Significance of Impacts and Mitigation Measures

2.0 PROJECT DESCRIPTION

The proposed Project includes expanding the existing ARC by approximately 68,000 square feet. Approximately 42,000 square feet of the 68,000 square foot expansion would involve the conversion of the gyms currently used as cardio fitness and weight-lifting areas back to their intended use as one four-court gym and other smaller, single-court gyms. With the expansion, the ARC building would consist of two stories, a proposed courtyard, and associated landscaping. On the first level, the proposed Project would involve expansion of the ARC south of the existing ARC and the addition of a multi-activity court gym to the northwest. The new southern portion of the ARC would include a classroom pavilion, a terrace café, gender-neutral locker rooms and restrooms, the Canyon Lounge, three group fitness rooms, a climbing court, and an open fitness room. The proposed Project would also involve expansion of the existing ARC on the second level. This level would include three group fitness areas, an administration building, and an open fitness area enclosed by a three-lane indoor running track.

In addition to newly renovated recreational spaces, the proposed Project would also include storage spaces to support operation of the outdoor program and other programs in the expanded facilities, as well as facility maintenance and repair. Space for laundry operations would be provided close to equipment checkout. The proposed project does not include any increase in student enrollment and, therefore, any increase in use of the ARC by the campus community would be solely due to the availability of expanded and improved facilities; this is also the case as to public use of the facility.

Access to the Project's existing parking lot (i.e. Parking Lot 8) via an existing driveway off 55th Street would remain. The existing one-way drop-off/pick-up lane would be removed and replaced with two drop-off/pick-up turnouts along the east side of 55th Street.

The Project Vicinity Map is shown in ***Figure 2–1***. A detailed Project Area Map is shown in ***Figure 2–2***. ***Figure 2–3*** depicts the Conceptual Site Plan.

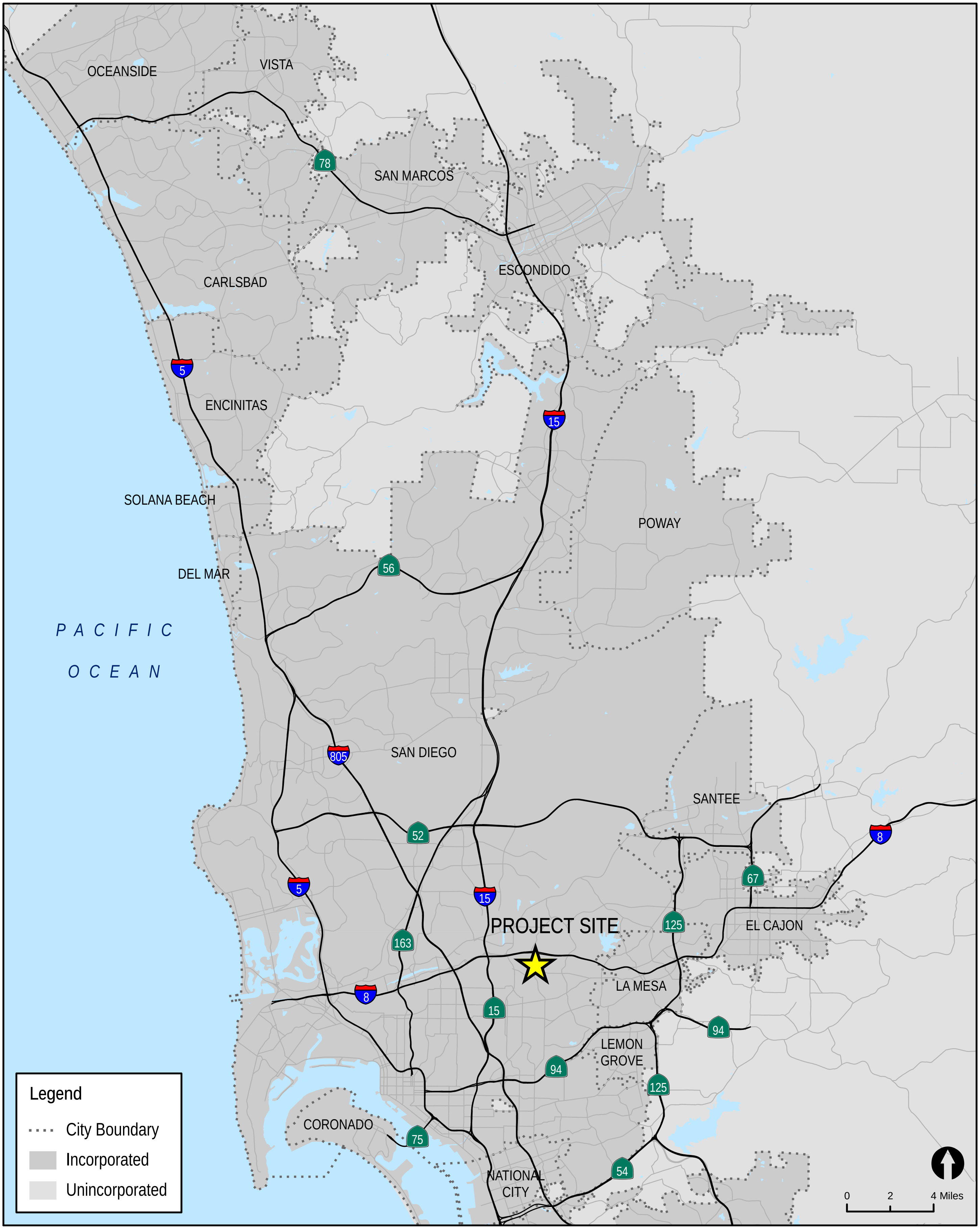

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Figure 2-1

Vicinity Map

SDSU ARC EXPANSION

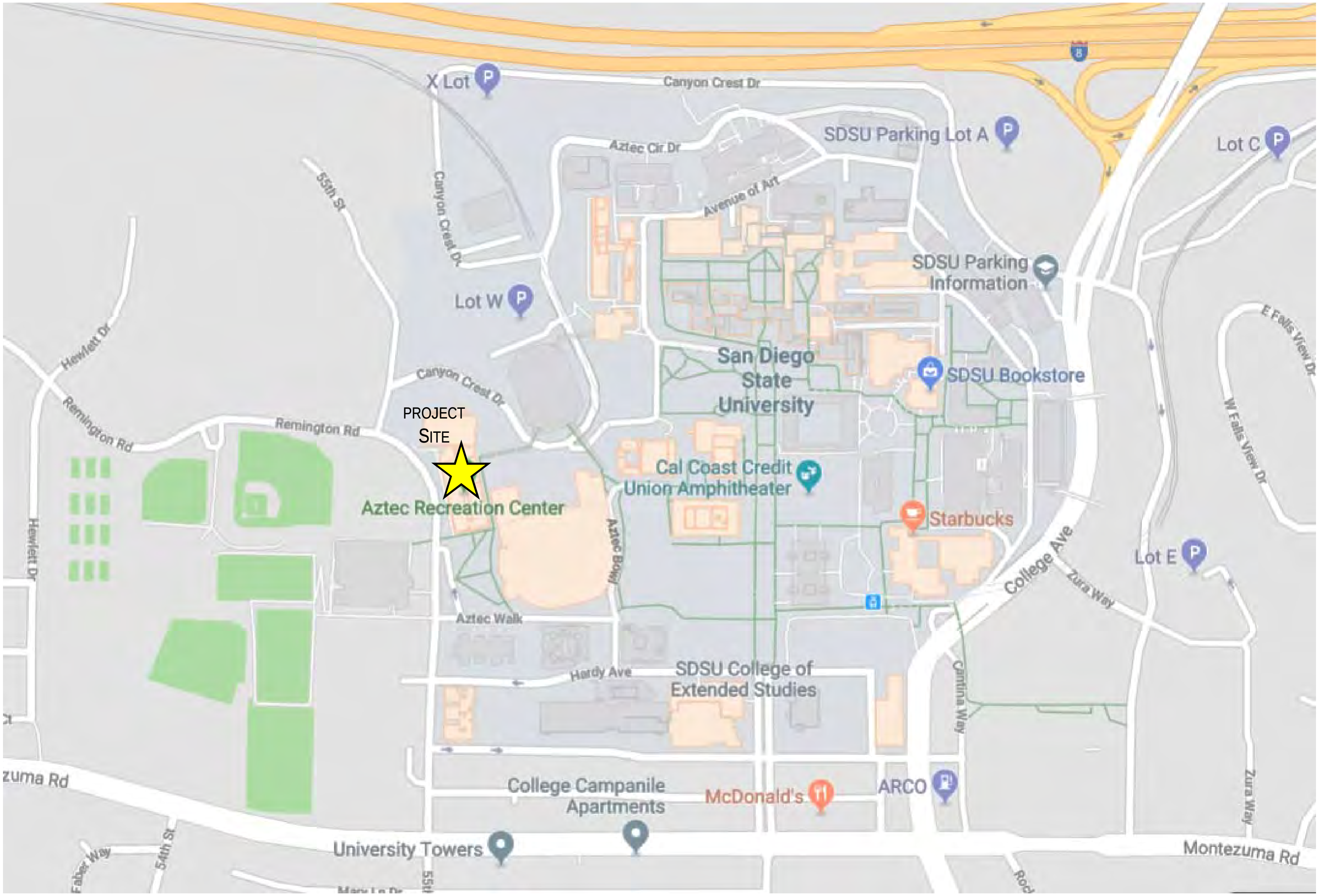

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Figure 2–2

Project Area Map

SDSU ARC EXPANSION

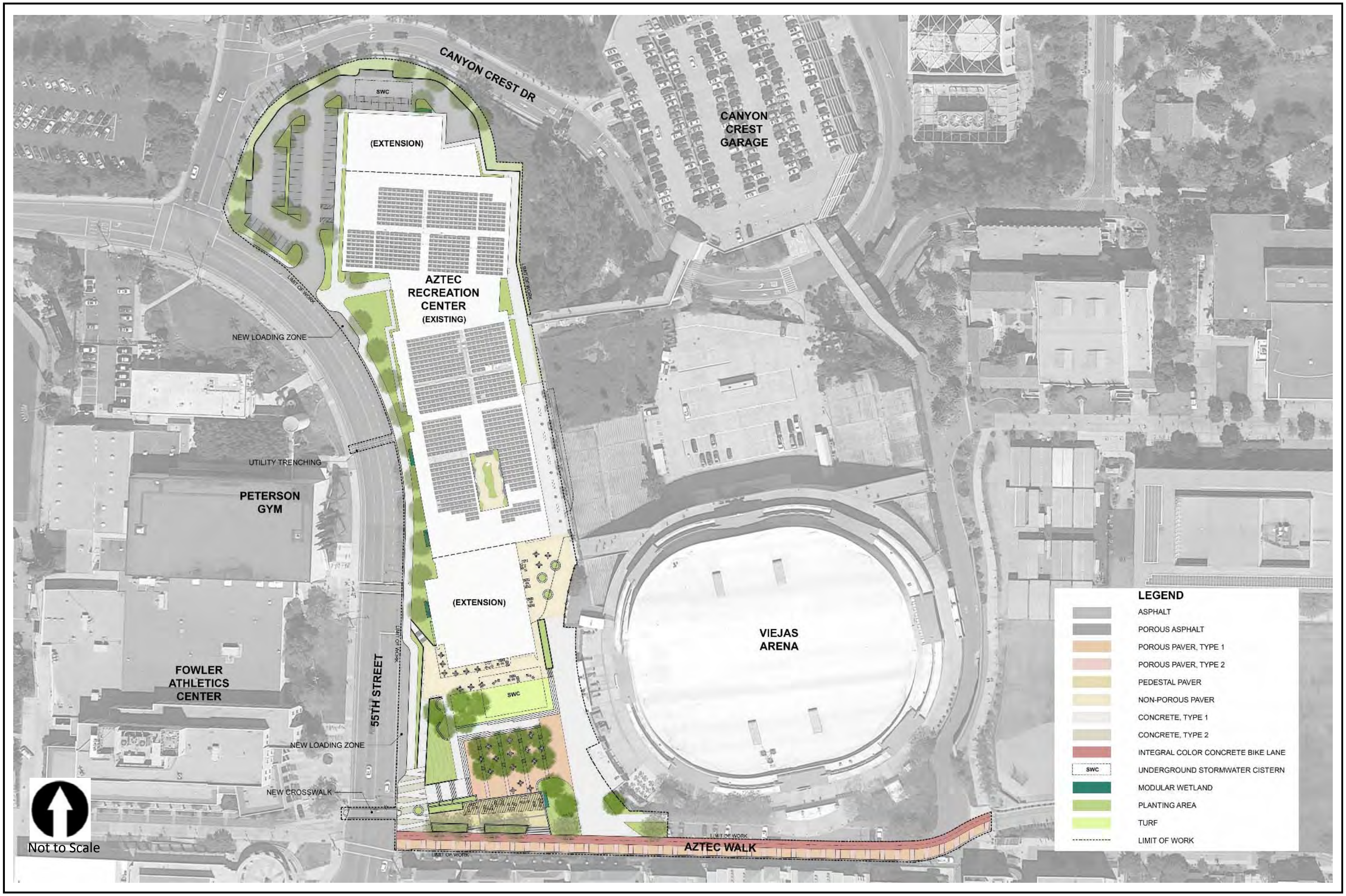

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Figure 2–3

Conceptual Site Plan

SDSU ARC EXPANSION

3.0 Existing Conditions Discussion

Effective evaluation of the traffic impacts associated with the proposed Project requires an understanding of the existing transportation system within the Project area. The intersections and segments included in the study area are listed below. These locations were chosen based on the anticipated distribution of Project traffic and the Project's proximity to arterials and freeways. ***Figure 3–1*** shows an existing conditions diagram, including intersection control and lane configurations.

Intersections

1. Remington Road / 55th Street
2. 55th Street / Peterson Gym
3. 55th Street / Aztec Walk
4. 55th Street / Hardy Avenue
5. Montezuma Road / Yerba Santa Drive
6. Montezuma Road / 55th Street

Segments

A. Remington Road, west of 55th Street
B. 55th Street, between Remington Road and Hardy Road
C. 55th Street, between Hardy Road and Montezuma Road
D. Montezuma Road, between Collwood Boulevard and 55th Street
E. Montezuma Road, between 55th Street and College Avenue

3.1 Existing Street Network

The following is a description of the existing street network in the study area.

Montezuma Road is classified as a 4-Lane Major Arterial in the *City of San Diego General Plan*. It is constructed as a divided four-lane roadway from Collwood Boulevard to 55th Street and an undivided four lane roadway between 55th Street and College Avenue. Montezuma Road has a posted speed limit of 35-45 MPH between Collwood Boulevard and College Avenue. On-street parking is prohibited except between 55th Street and Campanile Drive.

Remington Road is classified as a 2-Lane Collector (no fronting property) in the *City of San Diego General Plan*. It is currently constructed as a two-lane undivided roadway with a speed limit of 25 MPH. Parking is prohibited along Remington Road between 55th Street and Hewlett Drive.

55th Street is classified as a 4-Lane Collector in the *City of San Diego General Plan*. It is constructed as a four-lane undivided roadway with a speed limit of 25 MPH. Parking is prohibited along 55th Street between Montezuma Road and Remington Road.

3.2 Existing Bicycle Network

Currently, there are Class II bike facilities along Montezuma Road from Yerba Santa Drive to 55th Street and along 55th Street from Montezuma Road to Hewlett Drive.

3.3 Existing Pedestrian Conditions

Sidewalks are provided throughout the study area. The Peterson Gym / 55th Street and the Aztec Walk / 55th Street intersections are heavily utilized in the east-west direction by pedestrians coming from the campus core to the classrooms and athletic fields on the west side of 55th Street and vice versa.

3.4 Existing Transit Conditions

The study area is serviced by the San Diego Metropolitan Transit System (MTS) via both bus and light rail (the trolley). Montezuma Road from Collwood Boulevard to Campanile Drive is serviced by Bus Routes 11 and 955. In addition, a bus stop on Montezuma Road between Campanile Drive and College Drive serves as a hub for Bus Routes 11, 115, 856, 936, and 955.

In addition to these bus routes, the SDSU Transit Center is located in close proximity to the Project area. The SDSU Transit Center has a trolley stop for the Green Line, which runs roughly parallel to Interstate 8 with a western terminus at 12th and Imperial Avenue in Downtown San Diego and an eastern terminus in the Trolley Square Town Center in the City of Santee. The SDSU Transit Center also includes a bus stop for Bus Routes 11, 14, 115, 215, 856, 936, and 955. Bus Route 215 is a Bus Rapid Transit (BRT) service that provides express travel to and from SDSU and Downtown San Diego.

3.5 Existing Shuttle Routes

The SDSU Red & Black Shuttle provides pick up and drop off services at 18 stops on and off campus. The shuttle services the study area with a stop at the one-way drop-off/pick-up lane located west of the Viejas Arena.

3.6 Existing Traffic Volumes

Table 3–1 is a summary of the average daily traffic (ADT) volumes from counts conducted by National Data & Surveying Services in September and October of 2018, when school was in session. Intersection counts at the study area intersections, including bicycle and pedestrian counts, were conducted during the AM (7:00-9:00 AM) and PM (4:00-6:00 PM) peak periods. .

Figure 3–2 shows the Existing Traffic Volumes. ***Appendix A*** contains the count sheets.

TABLE 3–1
EXISTING TRAFFIC VOLUMES

Street Segment	ADT[a]
Remington Road	
West of 55th Street	2,250
55th Street	
Remington Road to Hardy Road	10,680
Hardy Road to Montezuma Road	14,270
Montezuma Road	
Collwood to 55th Street	27,550
55th Street to College Avenue	23,780

Footnotes:
a. Average Daily Traffic Volumes rounded up to the nearest 10 digit interval

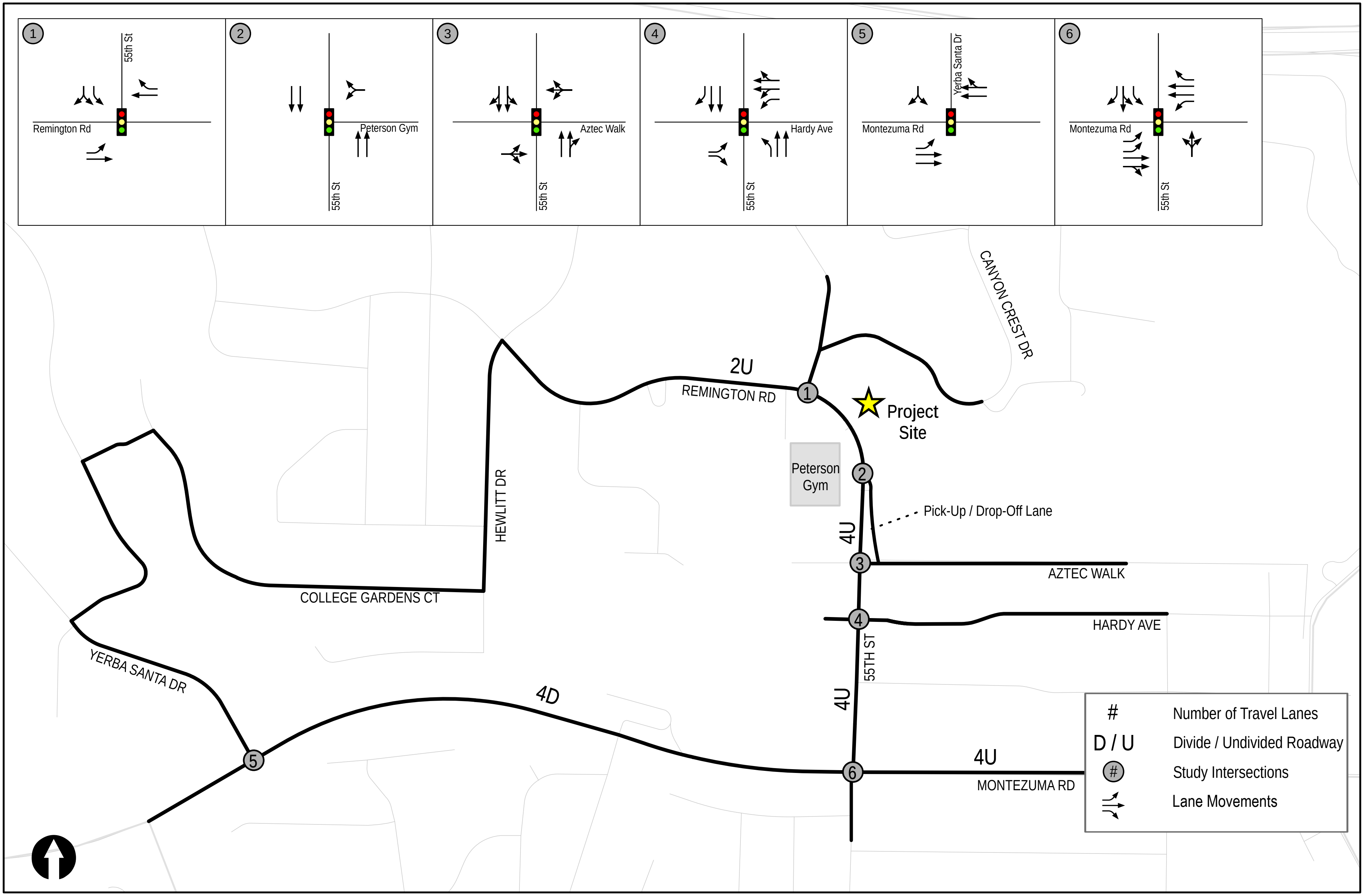

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Figure 3-1

Existing Conditions

SDSU ARC EXPANSION

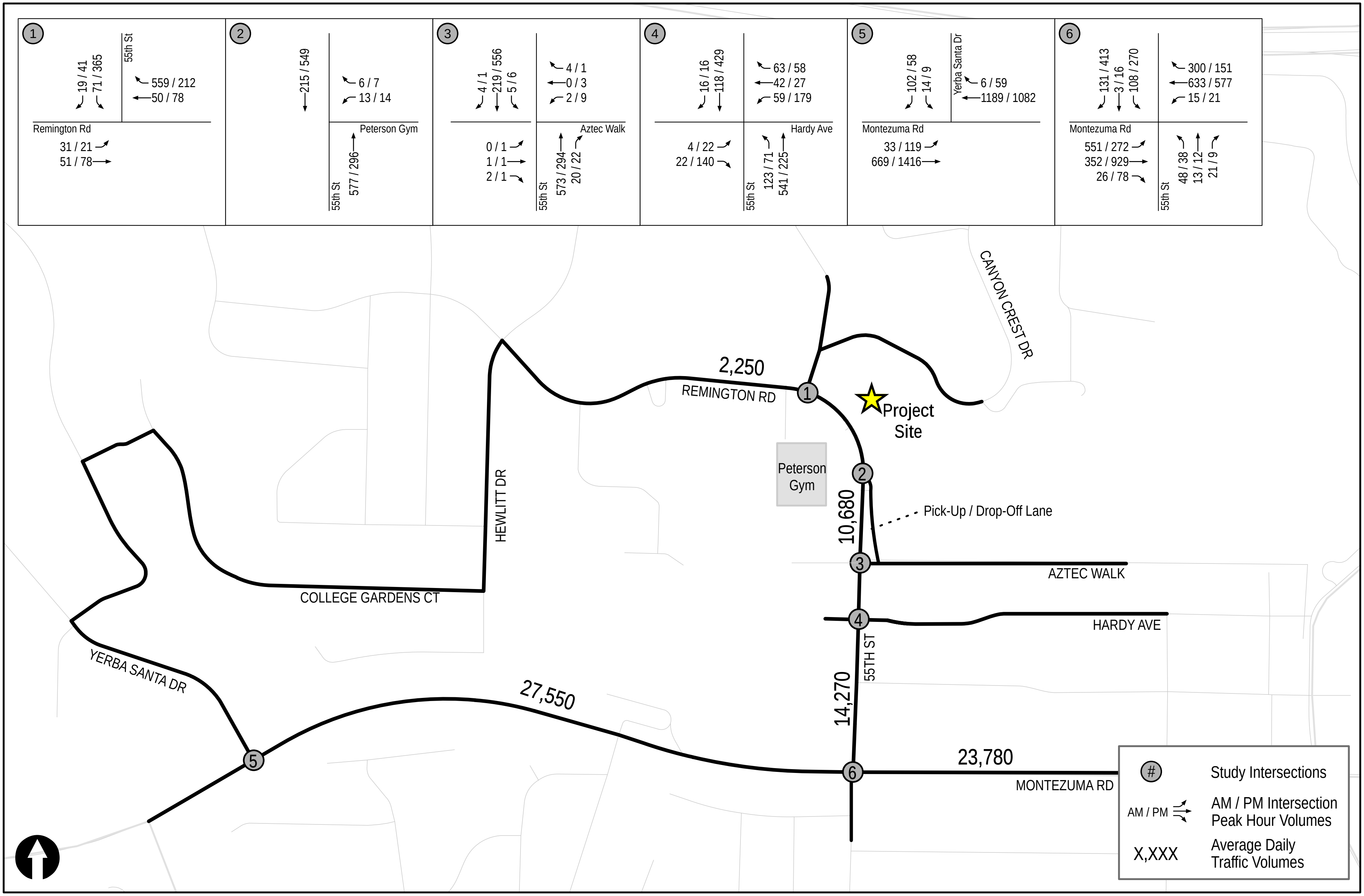

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Figure 3-2

Existing Traffic Volumes

SDSU ARC EXPANSION

4.0 ANALYSIS APPROACH AND METHODOLOGY

4.1 Analysis Approach

The following scenarios were analyzed in this report:

- Existing
- Existing + Project
- Existing + Cumulative Projects
- Existing + Cumulative Projects + Project

4.2 Analysis Methodology

Level of service (LOS) is the term used to denote the different operating conditions that occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of service designation is reported differently for signalized and unsignalized intersections, as well as for roadway segments.

4.2.1 *Intersections*

Signalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 19 of the *Highway Capacity Manual 6th Edition (HCM 6),* with the assistance of the *Synchro 10* computer software. *Synchro 10* computer software provides the option to report results using HCM 6, HCM 2010 and HCM 2000 methodologies. Two study intersections do not produce results using the HCM 6 nor the HCM 2010 methodologies because of limitations within Synchro and specific controller operations. Therefore, HCM 2000 methodology was used in the analysis of the following intersections:

- 55th Street / Peterson Gym
- 55th Street / Aztec Walk

The delay values (represented in seconds) were qualified with a corresponding intersection Level of Service (LOS). A more detailed explanation of the methodology is attached in ***Appendix B***.

4.2.2 *Street Segments*

Street segment analysis is based upon the comparison of daily traffic volumes (ADTs) to the City of San Diego's *Roadway Classification, Level of Service, and ADT Table*. This table provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics. The City of San Diego's *Roadway Classification, Level of Service, and ADT Table* is attached in ***Appendix C***.

5.0 SIGNIFICANCE CRITERIA

In order to analyze whether or not the proposed project would result in any significant effects relating to transportation, the potential impacts of the project were measured against two different sets of significance thresholds. The first is the Cal State University (CSU) criteria as set forth in Cal State University's "Transportation Impact Study Manual" dated November 2012. The second is the City of San Diego criteria as set forth in the "Significance Determination Thresholds" dated July 2016. Both sets of thresholds are described below:

CSU THRESHOLDS

Under CEQA Guidelines, Appendix G, in considering whether the proposed Project would have a significant impact related to transportation/traffic, the following inquiries are to be addressed:

Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel, and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? (The proposed Project would not result in a change in air traffic patterns and, therefore, no further analysis of this criterion is required.)

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)? (The proposed Project does not include design features or incompatible uses that would substantially increase hazards, and, therefore, no further analysis of this criterion is required.)

e) Result in inadequate emergency access?

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

In considering the Appendix G criteria, the California State University *Transportation Impact Study Manual* (November 2012) provides the following guidance in assessing whether a project's transportation-related impacts are significant:

Off-Site Traffic Operations

- A roadway segment or intersection operates at LOS D or better under a no project scenario and the addition of project trips causes overall traffic operations on the facility to operate at LOS E or F.
- A roadway segment or intersection operates at LOS E or F under a no project scenario and the project adds both 10 or more peak hour trips and 5 seconds or more of peak hour delay, during the same peak hour.
- If an intersection operates at a very poor LOS F (control delay of 120 seconds or more), the significance criterion shall be an increase in v/c ratio of 0.02 or more.

Bicycle Facilities

- A project significantly disrupts existing or planned bicycle facilities or significantly conflicts with applicable non-automotive transportation plans, guidelines, policies, or standards.

Pedestrian Facilities and Americans with Disabilities Act (ADA) compliance

- A project fails to provide safe pedestrian connections between campus buildings and adjacent streets and transit facilities.
- A project significantly disrupts existing or planned pedestrian facilities or significantly conflicts with applicable non-automotive transportation plans, guidelines, policies, or standards.

Transit

- A project significantly disrupts existing or planned transit facilities and services or significantly conflicts with applicable transit plans, guidelines, policies, or standards.

Intersection Traffic Control

- The addition of project traffic causes an all-way stop-controlled or side street stop-controlled intersection to meet Caltrans signal warrant criteria.

Transportation Plan Consistency

- A project significantly conflicts or creates significant inconsistencies with applicable transportation policies or the Campus Master Plan transportation policies.

Safety

- Directly or indirectly cause or expose all users (motorists, pedestrians, bicyclists, and bus riders) to a permanent and substantial transportation hazard due to a new or existing physical design feature or incompatible uses.

Construction Period (Temporary)

- The construction of a project creates a temporary but prolonged significant impact due to lane closures, need for temporary signals, emergency vehicles access, traffic hazards to bikes/pedestrians, damage to roadbed, truck traffic on roadways not designated as truck routes, etc.

On-Site Circulation

- Project designs for on-site circulation, access, and parking areas are inconsistent with the circulation and parking plans in the Campus Master Plan or with applicable roadway design standards.

- A project fails to provide adequate accessibility for service and delivery trucks on-site, including access to truck loading areas.

- A project fails to provide adequate accessibility for buses accessing appropriate drop-off areas on-campus.

- A project fails to provide adequate accessibility for pedestrians and bicyclists.

CITY OF SAN DIEGO THRESHOLDS

While SDSU as a state agency is not subject to local planning regulations such as the City of San Diego traffic guidelines, the City's thresholds of significance also are utilized in this case to evaluate the Project impacts as additional information relative to criteria a) and b). According to the City's *Significance Determination Thresholds* dated July 2016, a project is considered to have a significant impact if project traffic would decrease the operations of surrounding roadways by a defined threshold. For projects deemed complete on or after January 1, 2007, the City defined thresholds are shown in ***Table 5–1***.

The impact is designated either a "direct" or "cumulative" impact. According to the City's *Significance Determination Thresholds*,

> "*Direct* traffic impacts are those projected to occur at the time a proposed development becomes operational, including other developments not presently operational but which are anticipated to be operational at that time (near term)."

> "*Cumulative* traffic impacts are those projected to occur at some point after a proposed development becomes operational, such as during subsequent phases of a project and when additional proposed developments in the area become operational (short-term cumulative) or when affected community plan area reaches full planned buildout (long-term cumulative)."

It is possible that a project's near term (direct) impacts may be reduced in the long term, as future projects develop and provide additional roadway improvements (for instance, through implementation of traffic phasing plans). In such a case, the project may have direct impacts but not contribute considerably to a cumulative impact."

For intersections and roadway segments affected by a project, level of service (LOS) D or better is considered acceptable under both direct and cumulative conditions."

If the project exceeds the thresholds in *Table 5–1*, then the project is considered to have a significant "direct" or "cumulative" project impact. A significant impact can also occur if a project causes the Level of Service to degrade from D to E, even if the allowable increases in *Table 5–1* are not exceeded. A feasible mitigation measure will need to be identified to return the impact within the City thresholds, or the impact will be considered significant and unmitigated.

TABLE 5–1
CITY OF SAN DIEGO
TRAFFIC IMPACT SIGNIFICANT THRESHOLDS

Level of Service with Project[b]	**Allowable Increase Due to Project Impacts**[a]					
	Freeways		**Roadway Segments**		**Intersections**	**Ramp Metering**[c]
	V/C	**Speed (mph)**	**V/C**	**Speed (mph)**	**Delay (sec.)**	**Delay (min.)**
E	0.010	1.0	0.02	1.0	2.0	2.0
F	0.005	0.5	0.01	0.5	1.0	1.0

Footnotes:

a. If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are determined to be significant. The project applicant shall then identify feasible improvements (within the Traffic Impact Study) that will restore/and maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see note b), or if the project adds a significant amount of peak-hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for mitigating the project's direct significant and/or cumulatively considerable traffic impacts.

b. All LOS measurements are based upon Highway Capacity Manual procedures for peak-hour conditions. However, V/C ratios for roadway segments are estimated on an ADT/24-hour traffic volume basis (using Table 2 of the City's Traffic Impact Study Manual). The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped locations). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.

c. The allowable increase in delay at a ramp meter with more than 15 minutes delay and freeway LOS E is 2 minutes. The allowable increase in delay at a ramp meter with more than 15 minutes delay and freeway LOS F is 1 minute.

General Notes:

1. Delay = Average control delay per vehicle measured in seconds for intersections or minutes for ramp meters
2. LOS = Level of Service
3. V/C = Volume to Capacity ratio
4. Speed = Arterial speed measured in miles per hour

Also, according to the City of San Diego's *Significance Determination Thresholds*, other possible significant impacts that are not accounted for in *Table 5–1* include the following:

- If a project would increase traffic hazards to motor vehicles, bicyclists or pedestrians due to proposed non-standard design features (e.g., poor sight distance, proposed driveway onto an access-restricted roadway), the impact would be significant.

- If a project would result in the construction of a roadway which is inconsistent with the General Plan and/or a community plan, the impact would be significant if the proposed roadway would not properly align with other existing or planned roadways.

- If a project would result in a substantial restriction in access to publicly or privately owned land, the impact would be significant.

6.0 ANALYSIS OF EXISTING CONDITIONS

6.1 Peak Hour Intersection Levels of Service

Table 6–1 summarizes the peak hour intersection operations under the Existing scenario. As shown in *Table 6–1*, the study intersections currently operate at LOS D or better, except at the following location:

- 55th St / Montezuma Rd (LOS E during the PM peak hour)

Appendix D contains the Existing intersection analysis calculation worksheets.

6.2 Daily Street Segment Levels of Service

Table 6–2 summarizes the existing roadway segment operations under the Existing scenario. As shown in *Table 6–2*, all the study segments operate at LOS D or better.

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing	
			Delay[a]	LOS[b]
1. 55th Street / Remington Road	Signal	AM PM	7.8 12.2	A B
2. 55th Street / Peterson Gym	Signal	AM PM	2.6 4.0	A A
3. 55th Street / Aztec Walk	Signal	AM PM	3.5 2.1	A A
4. 55th Street / Hardy Avenue	Signal	AM PM	27.1 24.8	C C
5. Montezuma Road / Yerba Santa Drive	Signal	AM PM	10.3 10.1	B B
6. 55th Street / Montezuma Road	Signal	AM PM	47.1 59.8	D E

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service.

SIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

TABLE 6–2
EXISTING STREET SEGMENT OPERATIONS

Street Segment	Existing Functional Classification	Capacity (LOS E) [a]	ADT [b]	LOS [c]	V/C [d]
Remington Road					
West of 55th Street	2-Lane Collector (no fronting property)	10,000	2,250	A	0.225
55th Street					
Remington Road to Hardy Road	4-Lane Collector	30,000	10,680	B	0.356
Hardy Road to Montezuma Road	4-Lane Collector	30,000	14,270	C	0.476
Montezuma Road					
Collwood Boulevard to 55th Street	4-Lane Major Arterial	40,000	27,550	C	0.689
55th Street to College Avenue	4-Lane Collector	30,000	23,780	D	0.793

Footnotes:

a. Capacities based on the City of San Diego Roadway Classification Table.
b. Average Daily Traffic Volumes.
c. Level of Service.
d. Volume to Capacity.

7.0 CUMULATIVE PROJECTS

There are other planned projects in the areas adjacent to the Project site that will add traffic to the roadways surrounding the Project location. Based on correspondence with City of San Diego and SDSU staff, a total of forty-five (45) cumulative projects were identified.

Table 7–1 contains the list of cumulative projects. ***Figure 7–1*** show the Cumulative Traffic Volumes. ***Figure 7–2*** shows the Existing + Cumulative Projects Traffic Volumes.

Table 7–1
Cumulative Projects Summary

C.P. #	Project Title	Project Location	Project Description	Status
Crossroads Redevelopment Area				
1a–1c	Crossroads Redevelopment Project	Three non-contiguous subareas within the following boundaries: (a) El Cajon Boulevard and University Avenue from 54th Street to the City of La Mesa, (b) the east side of 54th Street and north of College Grove Drive, and (c) Redwood and Thorn Streets, Martin Luther King Freeway, and 54th Street	Redevelopment project consisting of a variety of programmatic, residential, commercial, and public facilities with approximately 2,421 dwelling units ("DUs") proposed to be built over a 1,032-acre redevelopment area.	Approved
2	Chollas Triangle Redevelopment Project	South side of 5400 University Avenue	Pedestrian-oriented mixed-use project (possibly 500–600 DUs) on 36-acre site.	In Planning Process
College Community Redevelopment Area				
3	5566 Lindo Paseo	5566 Lindo Paseo	Demolish existing residences and construct a 7,771 SF, 26-bed fraternity house.	In Planning Process
4	SDSU Religious Centers Project	West of Campanile Drive, along Lindo Paseo and Hardy Avenue	Unknown	Anticipated Future Proposal
5	6195 Montezuma Road	6195 Montezuma Road	Demolish two existing single-family DUs and construct a four-story structure with two levels of underground parking. Construct 40 DUs (22 four-bedroom DUs, 2 three-bedroom DUs, and 16 two-bedroom DUs), 84 on-site parking spaces, and associated improvements.	Approved
6	Capstone	5030 College Avenue	Construct 94 residential apartment units (374 beds)	Under Construction
7	Sorority Row Housing Project	West side of College Avenue, south of Montezuma Road	Housing project for 215 student-sorority members on 1.56 acre vacant parcel. Project will include 65 apartments and 5 sorority chapter houses.	In Planning Process
8	Aztec Inn at SDSU	Northwest corner of Campanile Drive and Montezuma Road	74-room hotel with associated meeting rooms and retail and service areas.	On Hold

Cont'd on next page

TABLE 7–1
CUMULATIVE PROJECTS SUMMARY

C.P. #	Project Title	Project Location	Project Description	Status
9	Aztec Court Apartments	6229-6245 Montezuma Road	Demolish existing residences and construct 25 DUs	Approved
City of San Diego				
10	Centrepoint–Grantville (East & West)	Block bounded by Vandever Avenue, Fairmount Avenue, Twain Avenue, Mission Gorge Road	12-acre site for mixed-use development of 588 multi-family DUs and 135,228 SF of office, retail, and restaurant space.	Proposed
11	Grantville Trolley Station Transit Oriented Development ("TOD")	4510 Alvarado Canyon Road	Approximately 900 beds	Anticipated Future Proposal
12	Marburn Corp TM	5551 College Avenue	Subdivision of one existing vacant parcel into 24 single family residential lots and four HOA lots within environmentally sensitive lands located at the northeast corner of Interstate 8 and College Ave.	Approved
13	Grantville Veterans	4380 Alvarado Canyon Rd	Conversion of an existing motel to an 85 unit multi-family apartment building for permanent Veteran's Housing and Administrative Office.	Approved
14	Alvarado Lot 27/28 - SDP	5665 & 5560 Toyon Road	Create two single family residence on Lot 27 totaling 5,553 square feet and Lot 28 totaling 5,553 square feet.	Application in with the City
15	Aztec Budget Inn Redevelopment	6050 El Cajon Blvd	Construct up to 65 for-sale residential units, including 7 affordable, and 3,000 square-feet of retail space	Application in with the City
16	Carroll Canyon Mixed Use	Carroll Canyon Road, East of I-15	Demolition of the on-site office buildings and redevelopment of the site with a mixed use development that would include up to 260 multifamily residential units and approximately 10,700 SF of commercial retail space.	Draft EIR out for Circulation

Cont'd on next page

TABLE 7–1
CUMULATIVE PROJECTS SUMMARY

C.P. #	Project Title	Project Location	Project Description	Status
17	Friars Road Residential Mixed Use	Friars Road and Via De La Moda	Demolition of two 3-story buildings and one 2-story buildings and associated paved parking areas, driveways, and walkways. Subsequent construction would entail two-mixed use buildings with 313 (243 apartments and 70 condos) multi-family units with commercial space and over 2 stories of podium parking.	MND Released in December 2016
18	Alvarado Estates Area Utility Undergrounding	Alvarado Estates	Utility line undergrounding throughout the Alvarado Estates neighborhood and neighborhoods west of SDSU.	Draft EIR released January 2017
19	Water Main Upgrade	Remington Road	Water main pipeline upsizing on Remington Road.	Under Construction
20	UU973 Residential Block 701 Undergrounding Utility District Project	Bound by Interstate 8 to the north, Hewlett Drive to the east, Montezuma Rd to the south and Yerba Anita Drive to the west	The project would excavate trenches approximately 5 feet deep and 2.5 feet wide. The trenches would be located along one side of the public right-of-way, and would install conduit, substructures, and transformers located on concrete pads. In addition, the project would install cable through the conduits; provide individual customer connections, remove existing overhead lines and poles, and would install streetlights where applicable. Curb ramps would be installed where missing and, if applicable, street trees would be relocated or installed.	Under Construction
21	SDSU Alvarado Creek Drainage Restoration / City of San Diego Access Road Relocation	Bound by Interstate 8 to the north, Alvarado Road to the west, Alvarado court to the east, and Brockbank Place to the south.	Relocation of a City access road and SDSU's restoration of the Alvarado creek drainage.	Planning
22	Montezuma South	Near southeast corner of College Avenue and Montezuma Road	450 beds.	Anticipated Future Proposal

Cont'd on next page

TABLE 7–1
CUMULATIVE PROJECTS SUMMARY

C.P. #	Project Title	Project Location	Project Description	Status
San Diego State University				
23	College of Business Administration Building	Southeastern portion of SDSU, between College Avenue and East Campus Drive (existing Lot F)	170,000 SF College of Business building in Lot F.	Proposed
24	Performing Arts Building	Adjacent to the existing Music Building in the central portion of campus	Five-story, 50,000 SF building to house a 400-seat black box performing arts theatre, dance studios, drama rehearsal space, and support space.	Proposed
25	Softball Stadium Pressbox Addition	South of Remington Road, adjacent to Tony Gwynn Stadium	Construct press box at softball stadium.	On Hold (possible future project)
26	Children's Center Landscape Upgrade	East side of campus, east of College Avenue, north of Zura Way (north of South E Lot)	Landscape improvements.	In Design
27	PSFA Infrastructure Renewal	North side of campus	Repair and replace outdated and non-functional HVAC and electrical system components. Includes elevator modernization.	Under Construction
28	PSFA Refresh	North side of campus	Renovation of existing interior space and enclosure of an existing covered outdoor area to provide more program space.	On Hold (no funding)
29	Physics and Physics Astronomy Infrastructure Improvements	North side of campus	Repair and replace HVAC, electrical fire safety and plumbing systems. May be augmented with campus funds for refresh of finishes and roof replacement.	On Hold (funding reallocated)
30	Life Sciences Building Infrastructure Renewal	North side of campus	Repair and replace of building systems including HVAC, electrical, fire safety, plumbing, etc. May include roof replacement, elevator upgrades and refresh of finishes. Project will be phased over 507 years.	Planning
31	Adobe Falls Phase I	SDSU campus	48 townhome units on the eastern portion of the site	Planning

Cont'd on next page

TABLE 7–1
CUMULATIVE PROJECTS SUMMARY

C.P. #	Project Title	Project Location	Project Description	Status
32	Don Powel Theater Seating Bowl Replacement	SDSU campus	Demolish existing 10,000 SF seating bowl, lobby and restrooms and replace with 15,000 SF addition to provide accessible seating and other facilities.	Proposed
33	Campus Electrical Infrastructure Repair and Replacement Phase I	SDSU campus	Repair and replace of campus electrical distribution and building service infrastructure.	In Design
34	Campus Electrical Infrastructure Repair and Replacement Phase II	SDSU campus	Most likely a 2nd phase of campus electrical distribution and building service infrastructure, but could be other infrastructure depending on priorities that emerge between now and 2024.	Planning
35	Adobe Falls Phase 2	SDSU campus	A mix between 124 and 300 single family homes and town homes on the western portion of the site.	Planning
36	Educational Building Replacement	East side of campus	Demolish 17,300 GSF and build 57,800 GSF.	Planning
37	Campus Conference Center	East of 55th Street, immediately east of Viejas Arena	Three-story 70,000 SF building to provide meeting/conference space, office space, food services and retail services. The building would consist of 1 subterranean and 2 above ground floors.	Proposed
38	Olmeca/Maya Reconstruction	North of Montezuma Road, east of existing residence halls and Parking Structure 3 and 6.	Two 10 story buildings (approximately 350,000 SF in size to house approximately 1,600 students)	Proposed
40	G Lot Residence Hall and Student and Residential Life Administration Building	G Parking Lot	Ten-story 350,000 GSF building to house approximately 800 students; and two-story 15,000 GSF office and meeting space.	Proposed
41	Villa Alvarado Residential Hall Expansion	South of Interstate 8, east of College Avenue on C Lot	Additional apartments (approximately 50 two-bedroom apartments) in 2-3 story structure to provide an additional 200 beds.	Proposed

Cont'd on next page

TABLE 7–1
CUMULATIVE PROJECTS SUMMARY

C.P. #	Project Title	Project Location	Project Description	Status
42	Alvarado Campus – D Lot	South of Alvarado Road, north of an undeveloped slope and Alvarado Creek on D Lot	Approximately 280,000 SF of instructional research space.	Proposed
43	Alvarado Campus-Alvarado Medical Center	South of Alvarado Road, north of an undeveloped slope and Alvarado Creek at the existing Alvarado Medical Center	Approximately 332,285 SF of instruction and research space and a 1,840-car multi-story parking structure.	Proposed
44	SDSU Student Housing	Next to the existing Chapultepec Residence Hall on the northwest corner of the Remington Road/55th Street intersection, on the west side of the San Diego State University (SDSU) campus.	The proposed Project consists of single-, double-, and triple-occupancy student housing that can accommodate up to a total of 850 beds.	Under Construction
45	SDSU Master Plan Update	San Diego State University Campus	Increase of student headcount from 33,441 to 44,826 (25,000 Full Time Equivalent Students (FTE) to 35,000 FTE).	Court Approved and Vacated Writ on October 12

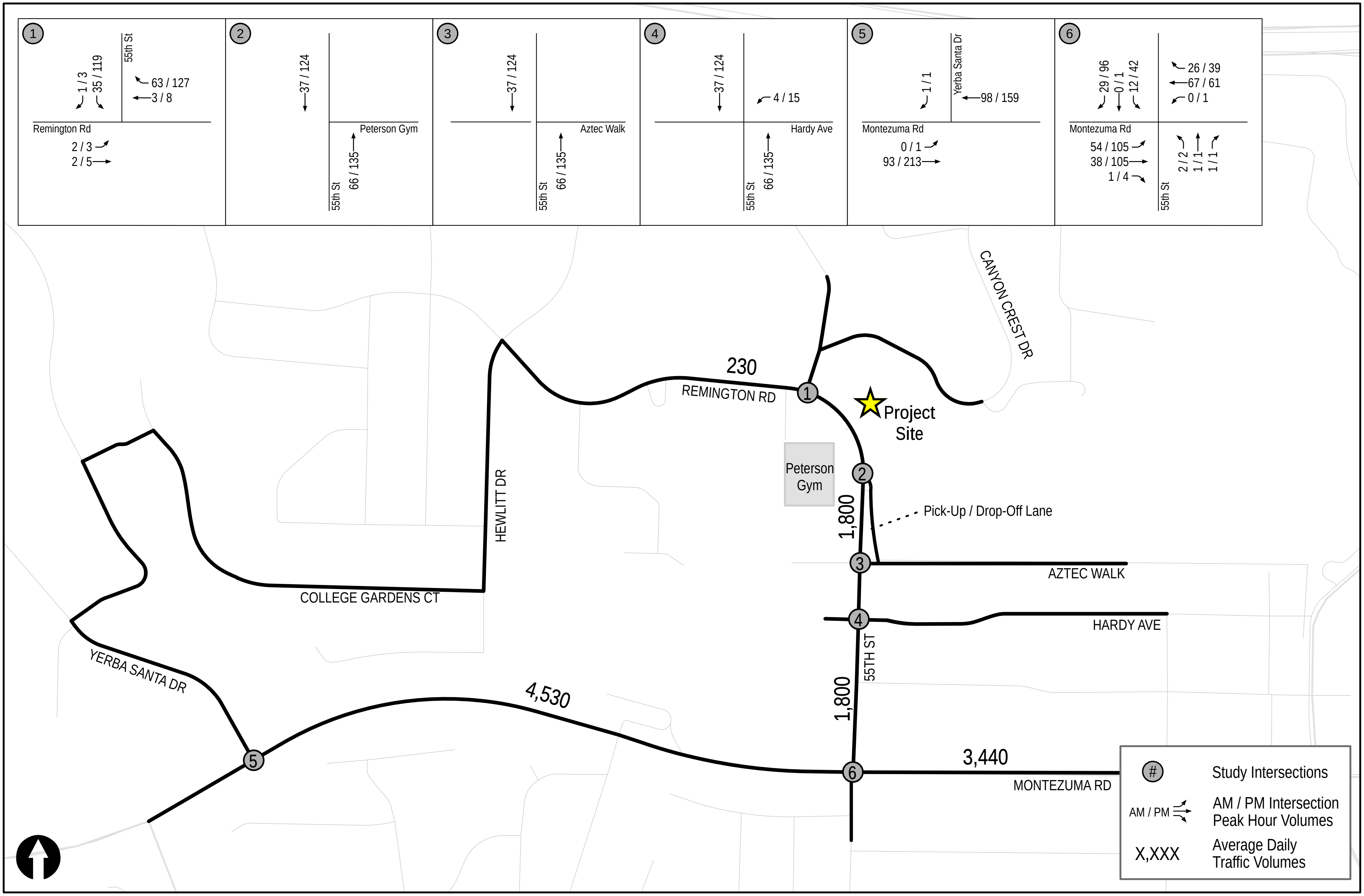

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Figure 7-1

Cumulative Projects Traffic Volumes

SDSU ARC EXPANSION

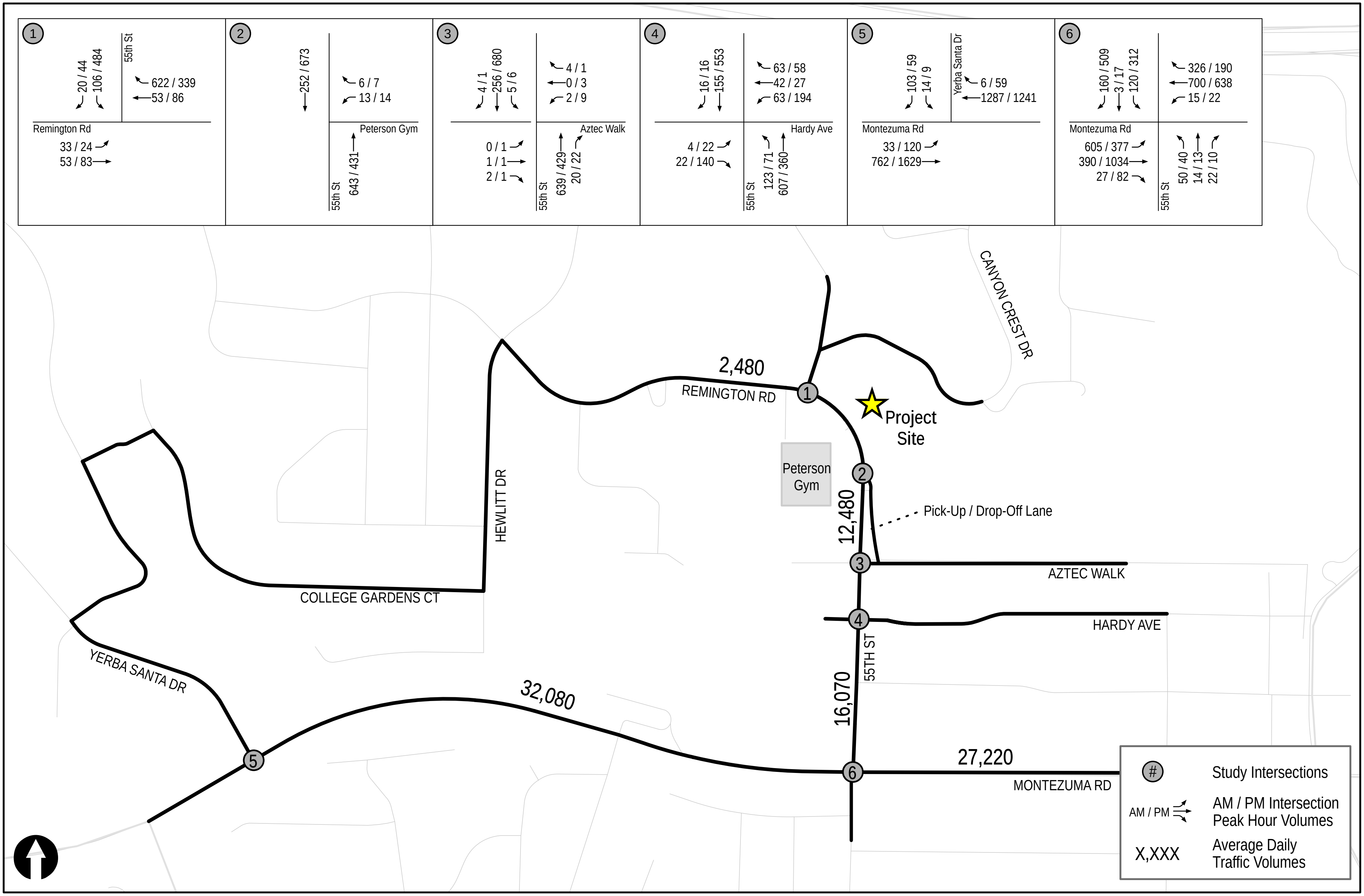

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Figure 7-2

Existing + Cumulative Projects Traffic Volumes

SDSU ARC EXPANSION

8.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

8.1 Trip Generation

To estimate the increase in vehicle trips that would be generated by the proposed ARC expansion, several calculations were conducted.

First, based on research conducted at similar facilities at other campuses (CSU San Luis Obispo and University of Arizona), it is anticipated that the proposed expansion would result in a 40% increase in patron use (total, both SDSU-related and general public) (see ***Appendix E***). To be conservative, a 50% increase was utilized in this traffic study.

Next, existing patron entry data for a typical month was obtained from the ARC staff (see ***Appendix F***). Based on the assumed 50% increase in patrons, the project would result in the following increase in average daily, AM peak hour, and PM peak hour patron volumes:

- Daily Increase = 1,975 patrons entering
- AM Peak Hour Increase = 90 patrons entering
- PM Peak Hour Increase = 155 patrons entering

As to the next step, a survey conducted at the ARC revealed that approximately 13.4% of patrons drove to the ARC and that the ARC was their only destination at SDSU. ***Appendix G*** contains the survey questions and survey results. To be conservative, 15% was utilized and applied to the anticipated increase in total patrons to determine the number of these increased patrons that would add traffic (i.e., utilize the transportation network) to travel to the ARC. The anticipated increase in patrons that would drive to the site expressed as a daily, AM, and PM peak hour increase is listed below:

- Daily Increase = 297 patrons driving to the site
- AM Peak Hour Increase = 14 patrons driving to the site
- PM Peak Hour Increase = 24 patrons driving to the site

Since the patron data provided by the ARC only provides entering data, the daily increase was multiplied by 2 to account for travel to and from the ARC to obtain the average daily traffic. The number of exiting patrons driving from the ARC during the peak hours were obtained using typical traffic relationships for this type of land use (i.e., the relationship between entering and exiting traffic is a 6 to 4 ratio). ***Appendix H*** shows the calculations. The anticipated increase in patrons that would drive to and from the site expressed as a daily, AM, and PM peak hour increase is listed below:

- Daily Increase in Vehicle Trips (To and From the ARC) = 594 trips
- AM Peak Hour Increase = 24 total trips (14 inbound trips & 10 outbound trips)
- PM Peak Hour Increase = 40 total trips (24 inbound trips inbound & 16 outbound trips)

In addition to patrons, additional vehicle trips would also be generated by an increase in employees. The additional employee trips were estimated based on facility information provided by the ARC.

However, it should be noted that the number of employee trips used for the analysis is considered conservative since most of the additional employees would be students that would have been on campus anyways. According to ARC staff, approximately 77% of current employees are students.

Table 8–1 tabulates the increase in project traffic generation attributable to the proposed Project. As shown in *Table 8–1*, the Project is calculated to generate approximately 604 ADT with 16 inbound / 12 outbound trips during the AM peak hour and 26 inbound / 18 outbound trips during the PM peak hour.

TABLE 8–1
PROJECT TRIP GENERATION

ARC Users	Daily Trip Ends (ADT)	AM Peak Hour				PM Peak Hour			
		In:Out Split[1]	Volume			In:Out Split[1]	Volume		
	Volume		In	Out	Total		In	Out	Total
Patrons	594	6 : 4	14	10	24	6 : 4	24	16	40
Employees	10	-	2	2	4	-	2	2	4
Total	**604**		**16**	**12**	**28**		**26**	**18**	**44**

Footnotes:
1. In and out relationship is obtained from the Health Club land use in SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002.

8.2 Trip Distribution/Assignment

The increase in traffic generated by the proposed Project was distributed on the surrounding roadways based on a SANDAG Computer Select Zone Assignment, the survey results discussed in *Section 8.1*, anticipated traffic patterns, and the Project's proximity to arterials and freeways. ***Figure 8–1*** shows the Project Traffic Distribution. ***Figure 8–2*** shows the Project Traffic Volumes. ***Figure 8–3*** shows the Existing + Project Traffic Volumes. ***Figure 8–4*** shows the Existing + Cumulative Project + Project Traffic Volumes.

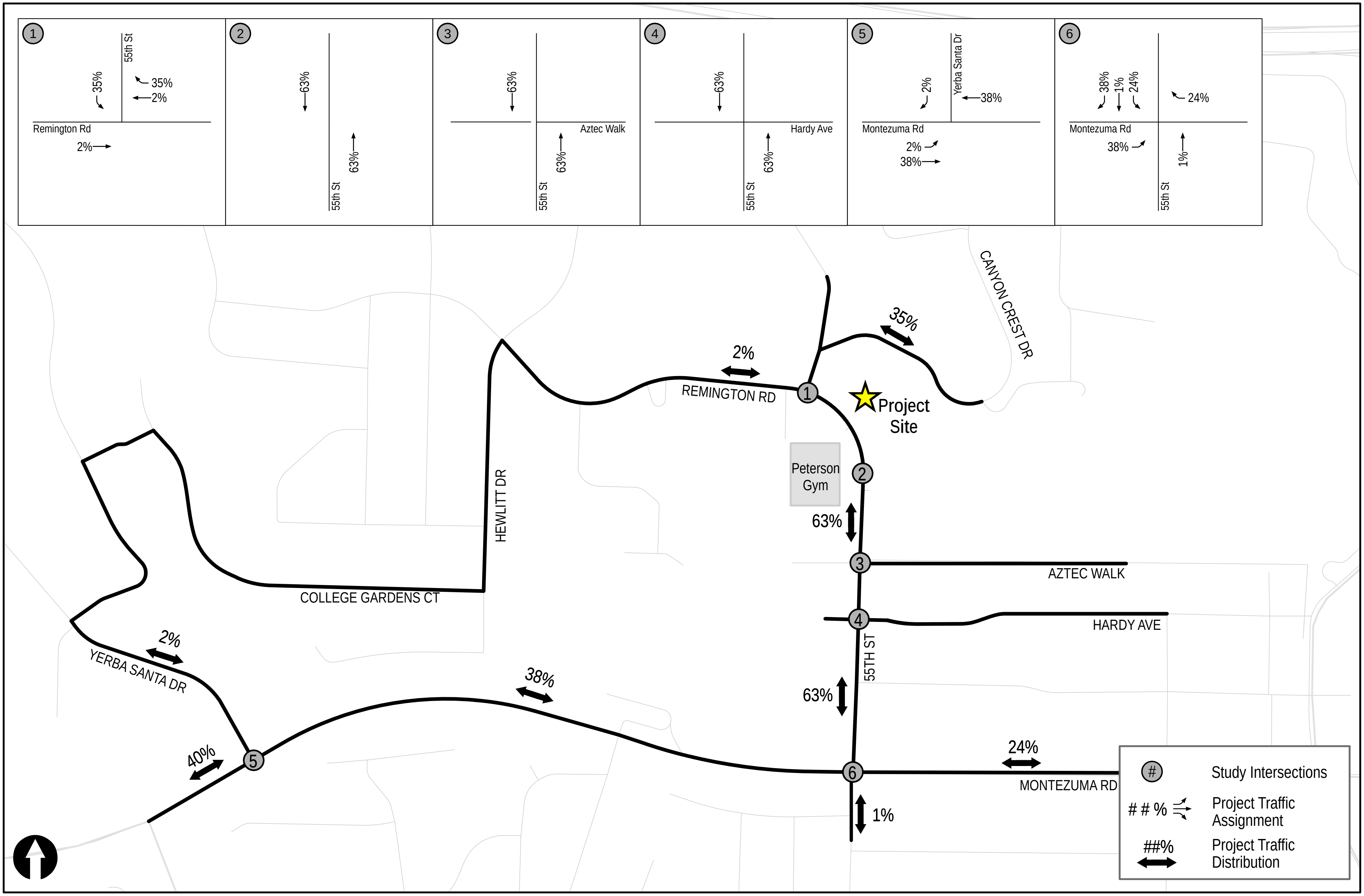

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Figure 8-1

Project Traffic Distribution

SDSU ARC EXPANSION

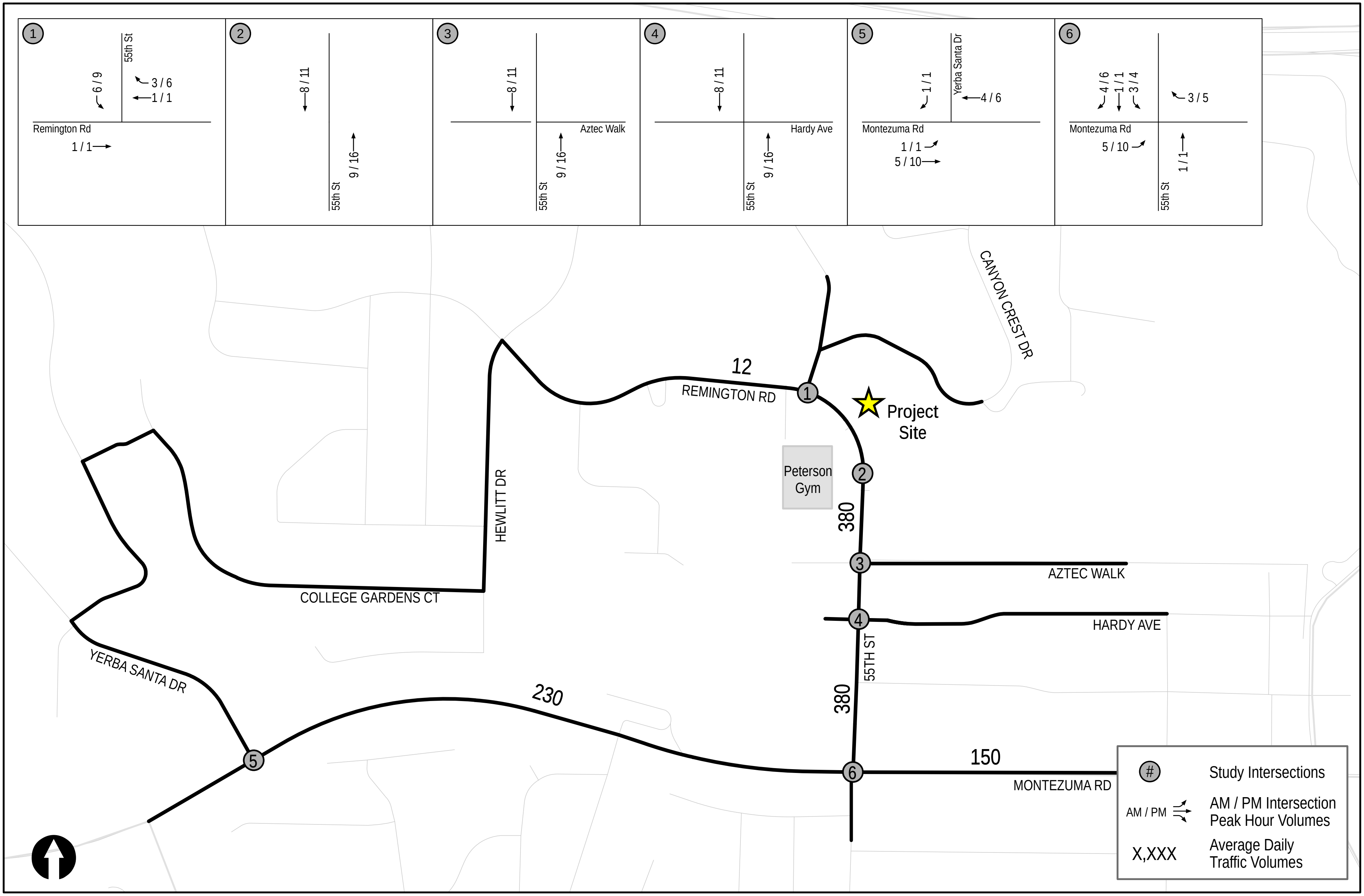

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Figure 8-2

Project Traffic Volumes

SDSU ARC EXPANSION

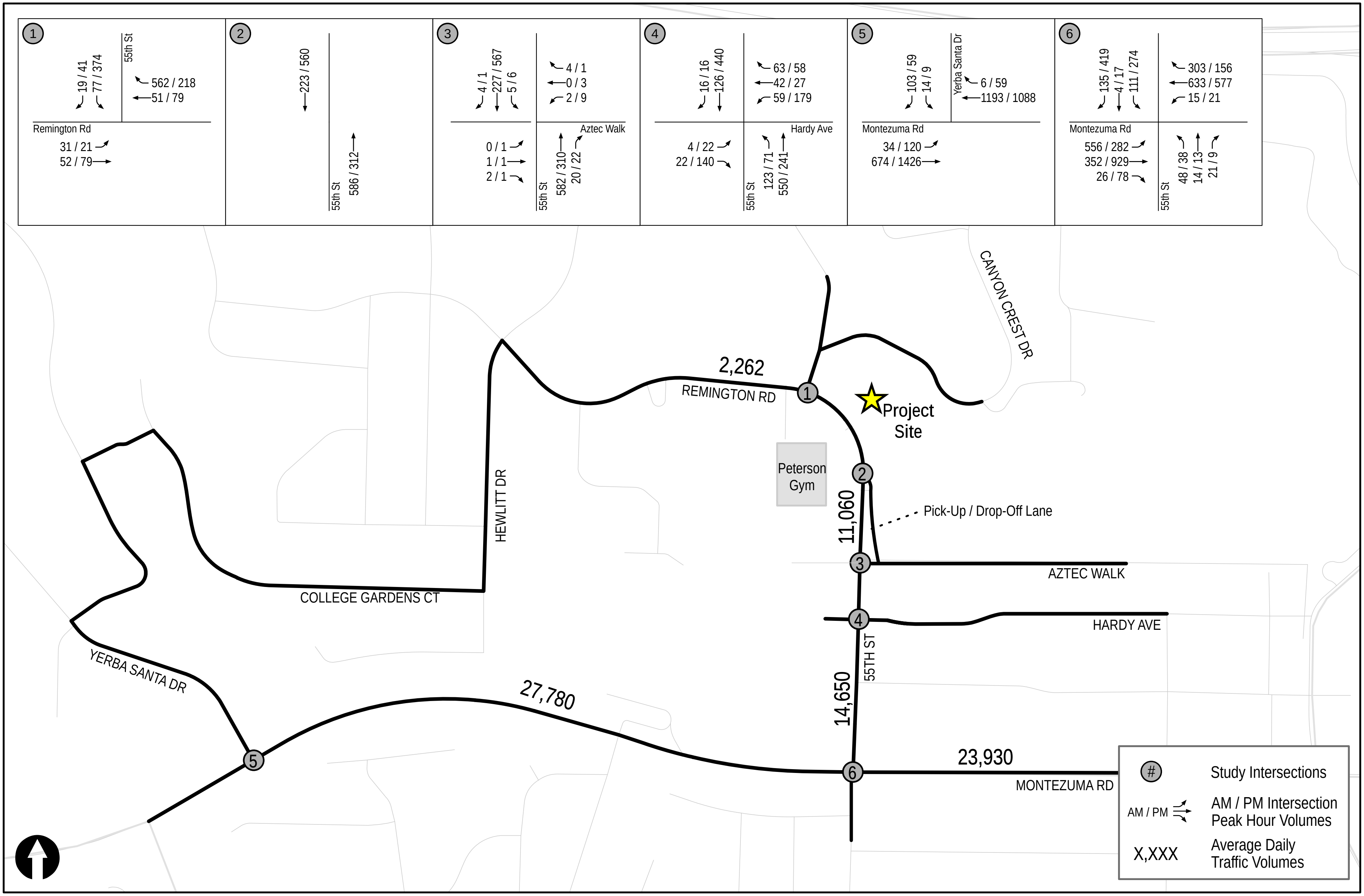

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Figure 8-3

Existing + Project Traffic Volumes

SDSU ARC EXPANSION

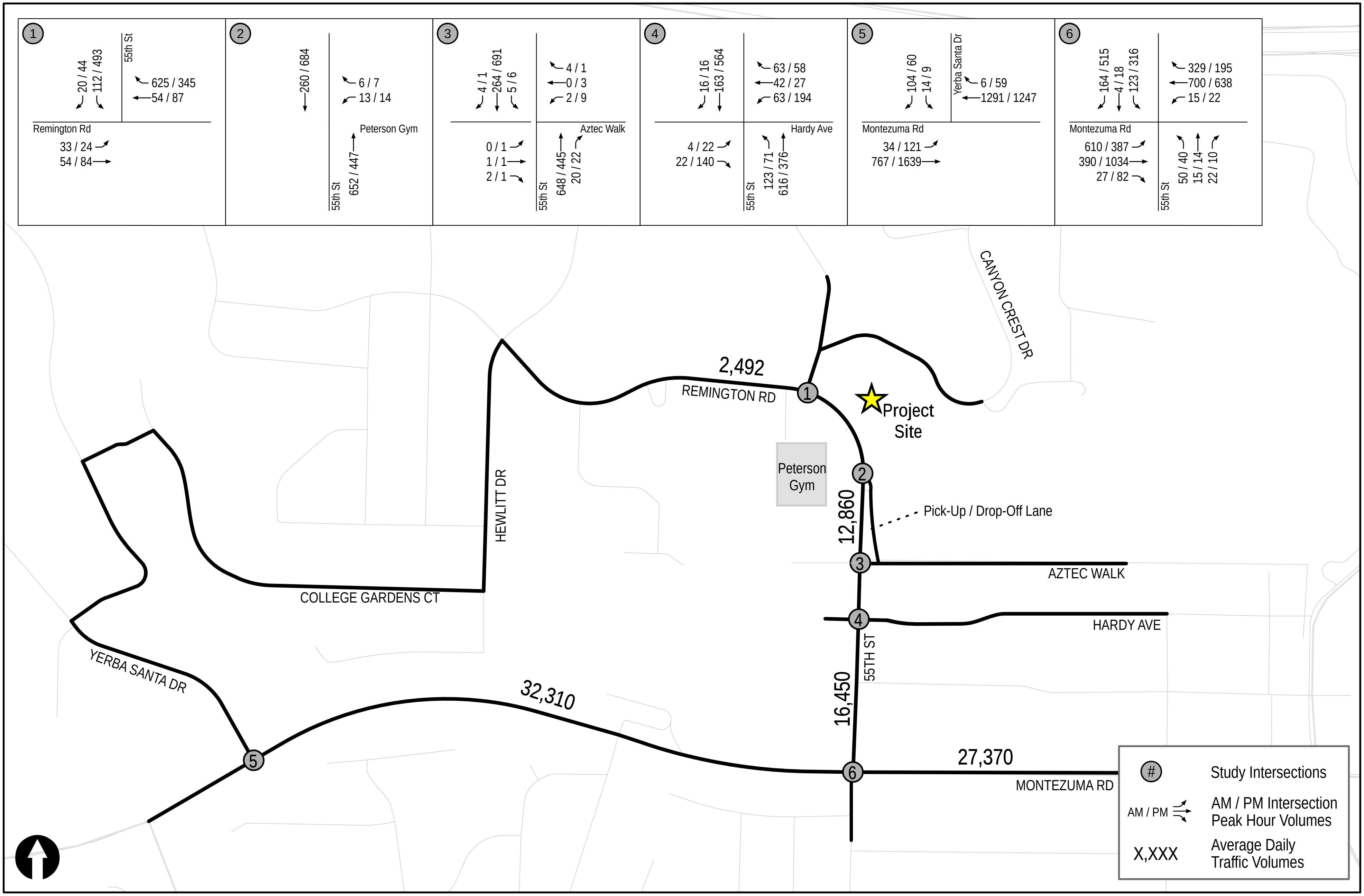

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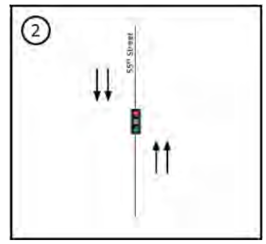
Figure 8-4

Existing + Cumulative Projects + Project Traffic Volumes

SDSU ARC EXPANSION

9.0 ANALYSIS OF PROJECT BUILDOUT SCENARIOS

For the purposes of this transportation study, the following network changes, which would be implemented as part of the project, were incorporated into the "plus Project" analysis scenarios:



55th Street / Peterson Gym Intersection:

- Remove the east leg of the intersection as a result of removing the drop-off/pick-up lane located to the west of the Viejas Arena.
- Retain the traffic signal to provide a controlled crossing for pedestrians crossing 55th Street.

9.1 Existing + Project

9.1.1 *Intersection Analysis*

Table 9–1 summarizes intersection operations throughout the study area under the Existing + Project scenario. As shown in *Table 9–1*, with the addition of Project traffic, all study intersections would operate at LOS D or better, except the following location:

- Montezuma Road / 55th Street (LOS E during the PM peak hour; note that this intersection also operates at LOS E without the proposed Project. Since the increase in delay due to the Project is less than the allowable of 2 seconds, there is no significant traffic impact)

Appendix I contains the Existing + Project intersection analysis worksheets.

9.1.2 *Segment Operations*

Table 9–2 summarizes segment operations throughout the study area under the Existing + Project scenario. As shown in *Table 9–2*, with the addition of project traffic, all study segments would operate at LOS D or better.

9.2 Existing + Cumulative Projects

9.2.1 *Intersection Analysis*

Table 9–1 summarizes intersection operations throughout the study area under the Existing + Cumulative Projects scenario. As shown in *Table 9–1*, all study intersections would operate at LOS C or better, except the following location:

- Montezuma Road / 55th Street (LOS F during the PM peak hour)

Appendix J contains the Existing + Cumulative Projects intersection analysis worksheets.

9.2.2 *Segment Operations*

Table 9–2 summarizes segment operations throughout the study area for the Existing + Cumulative Projects scenario. As shown in *Table 9–2*, all of the study area segments would operate at LOS D or better, except the following location:

- Montezuma Road, from 55th Street to College Avenue (LOS E)

9.3 Existing + Cumulative Projects + Project

9.3.1 *Intersection Analysis*

Table 9–1 summarizes intersection operations throughout the study area under the Existing + Cumulative Projects + Project scenario. As shown in *Table 9–1*, with the addition of project traffic, all study area intersections would operate at LOS C or better, except the following location:

- Montezuma Road / 55th Street (LOS F during the PM peak hour; note that this intersection also operates at LOS F without the proposed Project. Since the increase in delay due to the Project is less than the allowable of 1 second, there is no significant traffic impact.)

Appendix K contains the Existing + Cumulative Projects + Project intersection analysis worksheets.

9.3.2 *Segment Operations*

Table 9–2 summarizes segment operations throughout the study area under the Existing + Cumulative Projects + Project scenario. As shown in *Table 9–2*, with the addition of Project traffic, all study segments would operate at LOS D or better, except the following location:

- Montezuma Road, from 55th Street to College Avenue (LOS E; note that this segment also operates at LOS E without the proposed Project. Since the increase in the volume to capacity ratio due to the Project is less than the allowable of 0.02, there is no significant traffic impact)

TABLE 9–1
PROJECT BUILDOUT INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Δ[c]	Existing + Cumulative Projects		Existing + Cumulative Projects + Project		Δ
			Delay[a]	LOS[b]	Delay	LOS		Delay	LOS	Delay	LOS	
1. 55th Street / Remington Road	Signal	AM PM	7.8 12.2	A B	7.9 12.5	A B	0.1 0.3	8.3 12.4	A B	8.4 12.6	A B	0.1 0.2
2. 55th Street / Peterson Gym	Signal	AM PM	2.6 4.0	A A	2.1 3.7	A A	-0.5[d] -0.3[d]	2.9 4.0	A A	2.2 3.9	A A	-0.7[d] -0.1[d]
3. 55th Street / Aztec Walk	Signal	AM PM	3.5 2.1	A A	4.0 2.5	A A	0.5 0.4	4.0 2.3	A A	4.1 2.5	A A	0.1 0.2
4. 55th Street / Hardy Avenue	Signal	AM PM	27.1 24.8	C C	27.3 25.5	C C	0.2 0.7	29.1 25.7	C C	29.2 25.8	C C	0.1 0.1
5. Montezuma Road / Yerba Santa Drive	Signal	AM PM	10.3 10.1	B B	10.4 10.2	B B	0.1 0.1	10.3 10.4	B B	10.4 10.5	B B	0.1 0.1
6. Montezuma Road / 55th Street	Signal	AM PM	47.1 59.8	D E	47.7 60.5	D E	0.6 0.7	52.8 85.8	D F	53.8 86.5	D F	1.0 0.7

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Δ denotes an increase in delay due to project.
d. The delay decreased since the east leg of the intersection would be removed as part of the Project, therefore improving the average intersection delay.

SIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

TABLE 9–2
PROJECT BUILDOUT STREET SEGMENT OPERATIONS

Street Segment	Existing Capacity (LOS E)[a]	Existing			Existing + Project			Δ[e]	Existing + Cumulative Projects			Existing + Cumulative Projects + Project			Δ
		ADT[b]	LOS[c]	V/C[d]	ADT	LOS	V/C		ADT	LOS	V/C	ADT	LOS	V/C	
Remington Road															
West of 55th Street	10,000	2,250	A	0.225	2,262	A	0.226	0.001	2,480	A	0.248	2,492	A	0.249	0.001
55th Street															
Remington Road to Hardy Road	30,000	10,680	B	0.356	11,060	B	0.369	0.013	12,480	B	0.416	12,860	B	0.429	0.013
Hardy Road to Montezuma Road	30,000	14,270	C	0.476	14,650	C	0.488	0.013	16,070	C	0.536	16,450	C	0.548	0.013
Montezuma Road															
Collwood Boulevard to 55th Street	40,000	27,550	C	0.689	27,780	C	0.695	0.006	32,080	D	0.802	32,310	D	0.808	0.006
55th Street to College Avenue	30,000	23,780	D	0.793	23,930	D	0.798	0.005	27,220	E	0.907	27,370	E	0.912	0.005

Footnotes:
a. Capacities based on the City of San Diego Roadway Classification & LOS table.
b. Average Daily Traffic
c. Level of Service
d. Volume to Capacity ratio
e. Δ denotes a project-induced increase in the Volume to Capacity ratio

10.0 VMT ANALYSIS

10.1 VMT Background and Senate Bill SB 743

Vehicle Miles Traveled (VMT) is defined as a measurement of miles traveled by vehicles within a specified region for a specified time period and is a measure of network use or efficiency. There are multiple ways to express VMT, although generally VMT are calculated by multiplying all vehicle trips generated by a project times their associated trip lengths, or by multiplying traffic volumes on roadway links by the associated trip distance of each link. VMT is often estimated for a typical weekday.

On September 27, 2013, Governor Jerry Brown signed SB 743 into law, starting a process that is expected to change the way transportation impact analysis is conducted under CEQA. Within the State's CEQA Guidelines, these changes will include elimination of auto delay, LOS, and similar measurements of vehicular roadway capacity and traffic congestion as the basis for determining significant impacts. Thus, VMT will become the new metric against which significant impacts will be determined.

In January 2016, the State Office of Planning and Research (OPR) issued the *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA* (Draft Guidelines), which provided recommendations for updating the State's CEQA Guidelines in response to SB 743 and contained recommendations for VMT analysis methodology in an accompanying *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory). The Draft Guidelines, including the Technical Advisory, recommended use of automobile VMT per capita as the preferred CEQA transportation metric, along with the elimination of auto delay/LOS for CEQA purposes statewide. Various revisions have been made to these documents since their release, and the state Resources Agency is now preparing final revisions for final approval.

10.2 Implementation Timeline of SB 743

For land use projects, the Technical Advisory recommends that automobile VMT per capita be measured by land use type for specific trip purposes or tours depending on the type of forecasting model being used. Based on the Draft OPR Guidelines, lead agencies will have almost two years (until July 1, 2020) to implement the revised CEQA Guidelines upon their formal approval.

OPR's Technical Advisory contains recommendations for VMT methodology and significance thresholds, although the Draft Guidelines provide that the lead agency, in this case The Board of Trustees of the California State University, has discretion in this regard. As previously explained, the final implementation steps for the revised Guidelines have not yet been completed and, therefore, compliance with the OPR Draft Guidelines is not mandatory. Nevertheless, an SB 743 VMT analysis compliance review has been prepared for the Project.

10.3 Determination of Significance

The Draft Guidelines Technical Advisory includes recommendations for how to estimate and forecast VMT. For a project with multiple land uses, such as residential, commercial, etc., the automobile VMT associated with each land use should be quantified separately. Further, the automobile VMT from specific trip purposes or travel tours should be isolated.

The OPR Draft Guidelines include a recommended significance threshold:

> A development project that results in vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact if the project is not within 15% of the existing VMT/capita.

However, and relevant to the proposed Project, the Draft Guidelines also provide that development projects that are located within one-half (1/2) mile of either an existing major transit stop or a stop along an existing high quality transit corridor are deemed to be located in "Transit Priority Areas" (TPA's) and, therefore, may be presumed to cause a less than significant transportation impact. Similarly, development projects that decrease vehicle miles traveled in the project area compared to existing conditions may be considered to have a less than significant transportation impact.

10.4 Project VMT

As previously noted, the site of the proposed Project is located within one-half (1/2) mile of the existing SDSU Transit Center, including the MTS trolley station and bus center. Therefore, based on OPR's proposed Guidelines, the proposed Project is presumed to have a less than significant transportation-related impact relative to VMT based on the Project's proximity to transit. Moreover, to the extent the proposed project would provide improved fitness facilities right on campus thereby alleviating the need for the SDSU community to utilize health fitness facilities located off-campus, the proposed project would result in a decrease in VMT in the project area compared to existing conditions and, as a result, the project is further presumed to have a less than significant VMT-related transportation impact.

11.0 CONSTRUCTION IMPACTS ANALYSIS

Construction of the proposed Project would take a total of approximately 16 months and consist of the following phases:

Phase	Estimated Duration
Demolition	27 days
Site Preparation	2 days
Grading	4 days
Building Construction	13 months
Paving	10 days
Architectural Coatings	10 days

Thus, any impacts associated with project construction would be temporary in nature. Additionally, construction of the project would be conducted in a balanced cut/fill operation; therefore the temporary construction-related traffic would consist primarily of materials delivery, demolition waste haul and worker commute trips.

To address the potential impacts associated with construction, as part of the project, SDSU, in coordination with the construction manager, will implement a traffic control plan (TCP). The primary function of the TCP will be to provide for the safe and effective movement of road users through or around temporary traffic control zones during construction. The TCP would institute construction traffic management controls in accordance with the City of San Diego City Engineer standards and the *California Manual of Uniform Traffic Control Devices* (2014 edition). Traffic management controls would include measures determined on the basis of site-specific conditions, and would include the use of construction signs, delineators, and lane closures. The TCP would limit the number of peak hour construction worker, delivery, and demo waste haul trips, recommend that all trucks use the 55th Street to Montezuma Road route when accessing the project site, require workers to park in remote parking lots, and address the placement of signage, striping, traffic personnel, and road cones, as applicable, such that the amount of construction-related trips generated during the AM and PM peak commute hours would not result in significant traffic impacts based on City of San Diego and California State University standards.

With preparation and implementation of a TCP as part of the project, no significant construction-related traffic impacts would occur.

12.0 ACCESS ANALYSIS

12.1 Drop-Off/Pick-Up

Access to the Project's parking area is currently provided via a driveway off 55th Street just east of the 55th Street / Remington Road intersection. Vehicular access would remain in the current location.

As shown on the Conceptual Site Plan (See *Figure 2–1*), the proposed Project would remove the existing one-way drop-off/pick-up lane located to the west of the Viejas Arena and provide two turnouts along the east side of 55th Street. The turnout to the north has an approximate vehicle stacking capacity of 40 feet and the turnout to the south has an approximate vehicle stacking capacity of 150 feet.

The new drop-off/pick-up area would keep traffic flow on 55th Street unimpeded and the total vehicle stacking capacity is the same as the existing drop-off/pick-up lane. Therefore, no significant impacts would occur.

12.2 Emergency Access

With respect to emergency response times, the proposed Project would increase vehicle traffic nominally in the vicinity of SDSU and could affect emergency response times. However, it is not expected that the increased traffic would result in significant impacts in the form of increased emergency response times. This conclusion is based on two reasons.

First, emergency response vehicles have the right-of-way and are exempted from rules of the road in emergency situations. Specifically, upon the approach of an emergency vehicle that is sounding a siren, the surrounding traffic must yield the right-of-way and immediately drive to the right-hand edge or curb of the highway, clear of any intersection, and stop until the emergency vehicle has passed (Vehicle Code §21806). If required, drivers of emergency vehicles are trained to utilize center turn lanes, or travel in opposing through lanes to pass through crowded intersections. Additionally, when driven in response to an emergency call, and if the driver sounds a siren, emergency vehicles are exempted from the general rules of the road, such as right of way and speed limits (Vehicle Code §21055; San Diego Municipal Code §81.06). In addition, the 4-lane roadway configuration of 55th Street is such that there is adequate right-of-way for emergency vehicles to maneuver around traffic, even under congested conditions.

13.0 PEDESTRIAN/BICYCLE/TRANSIT ANALYSIS

13.1 Pedestrian Circulation

As shown on the Conceptual Site Plan (see *Figure 2–1),* the Project expansion would be to the south. Therefore, the existing pedestrian corridor in the east-west direction north of the Viejas Arena would be rerouted around the proposed Project. Although the east leg of the 55th Street / Peterson Gym intersection would be removed as discussed in *Section 11*, the traffic signal would remain to provide a controlled crossing for pedestrians crossing 55th Street. The Project also would provide an additional crosswalk on the north leg of the 55th Street / Aztec Walk intersection to improve pedestrian circulation in the area. Excellent pedestrian access is provided to this area of the campus.

13.2 Bicyclist Circulation

Bike lanes are currently provided along 55th Street between Montezuma Road and Remington Road. The Project would provide a bike path along Aztec Walk to improve bicycle circulation in the area.

13.3 Transit

As detailed in *Section 8.0*, the proposed project would generate a relatively small number of additional vehicle trips, especially during the peak AM and PM peak hours, because most ARC patrons are already on campus for educational or social reasons and, therefore, will not need to travel to use the facility. Moreover, specific to transit, based on typical mode splits (i.e., the percentage of travelers using vehicles as compared to transit), the proposed project is anticipated to generate a very small number of transit passengers during the critical AM/PM peak travel periods, when transit is most heavily utilized. Thus, it is expected that no significant impacts would occur to transit since very few ARC patrons are anticipated to use transit services to reach the site.

14.0 SIGNIFICANCE OF IMPACTS AND MITIGATION MEASURES

Based on the established City of San Diego and CSU significance criteria, the proposed Project would not result in significant traffic impacts at the study area intersections and segments. Additionally, the proposed project would not result in significant impacts relative to construction traffic, VMT, pedestrians and bicyclists, transit, or emergency access. Therefore, mitigation measures are not necessary.

LINSCOTT LAW & GREENSPAN engineers

TECHNICAL APPENDICES
SDSU AZTEC RECREATION CENTER EXPANSION

San Diego, California

November 8, 2018

LLG Ref. 3-18-2969

Linscott, Law & Greenspan, Engineers
4542 Ruffner Street
Suite 100
San Diego, CA 92111
858.300.8800 T
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www.llgengineers.com

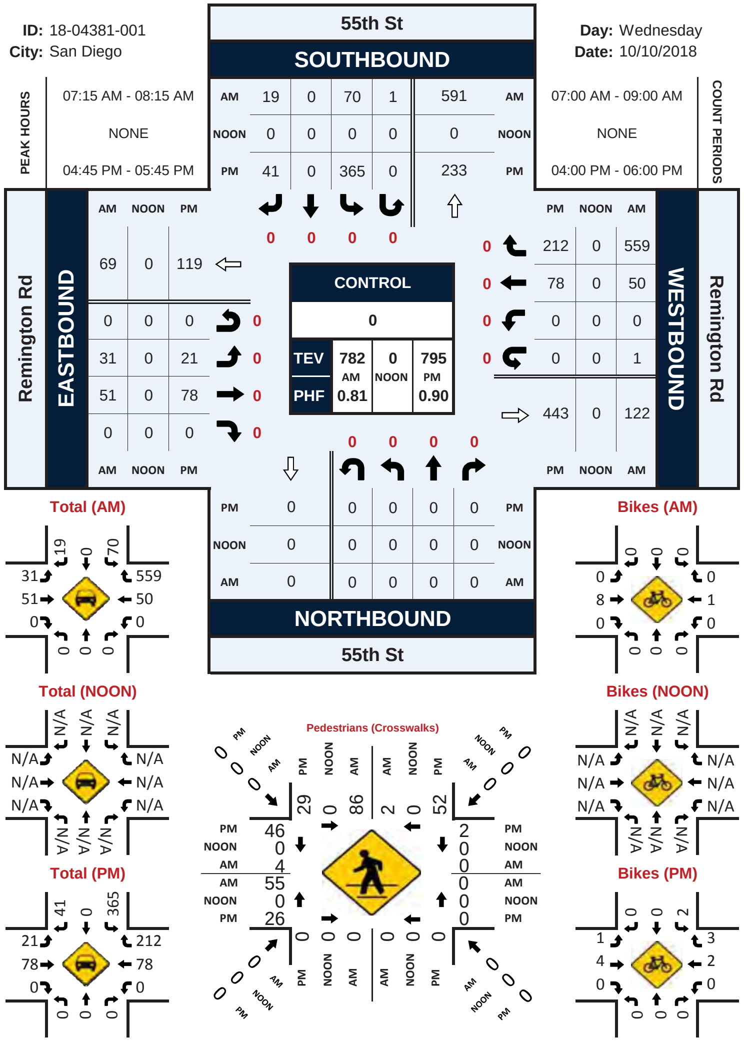
APPENDIX A

INTERSECTION AND SEGMENTS COUNTS

Prepared by National Data & Surveying Services

55th St & Remington Rd

Peak Hour Turning Movement Count



National Data & Surveying Services

Intersection Turning Movement Count

Location: 55th St & Remington Rd
City: San Diego
Control:

Project ID: 18-04381-001
Date: 10/10/2018

Total

NS/EW Streets:	55th St				55th St				Remington Rd				Remington Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	4	0	1	0	8	8	0	0	0	7	53	0	81
7:15 AM	0	0	0	0	15	0	5	0	6	11	0	0	0	14	133	0	184
7:30 AM	0	0	0	0	15	0	2	1	8	16	0	0	0	14	167	0	223
7:45 AM	0	0	0	0	23	0	8	0	11	15	0	0	0	16	166	1	240
8:00 AM	0	0	0	0	17	0	4	0	6	9	0	0	0	6	93	0	135
8:15 AM	0	0	0	0	26	0	8	0	10	16	0	0	0	20	85	0	165
8:30 AM	0	0	0	0	19	0	4	0	11	21	0	0	0	13	67	0	135
8:45 AM	0	0	0	0	34	0	7	0	9	16	0	0	0	11	83	0	160
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	153	0	39	1	69	112	0	0	0	101	847	1	1323
APPROACH %'s :					79.27%	0.00%	20.21%	0.52%	38.12%	61.88%	0.00%	0.00%	0.00%	10.64%	89.25%	0.11%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	0	0	70	0	19	1	31	51	0	0	0	50	559	1	782
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.761	0.000	0.594	0.250	0.705	0.797	0.000	0.000	0.000	0.781	0.837	0.250	0.815
					0.726				0.788				0.833				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	49	0	6	0	5	15	0	0	0	21	44	0	140
4:15 PM	0	0	0	0	59	0	10	0	4	24	0	0	0	25	40	0	162
4:30 PM	0	0	0	0	68	0	12	0	5	21	0	0	0	13	55	0	174
4:45 PM	0	0	0	0	87	0	13	0	4	15	0	0	0	23	45	0	187
5:00 PM	0	0	0	0	89	0	13	0	6	26	0	0	0	18	46	0	198
5:15 PM	0	0	0	0	93	0	7	0	6	20	0	0	0	22	73	0	221
5:30 PM	0	0	0	0	96	0	8	0	5	17	0	0	0	15	48	0	189
5:45 PM	0	0	0	0	71	0	6	0	9	16	0	0	0	21	35	0	158
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	612	0	75	0	44	154	0	0	0	158	386	0	1429
APPROACH %'s :					89.08%	0.00%	10.92%	0.00%	22.22%	77.78%	0.00%	0.00%	0.00%	29.04%	70.96%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	365	0	41	0	21	78	0	0	0	78	212	0	795
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.951	0.000	0.788	0.000	0.875	0.750	0.000	0.000	0.000	0.848	0.726	0.000	0.899
					0.976				0.773				0.763				

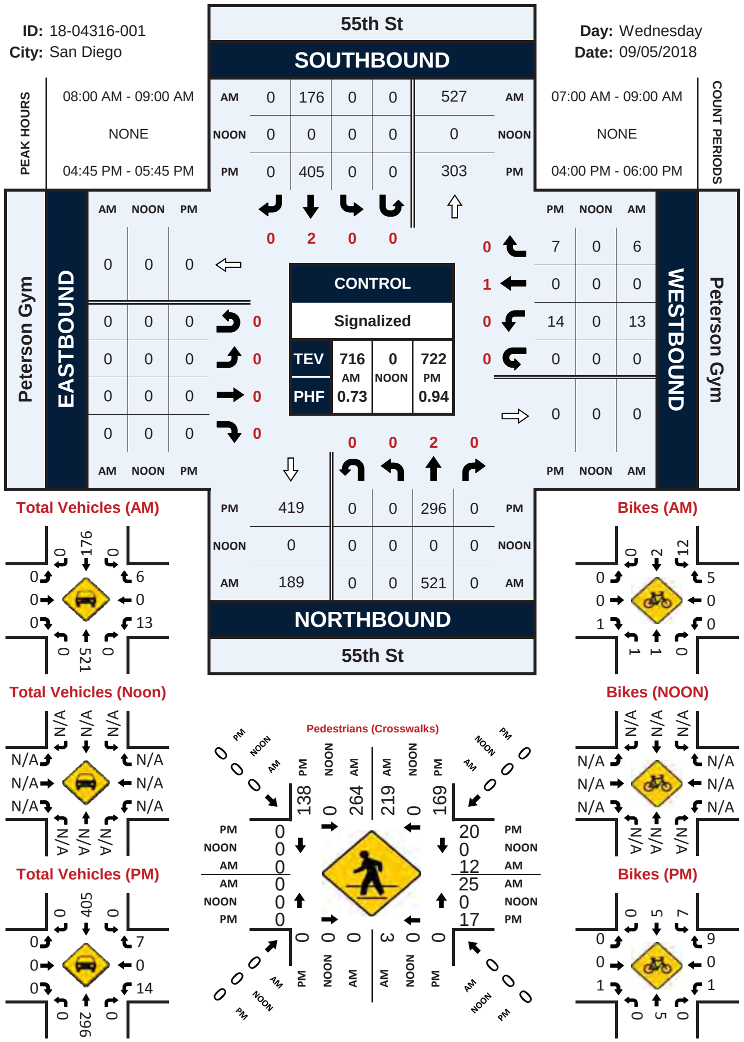
Prepared by National Data & Surveying Services

55th St & Peterson Gym

Peak Hour Turning Movement Count

ID: 18-04316-001
City: San Diego

Day: Wednesday
Date: 09/05/2018



National Data & Surveying Services

Intersection Turning Movement Count

Location: 55th St & Peterson Gym
City: San Diego
Control: Signalized

Project ID: 18-04316-001
Date: 9/5/2018

Total

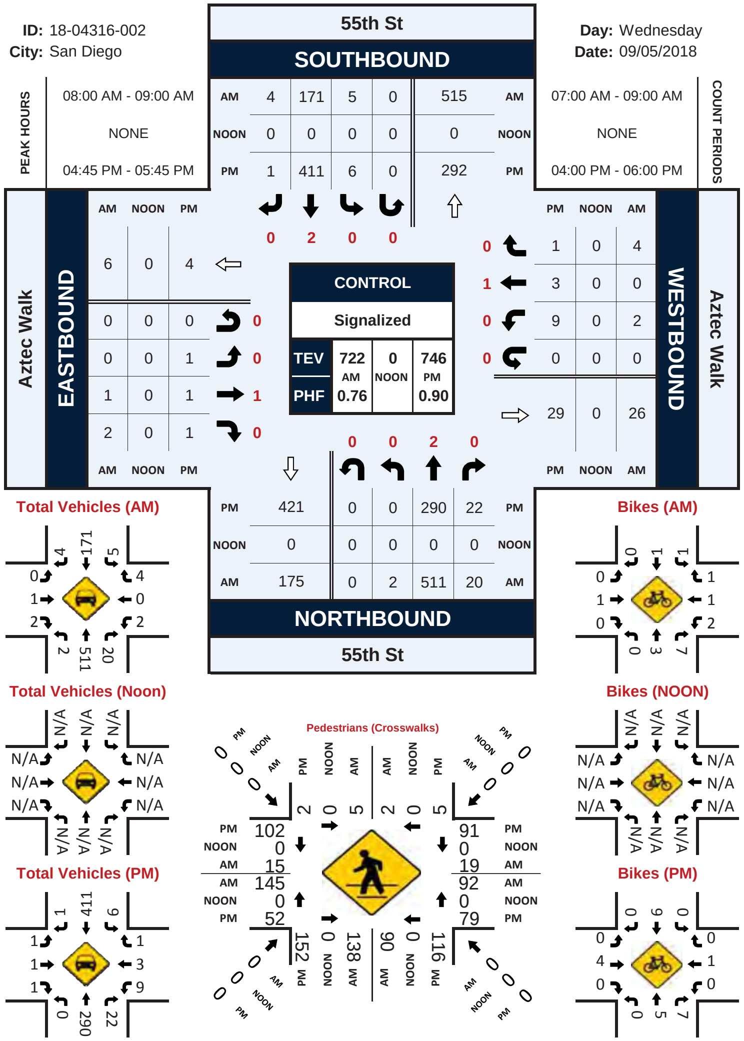
NS/EW Streets:	55th St				55th St				Peterson Gym				Peterson Gym				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	2	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	59	0	0	0	29	0	0	0	0	0	0	1	0	3	0	92
7:15 AM	0	83	0	0	0	32	0	0	0	0	0	0	1	0	2	0	118
7:30 AM	0	93	0	0	0	50	0	0	0	0	0	0	2	0	2	0	147
7:45 AM	0	143	0	0	0	30	0	0	0	0	0	0	4	0	3	0	180
8:00 AM	0	93	0	0	0	33	0	0	0	0	0	0	3	0	1	0	130
8:15 AM	0	109	0	0	0	38	0	0	0	0	0	0	5	0	0	0	152
8:30 AM	0	143	0	0	0	43	0	0	0	0	0	0	1	0	1	0	188
8:45 AM	0	176	0	0	0	62	0	0	0	0	0	0	4	0	4	0	246
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	899	0	0	0	317	0	0	0	0	0	0	21	0	16	0	1253
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					56.76%	0.00%	43.24%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	521	0	0	0	176	0	0	0	0	0	0	13	0	6	0	716
PEAK HR FACTOR :	0.000	0.740	0.000	0.000	0.000	0.710	0.000	0.000	0.000	0.000	0.000	0.000	0.650	0.000	0.375	0.000	0.728
	0.740				0.710								0.594				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	2	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	72	0	0	0	89	0	0	0	0	0	0	4	0	0	0	165
4:15 PM	0	61	0	0	0	68	0	0	0	0	0	0	4	0	4	0	137
4:30 PM	0	76	0	0	0	70	0	0	0	0	0	0	6	0	2	0	154
4:45 PM	0	74	0	0	0	97	0	0	0	0	0	0	4	0	1	0	176
5:00 PM	0	74	0	0	0	115	0	0	0	0	0	0	3	0	1	0	193
5:15 PM	0	84	0	0	0	85	0	0	0	0	0	0	3	0	0	0	172
5:30 PM	0	64	0	0	0	108	0	0	0	0	0	0	4	0	5	0	181
5:45 PM	0	62	0	0	0	83	0	0	0	0	0	0	6	0	3	0	154
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	567	0	0	0	715	0	0	0	0	0	0	34	0	16	0	1332
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					68.00%	0.00%	32.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	296	0	0	0	405	0	0	0	0	0	0	14	0	7	0	722
PEAK HR FACTOR :	0.000	0.881	0.000	0.000	0.000	0.880	0.000	0.000	0.000	0.000	0.000	0.000	0.875	0.000	0.350	0.000	0.935
	0.881				0.880								0.583				

Prepared by National Data & Surveying Services

55th St & Aztec Walk

Peak Hour Turning Movement Count



National Data & Surveying Services

Intersection Turning Movement Count

Location: 55th St & Aztec Walk
City: San Diego
Control: Signalized

Project ID: 18-04316-002
Date: 9/5/2018

Total

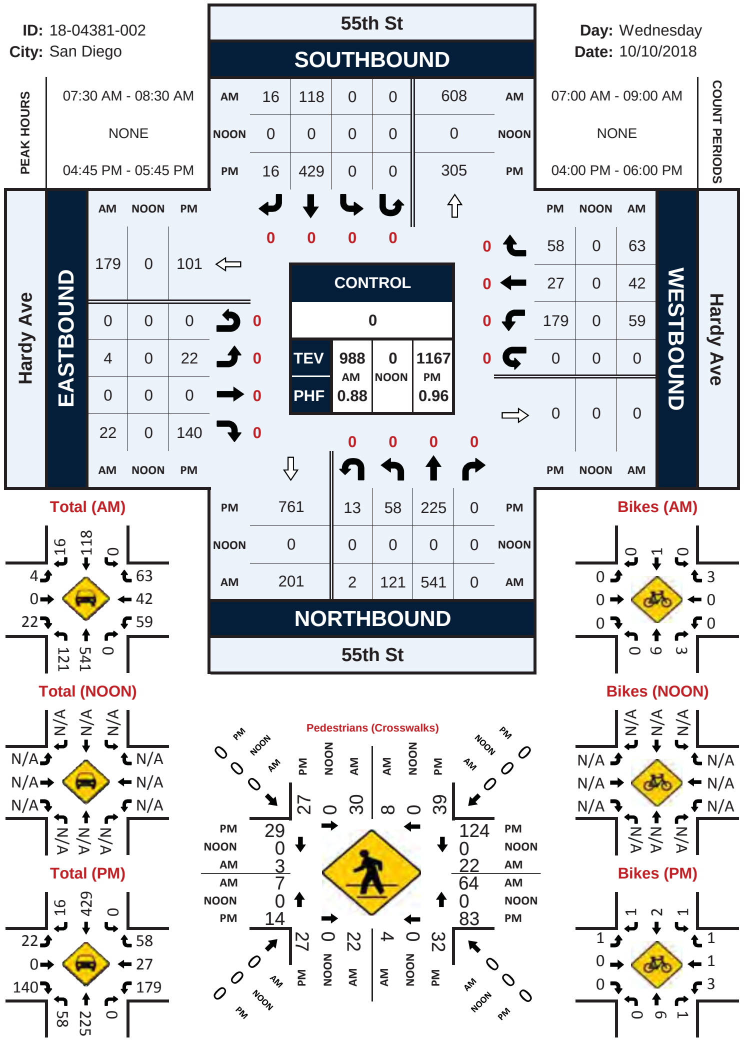
NS/EW Streets:	55th St				55th St				Aztec Walk				Aztec Walk				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	3	56	1	0	3	28	0	0	4	3	2	0	0	1	0	0	101
7:15 AM	0	76	2	0	3	31	0	0	1	0	0	0	0	1	0	0	114
7:30 AM	0	97	4	0	2	49	1	0	0	0	0	0	0	0	1	0	154
7:45 AM	2	142	7	0	1	35	1	0	2	0	1	0	0	1	1	0	193
8:00 AM	0	89	5	0	1	32	1	0	0	0	0	0	0	0	2	0	130
8:15 AM	2	109	4	0	1	45	1	0	0	0	1	0	0	0	1	0	164
8:30 AM	0	145	2	0	1	42	0	0	0	1	0	0	1	0	0	0	192
8:45 AM	0	168	9	0	2	52	2	0	0	0	1	0	1	0	1	0	236
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	7	882	34	0	14	314	6	0	7	4	5	0	2	3	6	0	1284
APPROACH %'s :	0.76%	95.56%	3.68%	0.00%	4.19%	94.01%	1.80%	0.00%	43.75%	25.00%	31.25%	0.00%	18.18%	27.27%	54.55%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	2	511	20	0	5	171	4	0	0	1	2	0	2	0	4	0	722
PEAK HR FACTOR :	0.250	0.760	0.556	0.000	0.625	0.822	0.500	0.000	0.000	0.250	0.500	0.000	0.500	0.000	0.500	0.000	0.765
	0.753				0.804				0.750				0.750				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	76	8	0	1	97	0	0	1	2	0	0	0	1	0	0	187
4:15 PM	1	56	9	0	1	68	0	0	0	1	0	0	1	1	2	0	140
4:30 PM	0	76	7	0	2	73	0	0	0	2	0	0	0	1	1	0	162
4:45 PM	0	69	9	0	1	98	1	0	0	0	0	0	5	2	0	0	185
5:00 PM	0	78	4	0	2	117	0	0	1	1	1	0	3	1	0	0	208
5:15 PM	0	83	6	0	0	90	0	0	0	0	0	0	1	0	0	0	180
5:30 PM	0	60	3	0	3	106	0	0	0	0	0	0	0	0	1	0	173
5:45 PM	0	64	9	0	2	90	0	0	0	0	0	0	0	1	1	0	167
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	562	55	0	12	739	1	0	2	6	1	0	10	7	5	0	1402
APPROACH %'s :	0.32%	90.79%	8.89%	0.00%	1.60%	98.27%	0.13%	0.00%	22.22%	66.67%	11.11%	0.00%	45.45%	31.82%	22.73%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	290	22	0	6	411	1	0	1	1	1	0	9	3	1	0	746
PEAK HR FACTOR :	0.000	0.873	0.611	0.000	0.500	0.878	0.250	0.000	0.250	0.250	0.250	0.000	0.450	0.375	0.250	0.000	0.897
	0.876				0.878				0.250				0.464				

Prepared by National Data & Surveying Services

55th St & Hardy Ave

Peak Hour Turning Movement Count



National Data & Surveying Services

Intersection Turning Movement Count

Location: 55th St & Hardy Ave
City: San Diego
Control:

Project ID: 18-04381-002
Date: 10/10/2018

Total

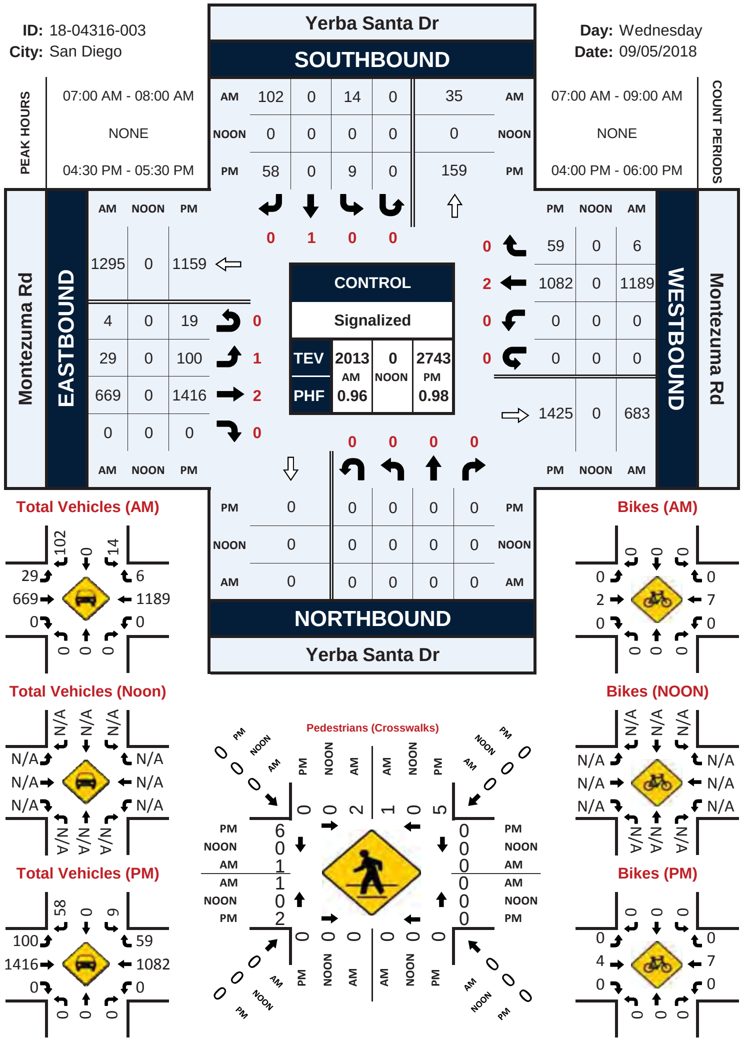
NS/EW Streets:	55th St				55th St				Hardy Ave				Hardy Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	15	46	0	1	0	26	2	0	8	0	32	0	6	6	7	0	149
7:15 AM	17	73	0	3	0	17	2	0	3	0	11	0	10	4	14	0	154
7:30 AM	24	177	0	0	0	33	3	0	1	0	7	0	9	6	18	0	278
7:45 AM	35	157	0	1	0	27	6	0	1	0	5	0	20	15	14	0	281
8:00 AM	34	123	0	0	0	33	3	0	1	0	6	0	16	10	14	0	240
8:15 AM	28	84	0	1	0	25	4	0	1	0	4	0	14	11	17	0	189
8:30 AM	31	94	0	0	0	43	10	0	1	0	2	0	13	6	18	0	218
8:45 AM	34	66	0	0	0	28	12	0	0	0	3	0	15	14	15	0	187
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	218	820	0	6	0	232	42	0	16	0	70	0	103	72	117	0	1696
APPROACH %'s :	20.88%	78.54%	0.00%	0.57%	0.00%	84.67%	15.33%	0.00%	18.60%	0.00%	81.40%	0.00%	35.27%	24.66%	40.07%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	121	541	0	2	0	118	16	0	4	0	22	0	59	42	63	0	988
PEAK HR FACTOR :	0.864	0.764	0.000	0.500	0.000	0.894	0.667	0.000	1.000	0.000	0.786	0.000	0.738	0.700	0.875	0.000	0.879
	0.826				0.931				0.813				0.837				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	17	69	0	2	0	74	2	0	1	0	21	0	41	4	11	0	242
4:15 PM	8	60	0	3	0	80	3	0	1	0	25	0	29	5	21	0	235
4:30 PM	15	49	0	0	0	82	3	0	5	0	16	0	35	5	12	0	222
4:45 PM	11	48	0	4	0	87	7	0	4	0	41	0	56	11	18	0	287
5:00 PM	14	44	0	2	0	114	5	0	9	0	36	0	37	9	10	0	280
5:15 PM	21	73	0	4	0	101	2	0	0	0	35	0	50	3	15	0	304
5:30 PM	12	60	0	3	0	127	2	0	9	0	28	0	36	4	15	0	296
5:45 PM	11	49	0	3	0	105	5	0	5	0	26	0	21	3	9	0	237
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	109	452	0	21	0	770	29	0	34	0	228	0	305	44	111	0	2103
APPROACH %'s :	18.73%	77.66%	0.00%	3.61%	0.00%	96.37%	3.63%	0.00%	12.98%	0.00%	87.02%	0.00%	66.30%	9.57%	24.13%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	58	225	0	13	0	429	16	0	22	0	140	0	179	27	58	0	1167
PEAK HR FACTOR :	0.690	0.771	0.000	0.813	0.000	0.844	0.571	0.000	0.611	0.000	0.854	0.000	0.799	0.614	0.806	0.000	0.960
	0.755				0.862				0.900				0.776				

Prepared by National Data & Surveying Services

Yerba Santa Dr & Montezuma Rd

Peak Hour Turning Movement Count



National Data & Surveying Services

Intersection Turning Movement Count

Location: Yerba Santa Dr & Montezuma Rd
City: San Diego
Control: Signalized

Project ID: 18-04316-003
Date: 9/5/2018

Total

NS/EW Streets:	Yerba Santa Dr				Yerba Santa Dr				Montezuma Rd				Montezuma Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	1	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	3	0	19	0	9	130	0	2	0	334	1	0	498
7:15 AM	0	0	0	0	4	0	30	0	5	167	0	1	0	312	1	0	520
7:30 AM	0	0	0	0	1	0	30	0	13	189	0	0	0	289	3	0	525
7:45 AM	0	0	0	0	6	0	23	0	2	183	0	1	0	254	1	0	470
8:00 AM	0	0	0	0	3	0	23	0	20	191	0	1	0	238	2	0	478
8:15 AM	0	0	0	0	1	0	14	0	15	242	0	2	0	201	8	0	483
8:30 AM	0	0	0	0	3	0	26	0	16	267	0	1	0	256	2	0	571
8:45 AM	0	0	0	0	1	0	19	0	6	141	0	1	0	267	4	0	439
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	22	0	184	0	86	1510	0	9	0	2151	22	0	3984
APPROACH %'s :					10.68%	0.00%	89.32%	0.00%	5.36%	94.08%	0.00%	0.56%	0.00%	98.99%	1.01%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	14	0	102	0	29	669	0	4	0	1189	6	0	2013
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.583	0.000	0.850	0.000	0.558	0.885	0.000	0.500	0.000	0.890	0.500	0.000	0.959
					0.853				0.869				0.892				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	1	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	3	0	17	0	24	309	0	3	0	261	7	0	624
4:15 PM	0	0	0	0	3	0	20	0	23	323	0	4	0	259	3	0	635
4:30 PM	0	0	0	0	2	0	17	0	18	374	0	2	0	263	12	0	688
4:45 PM	0	0	0	0	0	0	8	0	29	341	0	5	0	263	16	0	662
5:00 PM	0	0	0	0	4	0	19	0	23	357	0	4	0	263	20	0	690
5:15 PM	0	0	0	0	3	0	14	0	30	344	0	8	0	293	11	0	703
5:30 PM	0	0	0	0	5	0	15	0	14	338	0	2	0	252	2	0	628
5:45 PM	0	0	0	0	4	0	11	0	21	319	0	4	0	211	5	0	575
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	24	0	121	0	182	2705	0	32	0	2065	76	0	5205
APPROACH %'s :					16.55%	0.00%	83.45%	0.00%	6.24%	92.67%	0.00%	1.10%	0.00%	96.45%	3.55%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	9	0	58	0	100	1416	0	19	0	1082	59	0	2743
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.563	0.000	0.763	0.000	0.833	0.947	0.000	0.594	0.000	0.923	0.738	0.000	0.975
					0.728				0.974				0.938				

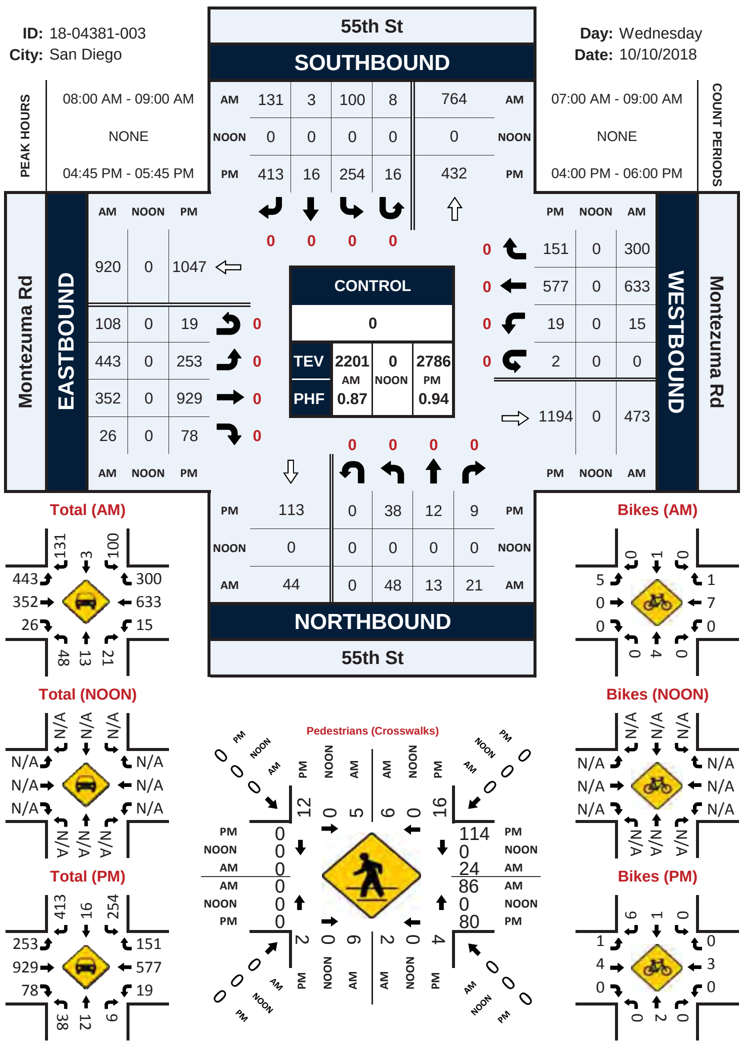
Prepared by National Data & Surveying Services

55th St & Montezuma Rd

Peak Hour Turning Movement Count

ID: 18-04381-003
City: San Diego

Day: Wednesday
Date: 10/10/2018



National Data & Surveying Services

Intersection Turning Movement Count

Location: 55th St & Montezuma Rd
City: San Diego
Control:

Project ID: 18-04381-003
Date: 10/10/2018

Total

NS/EW Streets:	55th St				55th St				Montezuma Rd				Montezuma Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	5	5	2	0	19	1	31	0	40	45	2	4	1	254	27	0	436
7:15 AM	14	1	3	0	14	0	19	0	52	59	2	12	2	262	44	1	485
7:30 AM	12	3	1	0	18	2	30	1	91	79	5	21	3	213	57	0	536
7:45 AM	11	5	7	0	21	2	24	2	122	108	17	11	4	185	64	0	583
8:00 AM	12	2	6	0	21	0	27	2	86	85	6	20	2	127	52	0	448
8:15 AM	14	1	5	0	23	0	31	2	102	66	4	27	7	170	80	0	532
8:30 AM	10	5	9	0	29	1	26	2	120	103	11	29	3	165	72	0	585
8:45 AM	12	5	1	0	27	2	47	2	135	98	5	32	3	171	96	0	636
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	90	27	34	0	172	8	235	11	748	643	52	156	25	1547	492	1	4241
APPROACH %'s :	59.60%	17.88%	22.52%	0.00%	40.38%	1.88%	55.16%	2.58%	46.78%	40.21%	3.25%	9.76%	1.21%	74.92%	23.83%	0.05%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	48	13	21	0	100	3	131	8	443	352	26	108	15	633	300	0	2201
PEAK HR FACTOR :	0.857	0.650	0.583	0.000	0.862	0.375	0.697	1.000	0.820	0.854	0.591	0.844	0.536	0.925	0.781	0.000	0.865
	0.854				0.776				0.860				0.878				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	11	3	5	0	67	2	94	2	44	215	10	3	5	142	32	2	637
4:15 PM	8	3	5	0	39	1	72	4	59	264	11	5	4	127	41	0	643
4:30 PM	9	0	5	0	50	3	90	1	54	256	9	6	4	141	26	0	654
4:45 PM	5	2	3	0	62	3	102	3	62	221	10	3	6	139	40	0	661
5:00 PM	13	4	4	0	61	2	95	2	59	254	19	5	5	156	34	0	713
5:15 PM	10	2	2	0	62	6	105	7	66	235	25	6	3	162	46	1	738
5:30 PM	10	4	0	0	69	5	111	4	66	219	24	5	5	120	31	1	674
5:45 PM	12	5	7	0	65	1	77	1	54	228	10	1	8	111	26	1	607
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	78	23	31	0	475	23	746	24	464	1892	118	34	40	1098	276	5	5327
APPROACH %'s :	59.09%	17.42%	23.48%	0.00%	37.46%	1.81%	58.83%	1.89%	18.50%	75.44%	4.70%	1.36%	2.82%	77.38%	19.45%	0.35%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	38	12	9	0	254	16	413	16	253	929	78	19	19	577	151	2	2786
PEAK HR FACTOR :	0.731	0.750	0.563	0.000	0.920	0.667	0.930	0.571	0.958	0.914	0.780	0.792	0.792	0.890	0.821	0.500	0.944
	0.702				0.925				0.949				0.883				

Prepared by NDS/ATD

VOLUME

Remington Rd Bet. Hewlett Dr & Peterson Way

Day: Wednesday
Date: 10/24/2018

City: San Diego
Project #: CA18_4382_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,091	1,154	2,245

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		4		4		12:00			17		21		38	
00:15			0		3		3		12:15			22		14		36	
00:30			4		3		7		12:30			16		7		23	
00:45			1	5	4	14	5	19	12:45			14	69	13	55	27	124
01:00			5		4		9		13:00			13		15		28	
01:15			1		7		8		13:15			18		17		35	
01:30			4		2		6		13:30			12		17		29	
01:45			2	12	3	16	5	28	13:45			20	63	23	72	43	135
02:00			0		0		0		14:00			23		19		42	
02:15			2		1		3		14:15			8		10		18	
02:30			2		5		7		14:30			3		3		6	
02:45			0	4	2	8	2	12	14:45			9	43	19	51	28	94
03:00			4		4		8		15:00			15		12		27	
03:15			2		2		4		15:15			8		23		31	
03:30			0		0		0		15:30			19		22		41	
03:45			1	7	1	7	2	14	15:45			12	54	16	73	28	127
04:00			1		1		2		16:00			10		20		30	
04:15			2		0		2		16:15			13		24		37	
04:30			1		1		2		16:30			11		21		32	
04:45			1	5	3	5	4	10	16:45			23	57	21	86	44	143
05:00			2		3		5		17:00			19		19		38	
05:15			2		1		3		17:15			20		35		55	
05:30			4		3		7		17:30			21		26		47	
05:45			6	14	2	9	8	23	17:45			17	77	18	98	35	175
06:00			7		3		10		18:00			26		21		47	
06:15			8		2		10		18:15			14		17		31	
06:30			12		5		17		18:30			16		14		30	
06:45			13	40	4	14	17	54	18:45			13	69	24	76	37	145
07:00			20		7		27		19:00			16		33		49	
07:15			14		7		21		19:15			25		21		46	
07:30			18		11		29		19:30			18		17		35	
07:45			12	64	13	38	25	102	19:45			16	75	20	91	36	166
08:00			9		16		25		20:00			17		21		38	
08:15			13		11		24		20:15			15		18		33	
08:30			16		9		25		20:30			15		19		34	
08:45			28	66	11	47	39	113	20:45			14	61	19	77	33	138
09:00			14		13		27		21:00			13		20		33	
09:15			11		12		23		21:15			16		21		37	
09:30			23		12		35		21:30			14		17		31	
09:45			18	66	14	51	32	117	21:45			12	55	20	78	32	133
10:00			22		11		33		22:00			8		9		17	
10:15			12		10		22		22:15			9		11		20	
10:30			14		17		31		22:30			13		14		27	
10:45			26	74	18	56	44	130	22:45			9	39	19	53	28	92
11:00			10		13		23		23:00			12		12		24	
11:15			14		11		25		23:15			4		7		11	
11:30			10		8		18		23:30			7		3		10	
11:45			13	47	16	48	29	95	23:45			2	25	9	31	11	56
TOTALS				404		313		**717**	**TOTALS**				687		841		**1528**
SPLIT %				56.3%		43.7%		**31.9%**	**SPLIT %**				45.0%		55.0%		**68.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,091	1,154	2,245

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour			08:45	10:30	**10:00**	**PM Peak Hour**			17:15	16:45	**16:45**
AM Pk Volume			76	59	**130**	**PM Pk Volume**			84	101	**184**
Pk Hr Factor			0.679	0.819	**0.739**	**Pk Hr Factor**			0.808	0.721	**0.836**
7 - 9 Volume	0	0	130	85	**215**	**4 - 6 Volume**	0	0	134	184	**318**
7 - 9 Peak Hour			08:00	07:30	**08:00**	**4 - 6 Peak Hour**			16:45	16:45	**16:45**
7 - 9 Pk Volume	0	0	66	51	**113**	**4 - 6 Pk Volume**	0	0	83	101	**184**
Pk Hr Factor	0.000	0.000	0.589	0.797	**0.724**	**Pk Hr Factor**	0.000	0.000	0.902	0.721	**0.836**

Prepared by NDS/ATD

VOLUME

55th St Bet. Peterson Gym & Aztec Walk

Day: Wednesday

Date: 10/10/2018

City: San Diego

Project #: CA18_4382_002

DAILY TOTALS	NB	SB	EB	WB	Total
	5,212	5,467	0	0	10,679

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	18		15				33		12:00	59		115				174	
00:15	20		17				37		12:15	54		73				127	
00:30	15		15				30		12:30	78		66				144	
00:45	10	63	11	58			21	121	12:45	89	280	107	361			196	641
01:00	13		10				23		13:00	62		119				181	
01:15	15		14				29		13:15	81		58				139	
01:30	5		6				11		13:30	82		73				155	
01:45	5	38	6	36			11	74	13:45	100	325	119	369			219	694
02:00	10		7				17		14:00	77		107				184	
02:15	4		4				8		14:15	57		78				135	
02:30	3		1				4		14:30	72		74				146	
02:45	6	23	4	16			10	39	14:45	77	283	79	338			156	621
03:00	2		4				6		15:00	81		104				185	
03:15	9		4				13		15:15	101		119				220	
03:30	3		6				9		15:30	126		106				232	
03:45	5	19	2	16			7	35	15:45	118	426	102	431			220	857
04:00	4		6				10		16:00	56		91				147	
04:15	7		4				11		16:15	66		70				136	
04:30	3		10				13		16:30	70		68				138	
04:45	7	21	2	22			9	43	16:45	73	265	109	338			182	603
05:00	8		3				11		17:00	80		118				198	
05:15	10		4				14		17:15	80		103				183	
05:30	8		7				15		17:30	66		116				182	
05:45	14	40	15	29			29	69	17:45	69	295	102	439			171	734
06:00	23		10				33		18:00	65		140				205	
06:15	27		23				50		18:15	110		142				252	
06:30	25		26				51		18:30	124		141				265	
06:45	33	108	14	73			47	181	18:45	109	408	193	616			302	1024
07:00	61		25				86		19:00	64		105				169	
07:15	70		23				93		19:15	63		60				123	
07:30	97		32				129		19:30	60		82				142	
07:45	119	347	25	105			144	452	19:45	51	238	80	327			131	565
08:00	131		29				160		20:00	39		91				130	
08:15	143		47				190		20:15	30		90				120	
08:30	142		54				196		20:30	64		120				184	
08:45	167	583	73	203			240	786	20:45	54	187	74	375			128	562
09:00	98		51				149		21:00	54		71				125	
09:15	73		44				117		21:15	40		76				116	
09:30	84		38				122		21:30	47		54				101	
09:45	91	346	90	223			181	569	21:45	45	186	73	274			118	460
10:00	59		71				130		22:00	40		46				86	
10:15	48		45				93		22:15	31		46				77	
10:30	70		57				127		22:30	36		38				74	
10:45	80	257	76	249			156	506	22:45	26	133	31	161			57	294
11:00	52		90				142		23:00	18		42				60	
11:15	60		66				126		23:15	18		19				37	
11:30	67		62				129		23:30	20		19				39	
11:45	91	270	82	300			173	570	23:45	15	71	28	108			43	179
TOTALS		2115		1330				**3445**	**TOTALS**		3097		4137				**7234**
SPLIT %		61.4%		38.6%				**32.3%**	**SPLIT %**		42.8%		57.2%				**67.7%**

DAILY TOTALS	NB	SB	EB	WB	Total
	5,212	5,467	0	0	10,679

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	08:00	11:45			**08:00**	**PM Peak Hour**	15:00	18:00			**18:00**
AM Pk Volume	583	336			**786**	**PM Pk Volume**	426	616			**1024**
Pk Hr Factor	0.873	0.730			**0.819**	**Pk Hr Factor**	0.845	0.798			**0.848**
7 - 9 Volume	930	308	0	0	**1238**	**4 - 6 Volume**	560	777	0	0	**1337**
7 - 9 Peak Hour	08:00	08:00			**08:00**	**4 - 6 Peak Hour**	16:30	16:45			**16:45**
7 - 9 Pk Volume	583	203	0	0	**786**	**4 - 6 Pk Volume**	303	446	0	0	**745**
Pk Hr Factor	0.873	0.695	0.000	0.000	**0.819**	**Pk Hr Factor**	0.947	0.945	0.000	0.000	**0.941**

Prepared by NDS/ATD

VOLUME

55th St Bet. Hardy Ave & Montezuma Rd

Day: Wednesday
Date: 10/10/2018

City: San Diego
Project #: CA18_4382_003

DAILY TOTALS	NB	SB	EB	WB	Total
	5,972	8,289	0	0	14,261

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	14		31				45		12:00	61		174				235	
00:15	15		27				42		12:15	66		114				180	
00:30	14		22				36		12:30	108		94				202	
00:45	10	53	17	97			27	150	12:45	110	345	121	503			231	848
01:00	9		21				30		13:00	72		183				255	
01:15	10		13				23		13:15	113		105				218	
01:30	4		10				14		13:30	102		91				193	
01:45	6	29	14	58			20	87	13:45	118	405	156	535			274	940
02:00	5		9				14		14:00	87		168				255	
02:15	4		5				9		14:15	48		103				151	
02:30	1		4				5		14:30	71		120				191	
02:45	5	15	7	25			12	40	14:45	97	303	134	525			231	828
03:00	2		6				8		15:00	105		146				251	
03:15	4		4				8		15:15	116		174				290	
03:30	2		6				8		15:30	144		188				332	
03:45	4	12	2	18			6	30	15:45	151	516	166	674			317	1190
04:00	3		5				8		16:00	67		159				226	
04:15	6		5				11		16:15	78		119				197	
04:30	6		10				16		16:30	63		146				209	
04:45	10	25	2	22			12	47	16:45	76	284	169	593			245	877
05:00	12		5				17		17:00	74		174				248	
05:15	11		9				20		17:15	88		178				266	
05:30	25		11				36		17:30	81		186				267	
05:45	30	78	16	41			46	119	17:45	81	324	144	682			225	1006
06:00	28		13				41		18:00	78		198				276	
06:15	46		29				75		18:15	122		199				321	
06:30	35		32				67		18:30	150		217				367	
06:45	46	155	19	93			65	248	18:45	120	470	257	871			377	1341
07:00	64		51				115		19:00	68		182				250	
07:15	94		35				129		19:15	56		100				156	
07:30	116		50				166		19:30	71		127				198	
07:45	164	438	53	189			217	627	19:45	39	234	115	524			154	758
08:00	113		48				161		20:00	39		150				189	
08:15	172		60				232		20:15	39		148				187	
08:30	164		57				221		20:30	64		164				228	
08:45	217	666	76	241			293	907	20:45	56	198	117	579			173	777
09:00	103		86				189		21:00	54		104				158	
09:15	116		61				177		21:15	42		112				154	
09:30	124		57				181		21:30	48		96				144	
09:45	103	446	107	311			210	757	21:45	41	185	111	423			152	608
10:00	65		108				173		22:00	31		76				107	
10:15	73		64				137		22:15	33		77				110	
10:30	92		80				172		22:30	39		83				122	
10:45	70	300	113	365			183	665	22:45	36	139	53	289			89	428
11:00	50		136				186		23:00	13		63				76	
11:15	73		101				174		23:15	18		36				54	
11:30	66		98				164		23:30	22		36				58	
11:45	97	286	107	442			204	728	23:45	13	66	54	189			67	255
TOTALS		2503		1902				**4405**	**TOTALS**		3469		6387				**9856**
SPLIT %		56.8%		43.2%				**30.9%**	**SPLIT %**		35.2%		64.8%				**69.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	5,972	8,289	0	0	14,261

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	08:00	11:30			**08:15**	**PM Peak Hour**	15:00	18:00			**18:00**
AM Pk Volume	666	493			**935**	**PM Pk Volume**	516	871			**1341**
Pk Hr Factor	0.767	0.708			**0.798**	**Pk Hr Factor**	0.854	0.847			**0.889**
7 - 9 Volume	1104	430	0	0	**1534**	**4 - 6 Volume**	608	1275	0	0	**1883**
7 - 9 Peak Hour	08:00	08:00			**08:00**	**4 - 6 Peak Hour**	17:00	16:45			**16:45**
7 - 9 Pk Volume	666	241	0	0	**907**	**4 - 6 Pk Volume**	324	707	0	0	**1026**
Pk Hr Factor	0.767	0.793	0.000	0.000	**0.774**	**Pk Hr Factor**	0.920	0.950	0.000	0.000	**0.961**

Prepared by NDS/ATD

VOLUME

Montezuma Rd Bet. Yerba Santa Dr & 54th St

Day: Wednesday
Date: 10/10/2018

City: San Diego
Project #: CA18_4382_004

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	12,967	14,574	27,541

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			16		32		48		12:00			158		278		436	
00:15			22		31		53		12:15			184		230		414	
00:30			16		32		48		12:30			187		155		342	
00:45			10	64	33	128	43	192	12:45			212	741	176	839	388	1580
01:00			13		22		35		13:00			190		246		436	
01:15			9		19		28		13:15			206		179		385	
01:30			10		16		26		13:30			202		176		378	
01:45			5	37	12	69	17	106	13:45			196	794	193	794	389	1588
02:00			5		8		13		14:00			183		257		440	
02:15			2		10		12		14:15			158		179		337	
02:30			1		6		7		14:30			192		182		374	
02:45			7	15	9	33	16	48	14:45			233	766	202	820	435	1586
03:00			4		9		13		15:00			256		207		463	
03:15			2		7		9		15:15			296		315		611	
03:30			4		9		13		15:30			327		350		677	
03:45			2	12	9	34	11	46	15:45			318	1197	293	1165	611	2362
04:00			3		13		16		16:00			258		262		520	
04:15			7		8		15		16:15			345		219		564	
04:30			6		24		30		16:30			301		275		576	
04:45			10	26	11	56	21	82	16:45			341	1245	263	1019	604	2264
05:00			11		18		29		17:00			326		294		620	
05:15			21		27		48		17:15			318		292		610	
05:30			26		43		69		17:30			305		279		584	
05:45			45	103	62	150	107	253	17:45			303	1252	219	1084	522	2336
06:00			35		80		115		18:00			248		251		499	
06:15			46		140		186		18:15			348		283		631	
06:30			54		236		290		18:30			319		332		651	
06:45			78	213	278	734	356	947	18:45			198	1113	339	1205	537	2318
07:00			97		305		402		19:00			190		340		530	
07:15			139		300		439		19:15			163		200		363	
07:30			214		291		505		19:30			145		166		311	
07:45			233	683	234	1130	467	1813	19:45			119	617	165	871	284	1488
08:00			180		161		341		20:00			111		140		251	
08:15			223		197		420		20:15			107		189		296	
08:30			270		188		458		20:30			131		193		324	
08:45			249	922	232	778	481	1700	20:45			113	462	147	669	260	1131
09:00			157		195		352		21:00			102		123		225	
09:15			169		150		319		21:15			92		148		240	
09:30			210		116		326		21:30			88		126		214	
09:45			200	736	165	626	365	1362	21:45			93	375	139	536	232	911
10:00			123		162		285		22:00			85		98		183	
10:15			144		139		283		22:15			62		89		151	
10:30			156		140		296		22:30			51		92		143	
10:45			162	585	142	583	304	1168	22:45			36	234	69	348	105	582
11:00			125		205		330		23:00			28		72		100	
11:15			162		159		321		23:15			28		64		92	
11:30			186		160		346		23:30			36		42		78	
11:45			191	664	145	669	336	1333	23:45			19	111	56	234	75	345
TOTALS				4060		4990		**9050**	**TOTALS**				8907		9584		**18491**
SPLIT %				44.9%		55.1%		**32.9%**	**SPLIT %**				48.2%		51.8%		**67.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	12,967	14,574	27,541

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour			08:00	06:45	**07:00**	**PM Peak Hour**			16:15	18:15	**15:15**
AM Pk Volume			922	1174	**1813**	**PM Pk Volume**			1313	1294	**2419**
Pk Hr Factor			0.854	0.962	**0.898**	**Pk Hr Factor**			0.951	0.951	**0.893**
7 - 9 Volume	0	0	1605	1908	**3513**	**4 - 6 Volume**	0	0	2497	2103	**4600**
7 - 9 Peak Hour			08:00	07:00	**07:00**	**4 - 6 Peak Hour**			16:15	16:45	**16:45**
7 - 9 Pk Volume	0	0	922	1130	**1813**	**4 - 6 Pk Volume**	0	0	1313	1128	**2418**
Pk Hr Factor	0.000	0.000	0.854	0.926	**0.898**	**Pk Hr Factor**	0.000	0.000	0.951	0.959	**0.975**

Prepared by NDS/ATD

VOLUME

Montezuma Rd Bet. 55th St & Campanile Dr

Day: Wednesday
Date: 10/10/2018

City: San Diego
Project #: CA18_4382_005

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	11,303	12,474	23,777

AM Period	NB	SB	EB		WB		TOTAL	
00:00			37		31		68	
00:15			29		34		63	
00:30			22		33		55	
00:45			17	105	38	136	55	241
01:00			21		22		43	
01:15			10		25		35	
01:30			17		18		35	
01:45			10	58	9	74	19	132
02:00			10		14		24	
02:15			3		13		16	
02:30			3		5		8	
02:45			10	26	13	45	23	71
03:00			8		9		17	
03:15			4		11		15	
03:30			5		8		13	
03:45			3	20	13	41	16	61
04:00			4		13		17	
04:15			7		8		15	
04:30			5		23		28	
04:45			5	21	18	62	23	83
05:00			8		19		27	
05:15			12		23		35	
05:30			9		49		58	
05:45			21	50	60	151	81	201
06:00			22		75		97	
06:15			26		136		162	
06:30			34		231		265	
06:45			45	127	266	708	311	835
07:00			67		303		370	
07:15			74		301		375	
07:30			113		298		411	
07:45			119	373	218	1120	337	1493
08:00			107		191		298	
08:15			104		268		372	
08:30			134		285		419	
08:45			125	470	326	1070	451	1540
09:00			116		194		310	
09:15			88		169		257	
09:30			125		147		272	
09:45			124	453	138	648	262	1101
10:00			104		102		206	
10:15			102		137		239	
10:30			122		130		252	
10:45			141	469	118	487	259	956
11:00			132		147		279	
11:15			141		155		296	
11:30			147		132		279	
11:45			175	595	146	580	321	1175
TOTALS				2767		5122		7889
SPLIT %				35.1%		64.9%		33.2%

PM Period	NB	SB	EB		WB		TOTAL	
12:00			163		200		363	
12:15			164		168		332	
12:30			143		161		304	
12:45			171	641	153	682	324	1323
13:00			182		152		334	
13:15			159		187		346	
13:30			161		151		312	
13:45			177	679	157	647	334	1326
14:00			172		200		372	
14:15			170		129		299	
14:30			186		145		331	
14:45			191	719	156	630	347	1349
15:00			252		168		420	
15:15			273		254		527	
15:30			281		285		566	
15:45			300	1106	294	1001	594	2107
16:00			289		189		478	
16:15			319		190		509	
16:30			290		205		495	
16:45			273	1171	206	790	479	1961
17:00			242		191		433	
17:15			214		184		398	
17:30			287		161		448	
17:45			305	1048	144	680	449	1728
18:00			267		164		431	
18:15			282		197		479	
18:30			231		237		468	
18:45			240	1020	217	815	457	1835
19:00			205		231		436	
19:15			144		166		310	
19:30			154		148		302	
19:45			145	648	113	658	258	1306
20:00			140		104		244	
20:15			146		129		275	
20:30			179		132		311	
20:45			142	607	121	486	263	1093
21:00			110		100		210	
21:15			99		107		206	
21:30			98		111		209	
21:45			103	410	99	417	202	827
22:00			95		83		178	
22:15			85		91		176	
22:30			68		80		148	
22:45			51	299	71	325	122	624
23:00			54		69		123	
23:15			43		59		102	
23:30			44		51		95	
23:45			47	188	42	221	89	409
TOTALS				8536		7352		15888
SPLIT %				53.7%		46.3%		66.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	11,303	12,474	23,777

	NB	SB	EB	WB	Total
AM Peak Hour			11:30	06:45	08:15
AM Pk Volume			649	1168	1552
Pk Hr Factor			0.927	0.964	0.860
7 - 9 Volume	0	0	843	2190	3033
7 - 9 Peak Hour			08:00	07:00	08:00
7 - 9 Pk Volume	0	0	470	1120	1540
Pk Hr Factor	0.000	0.000	0.877	0.924	0.854

	NB	SB	EB	WB	Total
PM Peak Hour			15:45	15:15	15:15
PM Pk Volume			1198	1022	2165
Pk Hr Factor			0.939	0.869	0.911
4 - 6 Volume	0	0	2219	1470	3689
4 - 6 Peak Hour			16:00	16:15	16:00
4 - 6 Pk Volume	0	0	1171	792	1961
Pk Hr Factor	0.000	0.000	0.918	0.961	0.963

APPENDIX B

INTERSECTION ANALYSIS METHODOLOGY

HIGHWAY CAPACITY 6th EDITION MANUAL
LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

In the Highway Capacity Manual 6th Edition (HCM 6), Level of Service for signalized intersections is defined in terms of delay. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Specifically, Level of Service criteria are stated in terms of the average control delay per vehicle for a 15-minute analysis period. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Delay is a complex measure, and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group or approach in question.

LEVEL OF SERVICE	CONTROLLED DELAY PER VEHICLE (SEC)		
A		≤	10.0
B	10.1	to	20.0
C	20.1	to	35.0
D	35.1	to	55.0
E	55.1	to	80.0
F		>	80.0

Level of Service A describes operations with very low delay, (i.e. less than 10.0 seconds per vehicle). This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

Level of Service B describes operations with delay in the range of 10.1 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.

Level of Service C describes operations with delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in the level. The number of vehicles stopping is significant at this level, although many still pass through the intersections without stopping.

Level of Service D describes operations with delay in the range of 35.1 to 55.0 seconds per vehicle. At Level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level of Service E describes operations with delay in the range of 55.1 to 80.0 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.

Level of Service F describes operations with delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation (i.e. when arrival flow rates exceed the capacity of the intersection). It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

APPENDIX C

CITY OF SAN DIEGO ROADWAY CLASSIFICATION TABLE

TABLE 2
Roadway Classifications, Levels of Service (LOS)
and Average Daily Traffic (ADT)

			LEVEL OF SERVICE				
STREET CLASSIFICATION	LANES	CROSS SECTIONS	A	B	C	D	E
Freeway	8 lanes		60,000	84,000	120,000	140,000	150,000
Freeway	6 lanes		45,000	63,000	90,000	110,000	120,000
Freeway	4 lanes		30,000	42,000	60,000	70,000	80,000
Expressway	6 lanes	102/122	30,000	42,000	60,000	70,000	80,000
Primary Arterial	6 lanes	102/122	25,000	35,000	50,000	55,000	60,000
Major Arterial	6 lanes	102/122	20,000	28,000	40,000	45,000	50,000
Major Arterial	4 lanes	78/98	15,000	21,000	30,000	35,000	40,000
Collector	4 lanes	72/92	10,000	14,000	20,000	25,000	30,000
Collector (no center lane) continuous left-turn lane)	4 lanes 2 lanes	64/84 50/70	5,000	7,000	 10,000	13,000	15,000
Collector (no fronting property)	2 lanes	40/60	4,000	5,500	7,500	9,000	10,000
Collector (commercial-industrial fronting)	2 lanes	50/70	2,500	3,500	5,000	6,500	8,000
Collector (multifamily)	2 lanes	40/60	2,500	3,500	5,000	6,500	8,000
Sub-Collector (single-family)	2 lanes	36/56	—	—	2,200	—	—

<u>LEGEND</u>:

XXX/XXX = Curb to curb width (feet)/right-of-way width (feet): based on the City of San Diego Street Design. Manual

XX/XXX= Approximate recommended ADT based on the City of San Diego Street Design Manual.

<u>NOTES</u>:

1. The volumes and the average daily level of service listed above are only intended as a general planning guideline.

2. Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

APPENDIX D

EXISTING INTERSECTION ANALYSIS WORKSHEETS

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	31	51	50	559	71	19
Future Volume (veh/h)	31	51	50	559	71	19
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.89	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1900
Adj Flow Rate, veh/h	38	63	62	690	56	58
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	0
Cap, veh/h	48	910	774	1246	742	671
Arrive On Green	0.03	0.49	0.41	0.41	0.42	0.42
Sat Flow, veh/h	1781	1870	1870	1416	1781	1610
Grp Volume(v), veh/h	38	63	62	690	56	58
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1416	1781	1610
Q Serve(g_s), s	2.0	1.7	1.9	6.6	1.8	2.1
Cycle Q Clear(g_c), s	2.0	1.7	1.9	6.6	1.8	2.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	48	910	774	1246	742	671
V/C Ratio(X)	0.79	0.07	0.08	0.55	0.08	0.09
Avail Cap(c_a), veh/h	178	910	774	1246	742	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.97	0.97	1.00	1.00
Uniform Delay (d), s/veh	46.4	13.1	17.1	0.5	16.9	16.9
Incr Delay (d2), s/veh	10.4	0.1	0.2	1.7	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.7	0.9	20.3	0.8	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	56.9	13.2	17.3	2.2	17.1	17.2
LnGrp LOS	E	B	B	A	B	B
Approach Vol, veh/h		101	752		114	
Approach Delay, s/veh		29.7	3.5		17.1	
Approach LOS		C	A		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		51.6		44.4	7.0	44.6
Change Period (Y+Rc), s		4.9		4.4	4.4	4.9
Max Green Setting (Gmax), s		46.7		40.0	9.6	32.7
Max Q Clear Time (g_c+I1), s		3.7		4.1	4.0	8.6
Green Ext Time (p_c), s		0.1		0.3	0.0	2.9

Intersection Summary						
HCM 6th Ctrl Delay			7.8			
HCM 6th LOS			A			

Notes

User approved volume balancing among the lanes for turning movement.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	6	577	0	0	215
Future Volume (vph)	13	6	577	0	0	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9		4.9			4.9
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.88		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.96		1.00			1.00
Flt Protected	0.97		1.00			1.00
Satd. Flow (prot)	1511		3539			3539
Flt Permitted	0.97		1.00			1.00
Satd. Flow (perm)	1511		3539			3539
Peak-hour factor, PHF	0.73	0.73	0.73	0.73	0.73	0.73
Adj. Flow (vph)	18	8	790	0	0	295
RTOR Reduction (vph)	7	0	0	0	0	0
Lane Group Flow (vph)	19	0	790	0	0	295
Confl. Peds. (#/hr)		483		37		
Confl. Bikes (#/hr)		10		10		
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases						
Actuated Green, G (s)	12.6		73.6			73.6
Effective Green, g (s)	12.6		73.6			73.6
Actuated g/C Ratio	0.13		0.77			0.77
Clearance Time (s)	4.9		4.9			4.9
Vehicle Extension (s)	2.0		3.6			3.4
Lane Grp Cap (vph)	198		2713			2713
v/s Ratio Prot	c0.01		c0.22			0.08
v/s Ratio Perm						
v/c Ratio	0.10		0.29			0.11
Uniform Delay, d1	36.7		3.4			2.9
Progression Factor	1.00		0.36			0.81
Incremental Delay, d2	0.1		0.3			0.1
Delay (s)	36.8		1.5			2.4
Level of Service	D		A			A
Approach Delay (s)	36.8		1.5			2.4
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	2.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1	2	2	0	4	0	573	20	5	219	4
Future Volume (vph)	0	1	2	2	0	4	0	573	20	5	219	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9			4.9			4.9			4.9	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.76			0.98			0.99			0.99	
Flpb, ped/bikes		1.00			0.89			1.00			1.00	
Frt		0.90			0.92			0.99			1.00	
Flt Protected		1.00			0.98			1.00			1.00	
Satd. Flow (prot)		1276			1458			3480			3489	
Flt Permitted		1.00			0.93			1.00			0.94	
Satd. Flow (perm)		1276			1384			3480			3284	
Peak-hour factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	0	1	3	3	0	5	0	754	26	7	288	5
RTOR Reduction (vph)	0	3	0	0	7	0	0	2	0	0	1	0
Lane Group Flow (vph)	0	1	0	0	1	0	0	778	0	0	299	0
Confl. Peds. (#/hr)			228	228					111	111		160
Confl. Bikes (#/hr)			10			10			10			10
Turn Type		NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Actuated Green, G (s)		12.6			12.6			73.6			73.6	
Effective Green, g (s)		12.6			12.6			73.6			73.6	
Actuated g/C Ratio		0.13			0.13			0.77			0.77	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			3.6			3.4	
Lane Grp Cap (vph)		167			181			2668			2517	
v/s Ratio Prot		c0.00						c0.22				
v/s Ratio Perm					0.00						0.09	
v/c Ratio		0.01			0.01			0.29			0.12	
Uniform Delay, d1		36.3			36.3			3.4			2.9	
Progression Factor		1.00			1.00			1.00			0.58	
Incremental Delay, d2		0.0			0.0			0.3			0.1	
Delay (s)		36.3			36.3			3.6			1.8	
Level of Service		D			D			A			A	
Approach Delay (s)		36.3			36.3			3.6			1.8	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	3.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	22	59	42	63	123	541	0	0	118	16
Future Volume (veh/h)	4	0	22	59	42	63	123	541	0	0	118	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.90	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h	5	0	25	62	55	72	140	615	0	0	134	18
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	0	2	2	2	2	2	2	0	0	2	2
Cap, veh/h	0	0	0	261	275	209	168	2756	0	0	2297	1004
Arrive On Green	0.00	0.00	0.00	0.15	0.15	0.15	0.03	0.26	0.00	0.00	0.65	0.65
Sat Flow, veh/h		0		1781	1870	1424	1781	3647	0	0	3647	1553
Grp Volume(v), veh/h		0.0		62	55	72	140	615	0	0	134	18
Grp Sat Flow(s),veh/h/ln				1781	1870	1424	1781	1777	0	0	1777	1553
Q Serve(g_s), s				3.9	3.3	5.7	9.9	17.2	0.0	0.0	1.7	0.5
Cycle Q Clear(g_c), s				3.9	3.3	5.7	9.9	17.2	0.0	0.0	1.7	0.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				261	275	209	168	2756	0	0	2297	1004
V/C Ratio(X)				0.24	0.20	0.34	0.83	0.22	0.00	0.00	0.06	0.02
Avail Cap(c_a), veh/h				440	462	352	277	2756	0	0	2297	1004
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.68	0.68	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				47.5	47.3	48.3	60.1	16.9	0.0	0.0	8.2	8.0
Incr Delay (d2), s/veh				0.2	0.1	0.4	3.2	0.1	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.8	1.6	2.1	4.9	8.3	0.0	0.0	0.7	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				47.7	47.4	48.7	63.2	17.1	0.0	0.0	8.2	8.0
LnGrp LOS				D	D	D	E	B	A	A	A	A
Approach Vol, veh/h					189			755			152	
Approach Delay, s/veh					48.0			25.6			8.2	
Approach LOS					D			C			A	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		102.6			16.3	86.3		23.4				
Change Period (Y+Rc), s		4.9			4.4	4.9		4.9				
Max Green Setting (Gmax), s		51.1			19.6	27.1		31.1				
Max Q Clear Time (g_c+I1), s		19.2			11.9	3.7		7.7				
Green Ext Time (p_c), s		5.5			0.1	1.0		0.6				

Intersection Summary		
HCM 6th Ctrl Delay		27.1
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	33	669	1189	6	14	102
Future Volume (veh/h)	33	669	1189	6	14	102
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1900	1900
Adj Flow Rate, veh/h	34	697	1239	6	15	106
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	43	2815	2658	13	23	159
Arrive On Green	0.02	0.79	0.73	0.73	0.11	0.11
Sat Flow, veh/h	1781	3647	3719	18	196	1387
Grp Volume(v), veh/h	34	697	607	638	122	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1867	1597	0
Q Serve(g_s), s	2.4	6.4	17.5	17.5	9.2	0.0
Cycle Q Clear(g_c), s	2.4	6.4	17.5	17.5	9.2	0.0
Prop In Lane	1.00			0.01	0.12	0.87
Lane Grp Cap(c), veh/h	43	2815	1302	1368	183	0
V/C Ratio(X)	0.79	0.25	0.47	0.47	0.66	0.00
Avail Cap(c_a), veh/h	107	2815	1302	1368	430	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	61.1	3.4	6.8	6.8	53.4	0.0
Incr Delay (d2), s/veh	11.0	0.2	1.2	1.1	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.8	5.8	6.1	3.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	72.2	3.6	8.0	8.0	55.0	0.0
LnGrp LOS	E	A	A	A	D	A
Approach Vol, veh/h		731	1245		122	
Approach Delay, s/veh		6.8	8.0		55.0	
Approach LOS		A	A		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		106.4		19.6	7.5	99.0
Change Period (Y+Rc), s		* 6.6		5.1	4.4	6.6
Max Green Setting (Gmax), s		* 81		33.9	7.6	68.4
Max Q Clear Time (g_c+I1), s		8.4		11.2	4.4	19.5
Green Ext Time (p_c), s		14.4		0.2	0.0	29.1

Intersection Summary		
HCM 6th Ctrl Delay		10.3
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	551	352	26	15	633	300	48	13	21	108	3	131
Future Volume (veh/h)	551	352	26	15	633	300	48	13	21	108	3	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.83	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	633	405	30	17	728	345	55	15	24	126	0	151
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	686	1676	124	25	1125	487	205	56	90	407	0	175
Arrive On Green	0.20	0.50	0.50	0.01	0.32	0.32	0.21	0.21	0.21	0.11	0.00	0.11
Sat Flow, veh/h	3456	3345	247	1781	3554	1539	962	262	420	3563	0	1535
Grp Volume(v), veh/h	633	214	221	17	728	345	94	0	0	126	0	151
Grp Sat Flow(s),veh/h/ln	1728	1777	1815	1781	1777	1539	1644	0	0	1781	0	1535
Q Serve(g_s), s	22.6	8.6	8.7	1.2	22.2	24.9	6.0	0.0	0.0	4.1	0.0	12.2
Cycle Q Clear(g_c), s	22.6	8.6	8.7	1.2	22.2	24.9	6.0	0.0	0.0	4.1	0.0	12.2
Prop In Lane	1.00		0.14	1.00		1.00	0.59		0.26	1.00		1.00
Lane Grp Cap(c), veh/h	686	890	909	25	1125	487	351	0	0	407	0	175
V/C Ratio(X)	0.92	0.24	0.24	0.67	0.65	0.71	0.27	0.00	0.00	0.31	0.00	0.86
Avail Cap(c_a), veh/h	719	890	909	57	1125	487	392	0	0	447	0	193
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.5	17.8	17.9	61.8	37.0	37.9	41.3	0.0	0.0	51.2	0.0	54.8
Incr Delay (d2), s/veh	16.5	0.6	0.6	10.8	2.9	8.4	0.2	0.0	0.0	0.4	0.0	29.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	3.7	3.8	0.6	10.0	10.4	2.5	0.0	0.0	1.9	0.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.0	18.5	18.5	72.6	39.9	46.3	41.5	0.0	0.0	51.7	0.0	83.8
LnGrp LOS	E	B	B	E	D	D	D	A	A	D	A	F
Approach Vol, veh/h		1068			1090			94			277	
Approach Delay, s/veh		46.7			42.4			41.5			69.2	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	68.7		19.3	29.4	45.5		31.8				
Change Period (Y+Rc), s	4.4	5.6		4.9	4.4	* 5.6		4.9				
Max Green Setting (Gmax), s	4.0	56.4		15.8	26.2	* 35		30.0				
Max Q Clear Time (g_c+I1), s	3.2	10.7		14.2	24.6	26.9		8.0				
Green Ext Time (p_c), s	0.0	4.0		0.2	0.4	4.4		0.2				

Intersection Summary			
HCM 6th Ctrl Delay			47.1
HCM 6th LOS			D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	78	78	212	365	41
Future Volume (veh/h)	21	78	78	212	365	41
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.92	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1900
Adj Flow Rate, veh/h	23	87	87	236	449	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	0
Cap, veh/h	39	1192	991	1062	644	291
Arrive On Green	0.02	0.64	0.53	0.53	0.18	0.00
Sat Flow, veh/h	1781	1870	1870	1464	3563	1610
Grp Volume(v), veh/h	23	87	87	236	449	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1464	1781	1610
Q Serve(g_s), s	0.7	0.9	1.2	1.1	6.0	0.0
Cycle Q Clear(g_c), s	0.7	0.9	1.2	1.1	6.0	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	39	1192	991	1062	644	291
V/C Ratio(X)	0.59	0.07	0.09	0.22	0.70	0.00
Avail Cap(c_a), veh/h	195	1356	991	1062	1643	743
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.8	3.5	5.9	0.4	19.6	0.0
Incr Delay (d2), s/veh	5.3	0.0	0.2	0.5	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.2	0.4	3.9	2.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.1	3.5	6.1	0.8	20.2	0.0
LnGrp LOS	C	A	A	A	C	A
Approach Vol, veh/h		110	323		449	
Approach Delay, s/veh		9.1	2.3		20.2	
Approach LOS		A	A		C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		37.5		13.6	5.5	32.0
Change Period (Y+Rc), s		4.9		4.4	4.4	4.9
Max Green Setting (Gmax), s		37.1		23.6	5.6	27.1
Max Q Clear Time (g_c+I1), s		2.9		8.0	2.7	3.2
Green Ext Time (p_c), s		0.2		1.2	0.0	0.9

Intersection Summary			
HCM 6th Ctrl Delay			12.2
HCM 6th LOS			B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	14	7	296	0	0	549
Future Volume (vph)	14	7	296	0	0	549
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9		4.9			4.9
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.90		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.96		1.00			1.00
Flt Protected	0.97		1.00			1.00
Satd. Flow (prot)	1547		3539			3539
Flt Permitted	0.97		1.00			1.00
Satd. Flow (perm)	1547		3539			3539
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	15	7	315	0	0	584
RTOR Reduction (vph)	6	0	0	0	0	0
Lane Group Flow (vph)	16	0	315	0	0	584
Confl. Peds. (#/hr)		307		37		
Confl. Bikes (#/hr)		10		10		
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases						
Actuated Green, G (s)	9.4		47.8			47.8
Effective Green, g (s)	9.4		47.8			47.8
Actuated g/C Ratio	0.14		0.71			0.71
Clearance Time (s)	4.9		4.9			4.9
Vehicle Extension (s)	2.0		3.6			3.4
Lane Grp Cap (vph)	217		2524			2524
v/s Ratio Prot	c0.01		0.09			c0.17
v/s Ratio Perm						
v/c Ratio	0.07		0.12			0.23
Uniform Delay, d1	25.0		3.0			3.3
Progression Factor	1.00		1.09			1.00
Incremental Delay, d2	0.1		0.1			0.2
Delay (s)	25.1		3.4			3.5
Level of Service	C		A			A
Approach Delay (s)	25.1		3.4			3.5
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	1	9	3	1	0	294	22	6	556	1
Future Volume (vph)	1	1	1	9	3	1	0	294	22	6	556	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9			4.9			4.9			4.9	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.91			0.98			0.97			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.95			0.99			0.99			1.00	
Flt Protected		0.98			0.97			1.00			1.00	
Satd. Flow (prot)		1591			1741			3414			3526	
Flt Permitted		0.93			0.83			1.00			0.95	
Satd. Flow (perm)		1506			1504			3414			3357	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1	1	1	10	3	1	0	327	24	7	618	1
RTOR Reduction (vph)	0	1	0	0	1	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	2	0	0	13	0	0	346	0	0	626	0
Confl. Peds. (#/hr)			268			268			170	170		154
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Actuated Green, G (s)		9.4			9.4			47.8			47.8	
Effective Green, g (s)		9.4			9.4			47.8			47.8	
Actuated g/C Ratio		0.14			0.14			0.71			0.71	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			3.6			3.4	
Lane Grp Cap (vph)		211			211			2435			2394	
v/s Ratio Prot								0.10				
v/s Ratio Perm		0.00			c0.01						c0.19	
v/c Ratio		0.01			0.06			0.14			0.26	
Uniform Delay, d1		24.8			25.0			3.1			3.4	
Progression Factor		1.00			1.00			0.54			0.43	
Incremental Delay, d2		0.0			0.0			0.1			0.3	
Delay (s)		24.8			25.0			1.8			1.7	
Level of Service		C			C			A			A	
Approach Delay (s)		24.8			25.0			1.8			1.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	2.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	0	140	179	27	58	71	225	0	0	429	16
Future Volume (veh/h)	22	0	140	179	27	58	71	225	0	0	429	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.87	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h	23	0	146	186	28	60	74	234	0	0	447	17
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	0	2	2	2	2	2	2	0	0	2	2
Cap, veh/h	0	0	0	624	84	179	94	2672	0	0	2367	1020
Arrive On Green	0.00	0.00	0.00	0.18	0.18	0.18	0.02	0.25	0.00	0.00	0.67	0.67
Sat Flow, veh/h		0		3563	478	1023	1781	3647	0	0	3647	1531
Grp Volume(v), veh/h		0.0		186	0	88	74	234	0	0	447	17
Grp Sat Flow(s),veh/h/ln				1781	0	1501	1781	1777	0	0	1777	1531
Q Serve(g_s), s				6.1	0.0	6.9	5.5	6.8	0.0	0.0	6.4	0.5
Cycle Q Clear(g_c), s				6.1	0.0	6.9	5.5	6.8	0.0	0.0	6.4	0.5
Prop In Lane				1.00		0.68	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				624	0	263	94	2672	0	0	2367	1020
V/C Ratio(X)				0.30	0.00	0.33	0.78	0.09	0.00	0.00	0.19	0.02
Avail Cap(c_a), veh/h				827	0	348	181	2672	0	0	2367	1020
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.85	0.85	0.00	0.00	0.98	0.98
Uniform Delay (d), s/veh				48.1	0.0	48.4	65.1	15.1	0.0	0.0	8.5	7.6
Incr Delay (d2), s/veh				0.1	0.0	0.3	4.5	0.1	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.8	0.0	2.6	2.7	2.9	0.0	0.0	2.6	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				48.2	0.0	48.7	69.6	15.1	0.0	0.0	8.7	7.6
LnGrp LOS				D	A	D	E	B	A	A	A	A
Approach Vol, veh/h					274			308			464	
Approach Delay, s/veh					48.4			28.2			8.7	
Approach LOS					D			C			A	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		105.6			11.5	94.1		28.4				
Change Period (Y+Rc), s		4.9			4.4	4.9		4.9				
Max Green Setting (Gmax), s		57.1			13.6	39.1		31.1				
Max Q Clear Time (g_c+I1), s		8.8			7.5	8.4		8.9				
Green Ext Time (p_c), s		2.0			0.0	4.0		0.7				

Intersection Summary	
HCM 6th Ctrl Delay	24.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	119	1416	1082	59	9	58
Future Volume (veh/h)	119	1416	1082	59	9	58
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1900	1900
Adj Flow Rate, veh/h	121	1445	1104	60	9	59
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	145	2946	2444	133	17	114
Arrive On Green	0.08	0.83	0.71	0.71	0.08	0.08
Sat Flow, veh/h	1781	3647	3514	186	207	1356
Grp Volume(v), veh/h	121	1445	573	591	69	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1830	1586	0
Q Serve(g_s), s	9.0	15.7	18.2	18.2	5.6	0.0
Cycle Q Clear(g_c), s	9.0	15.7	18.2	18.2	5.6	0.0
Prop In Lane	1.00			0.10	0.13	0.86
Lane Grp Cap(c), veh/h	145	2946	1270	1307	133	0
V/C Ratio(X)	0.83	0.49	0.45	0.45	0.52	0.00
Avail Cap(c_a), veh/h	261	2946	1270	1307	378	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	60.6	3.3	8.1	8.1	58.8	0.0
Incr Delay (d2), s/veh	4.7	0.6	1.2	1.1	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	3.9	6.4	6.6	2.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	65.3	3.9	9.2	9.2	60.0	0.0
LnGrp LOS	E	A	A	A	E	A
Approach Vol, veh/h		1566	1164		69	
Approach Delay, s/veh		8.6	9.2		60.0	
Approach LOS		A	A		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		117.7		16.3	15.3	102.3
Change Period (Y+Rc), s		* 6.6		5.1	4.4	6.6
Max Green Setting (Gmax), s		* 91		31.9	19.6	60.0
Max Q Clear Time (g_c+I1), s		17.7		7.6	11.0	20.2
Green Ext Time (p_c), s		44.6		0.1	0.1	23.7

Intersection Summary						
HCM 6th Ctrl Delay			10.1			
HCM 6th LOS			B			

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	272	929	78	21	577	151	38	12	9	270	16	413
Future Volume (veh/h)	272	929	78	21	577	151	38	12	9	270	16	413
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	1.00		0.72	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	289	988	83	22	614	161	40	13	10	299	0	439
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	346	1109	93	30	896	378	230	75	58	1000	0	436
Arrive On Green	0.10	0.34	0.34	0.02	0.25	0.25	0.22	0.22	0.22	0.28	0.00	0.28
Sat Flow, veh/h	3456	3304	278	1781	3554	1501	1049	341	262	3563	0	1553
Grp Volume(v), veh/h	289	531	540	22	614	161	63	0	0	299	0	439
Grp Sat Flow(s),veh/h/ln	1728	1777	1805	1781	1777	1501	1652	0	0	1781	0	1553
Q Serve(g_s), s	11.0	38.0	38.0	1.6	20.9	12.0	4.1	0.0	0.0	8.8	0.0	37.6
Cycle Q Clear(g_c), s	11.0	38.0	38.0	1.6	20.9	12.0	4.1	0.0	0.0	8.8	0.0	37.6
Prop In Lane	1.00		0.15	1.00		1.00	0.63		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	346	596	606	30	896	378	362	0	0	1000	0	436
V/C Ratio(X)	0.83	0.89	0.89	0.74	0.69	0.43	0.17	0.00	0.00	0.30	0.00	1.01
Avail Cap(c_a), veh/h	505	596	606	82	896	378	370	0	0	1000	0	436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.96	0.00	0.96
Uniform Delay (d), s/veh	59.2	42.2	42.2	65.6	45.3	42.0	42.5	0.0	0.0	37.9	0.0	48.2
Incr Delay (d2), s/veh	5.2	18.0	17.8	12.5	4.3	3.5	0.1	0.0	0.0	0.2	0.0	44.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	19.4	19.7	0.8	9.7	4.8	1.7	0.0	0.0	4.0	0.0	19.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	60.2	60.0	78.1	49.6	45.5	42.5	0.0	0.0	38.0	0.0	92.2
LnGrp LOS	E	E	E	E	D	D	D	A	A	D	A	F
Approach Vol, veh/h		1360			797			63			738	
Approach Delay, s/veh		61.0			49.5			42.5			70.3	
Approach LOS		E			D			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	50.6		42.5	17.8	39.4		34.3				
Change Period (Y+Rc), s	4.4	5.6		4.9	4.4	* 5.6		4.9				
Max Green Setting (Gmax), s	6.2	40.4		37.6	19.6	* 28		30.0				
Max Q Clear Time (g_c+I1), s	3.6	40.0		39.6	13.0	22.9		6.1				
Green Ext Time (p_c), s	0.0	0.3		0.0	0.4	2.2		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			59.8									
HCM 6th LOS			E									

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

APPENDIX E

EXPANSION OF SIMILAR FACILITIES ON OTHER CAMPUSES

CSU San Luis Obispo
Pre expansion/renovation: 95,000 sq/ft, 750,000 total annual visits
Post expansion/renovation:165,000 sq/ft, 1,051,117 total annual visits
40% increase

University of Arizona
Pre expansion/renovation: 156,000 sq/ft, 589,200 total annual visits
Post expansion/renovation: 210,000 sq/ft, 826,800 total annual visits
40% increase

APPENDIX F

ARC VISITOR ENTRY DATA

				Thurs	Fri	Sat	Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Mon	Tues	Wed	
				2/1/2018	2/2/2018	2/3/2018	2/4/2018	2/5/2018	2/6/2018	2/7/2018	2/8/2018	2/9/2018	2/10/2018	2/11/2018	2/12/2018	2/13/2018	2/14/2018	2/15/2018	2/16/2018	2/17/2018	2/18/2018	2/19/2019	2/20/2018	2/21/2018	2/22/2018	2/23/2018	2/24/2018	2/25/2018	2/26/2018	2/27/2018	2/28/2018	TOTAL
OVERNITE	0:00:00	to	1:00:00	20	33	1	0	20	17	16	24	28	2	2	9	29	20	29	24	0	2	21	23	16	21	27	1	0	11	20	11	427
OVERNITE	1:01:00	to	2:00:00	10	5	0	0	2	10	9	5	9	0	0	5	9	6	6	6	0	0	9	10	3	9	9	0	0	3	6	4	135
OVERNITE	2:01:00	to	3:00:00	2	2	0	0	1	2	3	2	7	0	0	3	2	2	2	2	0	0	2	5	2	2	3	0	0	3	4	2	53
OVERNITE	3:01:00	to	4:00:00	5	6	0	0	4	6	6	4	3	0	0	4	5	7	4	6	0	0	1	6	6	3	5	0	0	2	4	5	92
OVERNITE	4:01:00	to	5:00:00	26	21	0	0	19	28	22	23	21	0	0	22	24	32	20	16	1	0	15	16	22	21	17	0	0	32	20	19	437
OVERNITE	5:01:00	to	6:00:00	43	42	0	0	47	56	46	60	41	0	0	54	58	46	57	43	0	0	42	47	45	33	29	0	0	0	54	48	891
EARLY MORN	6:01:00	to	7:00:00	109	87	0	0	123	116	124	103	70	23	0	121	116	118	84	86	0	0	131	130	97	102	73	2	0	16	124	144	2099
EARLY MORN	7:01:00	to	8:00:00	135	133	15	14	133	163	186	164	150	12	14	139	168	187	145	143	11	7	120	168	131	122	120	3	13	147	145	137	3025
MORNING	8:01:00	to	9:00:00	178	159	132	107	144	196	174	223	216	138	71	191	227	226	197	173	125	90	208	226	214	169	139	126	87	166	202	230	4734
MORNING	9:01:00	to	10:00:00	217	128	147	136	202	237	221	256	181	149	123	257	299	251	228	139	127	96	239	277	221	231	169	129	98	246	245	238	5487
MORNING	10:01:00	to	11:00:00	198	150	207	158	225	207	210	270	199	188	204	267	251	241	216	200	178	148	251	226	222	241	154	203	153	251	221	214	5853
MORNING	11:01:00	to	12:00:00	194	234	193	135	226	202	231	300	334	212	165	284	218	252	191	272	209	124	260	219	243	224	269	180	153	307	178	273	6282
AFTERNOON	12:01:00	to	13:00:00	191	229	133	139	174	187	165	270	332	206	155	259	206	189	220	289	156	125	199	217	162	205	259	177	157	235	248	207	5691
AFTERNOON	13:01:00	to	14:00:00	190	163	118	107	173	209	150	219	270	171	165	203	221	202	213	205	168	112	189	236	175	198	226	164	125	200	229	177	5178
AFTERNOON	14:01:00	to	15:00:00	204	174	81	83	170	173	183	273	217	179	132	203	230	213	199	256	154	114	185	195	185	130	238	173	137	228	212	197	5118
AFTERNOON	15:01:00	to	16:00:00	243	150	90	50	287	272	252	339	211	179	152	318	313	237	292	236	167	115	282	296	278	299	244	163	134	332	302	318	6551
AFTERNOON	16:01:00	to	17:00:00	249	187	90	40	230	266	246	343	245	190	197	288	306	261	302	249	161	157	238	375	254	379	201	129	167	265	324	328	6667
EVENING	17:01:00	to	18:00:00	289	148	85	44	257	309	254	321	189	168	181	328	329	196	326	223	136	150	295	353	310	314	202	127	205	327	340	328	6734
EVENING	18:01:00	to	19:00:00	271	141	89	53	279	266	278	275	190	123	171	371	393	276	333	187	90	108	340	361	385	327	179	118	160	352	316	367	6799
EVENING	19:01:00	to	20:00:00	190	138	106	73	234	273	218	287	125	99	169	317	356	197	261	126	106	118	234	327	274	253	148	96	143	288	308	309	5773
EVENING	20:01:00	to	21:00:00	117	92	78	93	285	238	218	211	122	75	150	276	284	204	220	83	82	108	209	246	268	206	110	75	135	287	269	248	4989
EVENING	21:01:00	to	22:00:00	155	80	74	61	190	205	188	159	91	67	134	212	253	131	176	64	66	81	167	192	194	130	74	62	123	203	233	209	3974
LATE EVENING	22:01:00	to	23:00:00	101	46	63	37	139	160	132	141	73	84	55	124	135	81	79	69	54	61	71	117	115	125	61	39	61	101	130	92	2546
LATE EVENING	23:01:00	to	23:59:00	35	4	11	30	56	51	62	43	18	15	38	61	65	40	45	15	19	135	54	36	29	50	14	14	33	45	54	50	1122
TOTAL				3372	2552	1713	1360	3620	3849	3594	4315	3342	2280	2278	4316	4497	3615	3845	3112	2010	1851	3762	4304	3851	3794	2970	1981	2084	4047	4188	4155	90657

Tuesday-Thursday		
Daily Average	3948.25	entering
AM Peak Hour Average	179.7083	entering
PM Peak Hour Average	304.25	entering

APPENDIX G

SURVEY QUESTIONS & RESULTS

SURVEY QUESTIONS FOR ARC EXPANSION PROJECT

Please check the box that best applies.

1. The ARC is my…

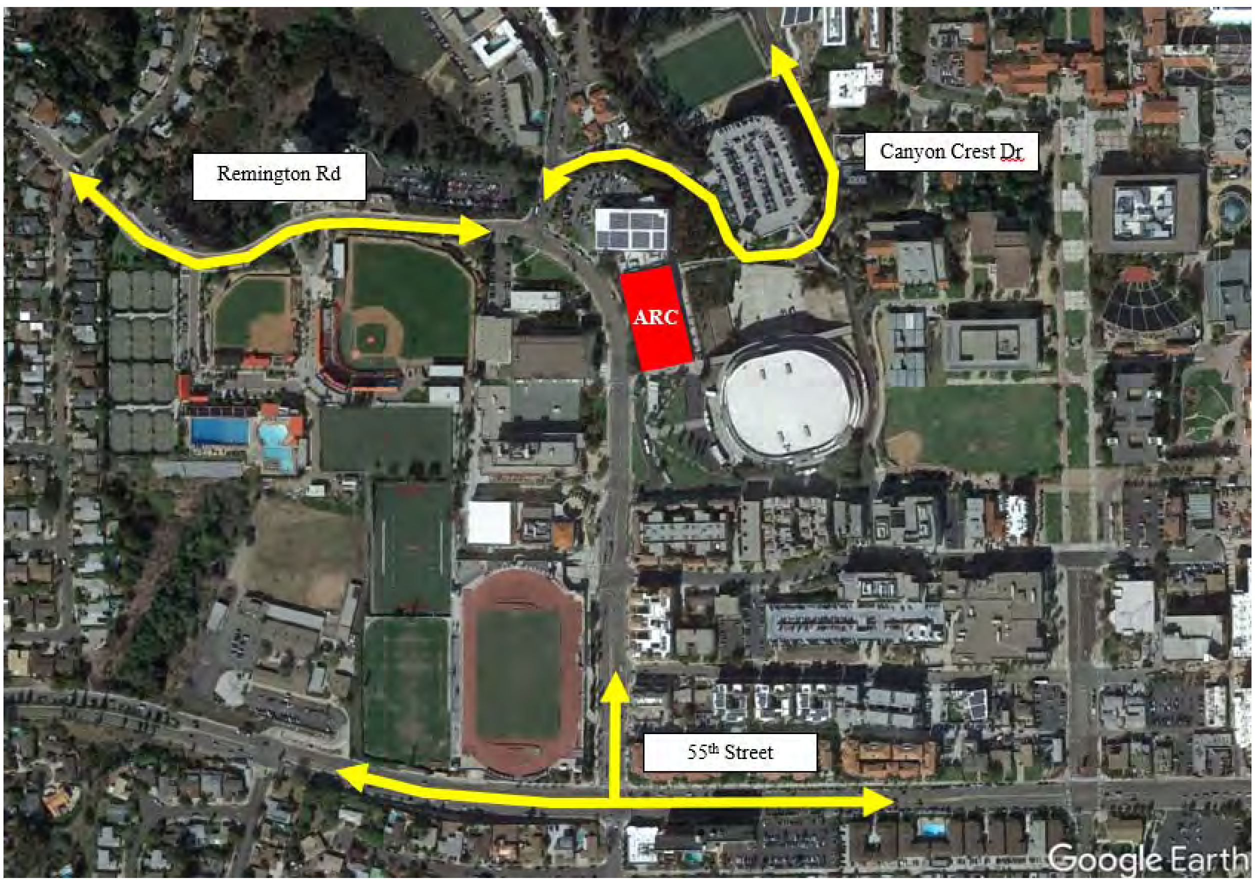
- ☐ Only destination at SDSU
- ☐ Secondary destination (i.e. I would be at SDSU anyways today)

2. How did you get to SDSU?

- ☐ Drove
- ☐ Carpooled
- ☐ Bus/Trolley
- ☐ Walked/Biked/Skateboard

3. If you drove, what route did you take? (See map)

- ☐ Via Remington Road
- ☐ Via Canyon Crest Drive
- ☐ Via 55th Street
- ☐ Other



Day/ Period	Participant	1		2				3				Primary+Drive
		Primary	Secondary	Drive	Carpool	Transit	Walk/Bike/Skate	Remington	Canyon	55th	Other	
8/30/18 Thursday AM (Jesus)	1	Y		Y						Y		1
	2		Y	Y					Y			
	3		Y	Y						Y		
	4	Y		Y						Y		1
	5	Y		Y						Y		1
	6	Y		Y					Y			1
	7		Y	Y						Y		
	8	Y		Y					Y			1
	9	Y					Y					
	10		Y	Y							Y	
	11		Y				Y					
	12		Y				Y					
	13		Y				Y					
	14		Y	Y					Y			
	15		Y	Y						Y		
	16		Y									
	17		Y	Y						Y		
	18		Y	Y					Y			
	19	Y					Y					
	20		Y				Y					
	21		Y				Y					
	22		Y				Y					
	23		Y				Y					
	24		Y				Y					
	25	Y					Y					
	26		Y	Y						Y		
	27		Y				Y					
	28		Y				Y					
	29	Y		Y					Y			1
	30		Y				Y					
	31		Y	Y						Y		
	32	Y		Y						Y		1
	33	Y					Y					
	34		Y	Y						Y		
	35		Y	Y						Y		

Day/ Period	Participant	1		2				3				Primary+Drive
		Primary	Secondary	Drive	Carpool	Transit	Walk/Bike/Skate	Remington	Canyon	55th	Other	
8/30/18 Thursday PM (Erika)	1		Y				Y					
	2	Y				Y						
	3		Y	Y					Y			
	4		Y				Y					
	5		Y	Y					Y			
	6		Y	Y							Y	
	7		Y	Y					Y			
	8	Y					Y					
	9		Y				Y					
	10		Y	Y					Y			
	11		Y				Y					
	12		Y	Y							Y	
	13	Y					Y					
	14		Y				Y					
	15		Y				Y					
	16		Y				Y					
	17		Y	Y							Y	
	18		Y	Y						Y		
	19		Y	Y					Y			
	20	Y		Y							Y	1
	21	Y		Y							Y	1
	22		Y				Y					
	23	Y		Y						Y		1
	24		Y				Y					
	25		Y				Y					
	26		Y	Y					Y			
	27	Y					Y					
	28		Y	Y						Y		
	29	Y		Y						Y		1
	30		Y				Y					
	31		Y				Y					
	32		Y	Y						Y		
	33		Y				Y					
	34		Y	Y						Y		
	35		Y				Y					
	36		Y	Y						Y		
	37		Y	Y					Y			
	38		Y				Y					
	39		Y	Y						Y		
	40		Y				Y					
	41	Y		Y						Y		1
	42		Y				Y					
	43		Y	Y						Y		
	44		Y				Y					
	45		Y				Y					
	46		Y				Y					
	47		Y				Y					
	48		Y	Y					Y			

Day/ Period	Participant	1		2				3				Primary+Drive
		Primary	Secondary	Drive	Carpool	Transit	Walk/Bike/Skate	Remington	Canyon	55th	Other	
8/31/18 Friday AM (Haley)	1	Y		Y						Y		1
	2	Y		Y						Y		1
	3		Y	Y						Y		
	4		Y	Y						Y		
	5		Y	Y					Y			
	6		Y	Y							Y	
	7		Y	Y						Y		
	8		Y	Y						Y		
	9		Y			Y						
	10		Y				Y					
	11		Y	Y						Y		
	12		Y				Y					
	13	Y					Y					
	14	Y		Y					Y			1
	15	Y					Y					
	16	Y		Y						Y		1
	17		Y	Y						Y		
	18		Y	Y					Y			
	19		Y	Y						Y		
	20		Y	Y						Y		
	21		Y	Y						Y		
	22		Y	Y							Y	
	23		Y	Y					Y			
	24		Y	Y						Y		
	25	Y					Y					
	26		Y				Y					
	27		Y				Y					
	28	Y		Y						Y		1
	29	Y		Y						Y		1
	30		Y	Y						Y		
	31		Y				Y					
	32		Y				Y					
	33		Y				Y					
	34		Y	Y						Y		
	35		Y	Y					Y			
	36	Y		Y					Y			1
	37		Y	Y				Y				
	38	Y					Y					
	39		Y				Y					
	40		Y				Y					
	41	Y		Y						Y		1
	42	Y					Y					
	43		Y	Y						Y		
	44	Y		Y						Y		1
	45	Y		Y						Y		1

Day/ Period	Participant	1		2				3				Primary+Drive
		Primary	Secondary	Drive	Carpool	Transit	Walk/Bike/Skate	Remington	Canyon	55th	Other	
8/31/18 Friday PM (Jack)	1	Y					Y					
	2	Y					Y					
	3		Y				Y					
	4		Y	Y						Y		
	5		Y	Y					Y			
	6		Y			Y						
	7		Y				Y					
	8		Y				Y					
	9		Y				Y					
	10		Y				Y					
	11		Y				Y					
	12		Y				Y					
	13		Y	Y					Y			
	14		Y				Y					
	15	Y					Y					
	16	Y		Y						Y		1
	17		Y				Y					
	18	Y					Y					
	19	Y					Y					
	20	Y					Y					
	21	Y					Y					
	22	Y					Y					
	23		Y				Y					
	24		Y				Y					
	25	Y					Y					
	26	Y		Y					Y			1
	27		Y	Y					Y			
	28	Y					Y					
	29		Y				Y					
	30		Y				Y					
	31		Y				Y					
	32	Y					Y					
	33	Y				Y						
	34	Y		Y						Y		1
	35		Y	Y					Y			
	36		Y				Y					
	37		Y				Y					
	38		Y				Y					
	39		Y				Y					
	40		Y				Y					
	41		Y				Y					
	42		Y				Y					
	43		Y				Y					
	44	Y		Y						Y		1
	45	Y					Y					
	46	Y					Y					
	47	Y					Y					
	48		Y	Y					Y			
	49		Y				Y					
	50		Y	Y						Y		
	51		Y	Y					Y			
	52		Y	Y						Y		
	53		Y				Y					
	54		Y	Y						Y		
	55		Y	Y						Y		
	56		Y				Y					
	57		Y				Y					
	58	Y					Y					
	59	Y					Y					
	60	Y					Y					
	61	Y					Y					
	62	Y					Y					
	63	Y					Y					
	64		Y				Y					
	65	Y					Y					
	66		Y	Y						Y		
	67	Y					Y					
	68		Y				Y					
	69		Y				Y					
	70	Y					Y					
	71	Y			Y			Y				
	72		Y	Y				Y				
	73	Y					Y					
	74	Y		Y						Y		1
	75		Y	Y						Y		
	76	Y					Y					
	77	Y					Y					
	78	Y					Y					
	79		Y				Y					
	80	Y					Y					
	81	Y		Y						Y		1

APPENDIX

TRIP GENERATION CALCULATIONS

Visitors Entering	Tue-Thur Average*	With 50% Increase	Increase	New Trips In 15.0%	New Trips Out	Total Trips
Daily	3950	5925	1975	297	297	594
AM PH	180	270	90	14	10	24
PM PH	305	460	155	24	16	40

*Average of all Tuesday, Wednesday and Thursday data throughout the Month of February 2018.

% Primary-Driving Trips (Source: Survey)

28	of	209	
		13.4%	Use 15%

In:Out Ratio for Health Club (Source: SANDAG)

AM	6:4	$Out\ Trips = 14 * 4/6 = 10$
PM	6:4	$Out\ Trips = 24 * 4/6 = 16$

APPENDIX I

EXISTING + PROJECT INTERSECTION ANALYSIS WORKSHEETS

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	31	52	51	562	77	19
Future Volume (veh/h)	31	52	51	562	77	19
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.89	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1900
Adj Flow Rate, veh/h	38	64	63	694	59	62
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	0
Cap, veh/h	48	910	774	1246	742	671
Arrive On Green	0.03	0.49	0.41	0.41	0.42	0.42
Sat Flow, veh/h	1781	1870	1870	1416	1781	1610
Grp Volume(v), veh/h	38	64	63	694	59	62
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1416	1781	1610
Q Serve(g_s), s	2.0	1.7	2.0	6.7	1.9	2.2
Cycle Q Clear(g_c), s	2.0	1.7	2.0	6.7	1.9	2.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	48	910	774	1246	742	671
V/C Ratio(X)	0.79	0.07	0.08	0.56	0.08	0.09
Avail Cap(c_a), veh/h	178	910	774	1246	742	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.96	0.96	1.00	1.00
Uniform Delay (d), s/veh	46.4	13.1	17.1	0.5	16.9	17.0
Incr Delay (d2), s/veh	10.4	0.1	0.2	1.7	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.8	0.9	20.4	0.8	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	56.9	13.3	17.3	2.2	17.1	17.3
LnGrp LOS	E	B	B	A	B	B
Approach Vol, veh/h		102	757		121	
Approach Delay, s/veh		29.5	3.5		17.2	
Approach LOS		C	A		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		51.6		44.4	7.0	44.6
Change Period (Y+Rc), s		4.9		4.4	4.4	4.9
Max Green Setting (Gmax), s		46.7		40.0	9.6	32.7
Max Q Clear Time (g_c+I1), s		3.7		4.2	4.0	8.7
Green Ext Time (p_c), s		0.1		0.3	0.0	3.0

Intersection Summary		
HCM 6th Ctrl Delay		7.9
HCM 6th LOS		A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	586	0	0	223
Future Volume (vph)	0	0	586	0	0	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.9			4.9
Lane Util. Factor			0.95			0.95
Frpb, ped/bikes			1.00			1.00
Flpb, ped/bikes			1.00			1.00
Frt			1.00			1.00
Flt Protected			1.00			1.00
Satd. Flow (prot)			3539			3539
Flt Permitted			1.00			1.00
Satd. Flow (perm)			3539			3539
Peak-hour factor, PHF	0.73	0.73	0.73	0.73	0.73	0.73
Adj. Flow (vph)	0	0	803	0	0	305
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	803	0	0	305
Confl. Peds. (#/hr)		483		37		
Confl. Bikes (#/hr)		10		10		
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases						
Actuated Green, G (s)			71.8			71.8
Effective Green, g (s)			71.8			71.8
Actuated g/C Ratio			0.75			0.75
Clearance Time (s)			4.9			4.9
Vehicle Extension (s)			3.6			3.4
Lane Grp Cap (vph)			2646			2646
v/s Ratio Prot			c0.23			0.09
v/s Ratio Perm						
v/c Ratio			0.30			0.12
Uniform Delay, d1			3.9			3.3
Progression Factor			0.39			0.81
Incremental Delay, d2			0.3			0.1
Delay (s)			1.8			2.8
Level of Service			A			A
Approach Delay (s)	0.0		1.8			2.8
Approach LOS	A		A			A

Intersection Summary			
HCM 2000 Control Delay	2.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1	2	2	0	4	0	582	20	5	227	4
Future Volume (vph)	0	1	2	2	0	4	0	582	20	5	227	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9			4.9			4.9			4.9	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.76			0.98			0.99			0.99	
Flpb, ped/bikes		1.00			0.89			1.00			1.00	
Frt		0.90			0.92			1.00			1.00	
Flt Protected		1.00			0.98			1.00			1.00	
Satd. Flow (prot)		1278			1460			3481			3491	
Flt Permitted		1.00			0.94			1.00			0.94	
Satd. Flow (perm)		1278			1395			3481			3287	
Peak-hour factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	0	1	3	3	0	5	0	766	26	7	299	5
RTOR Reduction (vph)	0	3	0	0	7	0	0	2	0	0	1	0
Lane Group Flow (vph)	0	1	0	0	1	0	0	790	0	0	310	0
Confl. Peds. (#/hr)			228	228					111	111		160
Confl. Bikes (#/hr)			10			10			10			10
Turn Type		NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Actuated Green, G (s)		14.4			14.4			71.8			71.8	
Effective Green, g (s)		14.4			14.4			71.8			71.8	
Actuated g/C Ratio		0.15			0.15			0.75			0.75	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			3.6			3.4	
Lane Grp Cap (vph)		191			209			2603			2458	
v/s Ratio Prot		c0.00						c0.23				
v/s Ratio Perm					0.00						0.09	
v/c Ratio		0.01			0.01			0.30			0.13	
Uniform Delay, d1		34.7			34.7			3.9			3.4	
Progression Factor		1.00			1.00			1.00			0.58	
Incremental Delay, d2		0.0			0.0			0.3			0.1	
Delay (s)		34.7			34.7			4.2			2.1	
Level of Service		C			C			A			A	
Approach Delay (s)		34.7			34.7			4.2			2.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	22	59	42	63	123	550	0	0	126	16
Future Volume (veh/h)	4	0	22	59	42	63	123	550	0	0	126	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.90	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h	5	0	25	62	55	72	140	625	0	0	143	18
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	0	2	2	2	2	2	2	0	0	2	2
Cap, veh/h	0	0	0	261	275	209	168	2756	0	0	2297	1004
Arrive On Green	0.00	0.00	0.00	0.15	0.15	0.15	0.03	0.26	0.00	0.00	0.65	0.65
Sat Flow, veh/h		0		1781	1870	1424	1781	3647	0	0	3647	1553
Grp Volume(v), veh/h		0.0		62	55	72	140	625	0	0	143	18
Grp Sat Flow(s),veh/h/ln				1781	1870	1424	1781	1777	0	0	1777	1553
Q Serve(g_s), s				3.9	3.3	5.7	9.9	17.5	0.0	0.0	1.9	0.5
Cycle Q Clear(g_c), s				3.9	3.3	5.7	9.9	17.5	0.0	0.0	1.9	0.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				261	275	209	168	2756	0	0	2297	1004
V/C Ratio(X)				0.24	0.20	0.34	0.84	0.23	0.00	0.00	0.06	0.02
Avail Cap(c_a), veh/h				440	462	352	249	2756	0	0	2297	1004
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.67	0.67	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				47.5	47.3	48.3	60.1	17.0	0.0	0.0	8.2	8.0
Incr Delay (d2), s/veh				0.2	0.1	0.4	6.6	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.8	1.6	2.1	5.1	8.4	0.0	0.0	0.7	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				47.7	47.4	48.7	66.7	17.2	0.0	0.0	8.3	8.0
LnGrp LOS				D	D	D	E	B	A	A	A	A
Approach Vol, veh/h					189			765			161	
Approach Delay, s/veh					48.0			26.2			8.2	
Approach LOS					D			C			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		102.6			16.2	86.4		23.4				
Change Period (Y+Rc), s		4.9			4.4	4.9		4.9				
Max Green Setting (Gmax), s		51.1			17.6	29.1		31.1				
Max Q Clear Time (g_c+I1), s		19.5			11.9	3.9		7.7				
Green Ext Time (p_c), s		5.6			0.1	1.1		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			27.3									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	34	674	1193	6	14	103
Future Volume (veh/h)	34	674	1193	6	14	103
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1900	1900
Adj Flow Rate, veh/h	35	702	1243	6	15	107
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	45	2813	2653	13	22	160
Arrive On Green	0.03	0.79	0.73	0.73	0.12	0.12
Sat Flow, veh/h	1781	3647	3719	18	195	1389
Grp Volume(v), veh/h	35	702	609	640	123	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1867	1597	0
Q Serve(g_s), s	2.5	6.5	17.6	17.6	9.3	0.0
Cycle Q Clear(g_c), s	2.5	6.5	17.6	17.6	9.3	0.0
Prop In Lane	1.00			0.01	0.12	0.87
Lane Grp Cap(c), veh/h	45	2813	1300	1366	184	0
V/C Ratio(X)	0.78	0.25	0.47	0.47	0.67	0.00
Avail Cap(c_a), veh/h	107	2813	1300	1366	430	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	61.1	3.4	6.9	6.9	53.4	0.0
Incr Delay (d2), s/veh	10.6	0.2	1.2	1.2	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.8	5.9	6.1	3.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	71.7	3.6	8.1	8.1	55.0	0.0
LnGrp LOS	E	A	A	A	D	A
Approach Vol, veh/h		737	1249		123	
Approach Delay, s/veh		6.9	8.1		55.0	
Approach LOS		A	A		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		106.4		19.6	7.6	98.8
Change Period (Y+Rc), s		* 6.6		5.1	4.4	6.6
Max Green Setting (Gmax), s		* 81		33.9	7.6	68.4
Max Q Clear Time (g_c+I1), s		8.5		11.3	4.5	19.6
Green Ext Time (p_c), s		14.5		0.2	0.0	29.1

Intersection Summary			
HCM 6th Ctrl Delay			10.4
HCM 6th LOS			B

Notes
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	556	352	26	15	633	303	48	14	21	111	4	135
Future Volume (veh/h)	556	352	26	15	633	303	48	14	21	111	4	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.83	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	639	405	30	17	728	348	55	16	24	132	0	155
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	691	1668	123	25	1112	481	204	59	89	415	0	179
Arrive On Green	0.20	0.50	0.50	0.01	0.31	0.31	0.21	0.21	0.21	0.12	0.00	0.12
Sat Flow, veh/h	3456	3345	247	1781	3554	1539	953	277	416	3563	0	1536
Grp Volume(v), veh/h	639	214	221	17	728	348	95	0	0	132	0	155
Grp Sat Flow(s),veh/h/ln	1728	1777	1815	1781	1777	1539	1646	0	0	1781	0	1536
Q Serve(g_s), s	22.9	8.7	8.8	1.2	22.3	25.3	6.1	0.0	0.0	4.3	0.0	12.5
Cycle Q Clear(g_c), s	22.9	8.7	8.8	1.2	22.3	25.3	6.1	0.0	0.0	4.3	0.0	12.5
Prop In Lane	1.00		0.14	1.00		1.00	0.58		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	691	886	905	25	1112	481	352	0	0	415	0	179
V/C Ratio(X)	0.92	0.24	0.24	0.67	0.65	0.72	0.27	0.00	0.00	0.32	0.00	0.87
Avail Cap(c_a), veh/h	719	886	905	57	1112	481	392	0	0	447	0	193
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.5	18.0	18.0	61.8	37.4	38.4	41.4	0.0	0.0	51.1	0.0	54.7
Incr Delay (d2), s/veh	16.9	0.6	0.6	10.8	3.0	9.1	0.2	0.0	0.0	0.5	0.0	30.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	3.7	3.8	0.6	10.1	10.6	2.5	0.0	0.0	2.0	0.0	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.4	18.7	18.7	72.6	40.4	47.5	41.5	0.0	0.0	51.5	0.0	85.0
LnGrp LOS	E	B	B	E	D	D	D	A	A	D	A	F
Approach Vol, veh/h		1074			1093			95			287	
Approach Delay, s/veh		47.1			43.2			41.5			69.6	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	68.4		19.6	29.6	45.0		31.8				
Change Period (Y+Rc), s	4.4	5.6		4.9	4.4	* 5.6		4.9				
Max Green Setting (Gmax), s	4.0	56.4		15.8	26.2	* 35		30.0				
Max Q Clear Time (g_c+I1), s	3.2	10.8		14.5	24.9	27.3		8.1				
Green Ext Time (p_c), s	0.0	4.0		0.2	0.3	4.2		0.2				

Intersection Summary			
HCM 6th Ctrl Delay			47.7
HCM 6th LOS			D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	79	79	218	374	41
Future Volume (veh/h)	21	79	79	218	374	41
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.88	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1900
Adj Flow Rate, veh/h	23	88	88	242	459	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	0
Cap, veh/h	39	1199	1001	1032	648	293
Arrive On Green	0.02	0.64	0.54	0.54	0.18	0.00
Sat Flow, veh/h	1781	1870	1870	1388	3563	1610
Grp Volume(v), veh/h	23	88	88	242	459	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1388	1781	1610
Q Serve(g_s), s	0.7	0.9	1.2	1.2	6.4	0.0
Cycle Q Clear(g_c), s	0.7	0.9	1.2	1.2	6.4	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	39	1199	1001	1032	648	293
V/C Ratio(X)	0.59	0.07	0.09	0.23	0.71	0.00
Avail Cap(c_a), veh/h	190	1357	1001	1032	1534	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.4	3.6	5.9	0.4	20.2	0.0
Incr Delay (d2), s/veh	5.3	0.0	0.2	0.5	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.2	0.4	4.0	2.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.8	3.6	6.1	0.9	20.7	0.0
LnGrp LOS	C	A	A	A	C	A
Approach Vol, veh/h		111	330		459	
Approach Delay, s/veh		9.2	2.3		20.7	
Approach LOS		A	A		C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		38.5		14.0	5.5	33.0
Change Period (Y+Rc), s		4.9		4.4	4.4	4.9
Max Green Setting (Gmax), s		38.1		22.6	5.6	28.1
Max Q Clear Time (g_c+I1), s		2.9		8.4	2.7	3.2
Green Ext Time (p_c), s		0.2		1.2	0.0	1.0

Intersection Summary			
HCM 6th Ctrl Delay			12.5
HCM 6th LOS			B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	312	0	0	560
Future Volume (vph)	0	0	312	0	0	560
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.9			4.9
Lane Util. Factor			0.95			0.95
Frpb, ped/bikes			1.00			1.00
Flpb, ped/bikes			1.00			1.00
Frt			1.00			1.00
Flt Protected			1.00			1.00
Satd. Flow (prot)			3539			3539
Flt Permitted			1.00			1.00
Satd. Flow (perm)			3539			3539
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	332	0	0	596
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	332	0	0	596
Confl. Peds. (#/hr)		307		37		
Confl. Bikes (#/hr)		10		10		
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases						
Actuated Green, G (s)			46.0			46.0
Effective Green, g (s)			46.0			46.0
Actuated g/C Ratio			0.69			0.69
Clearance Time (s)			4.9			4.9
Vehicle Extension (s)			3.6			3.4
Lane Grp Cap (vph)			2429			2429
v/s Ratio Prot			0.09			c0.17
v/s Ratio Perm						
v/c Ratio			0.14			0.25
Uniform Delay, d1			3.6			4.0
Progression Factor			0.74			1.00
Incremental Delay, d2			0.1			0.2
Delay (s)			2.8			4.2
Level of Service			A			A
Approach Delay (s)	0.0		2.8			4.2
Approach LOS	A		A			A

Intersection Summary			
HCM 2000 Control Delay	3.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	1	9	3	1	0	310	22	6	567	1
Future Volume (vph)	1	1	1	9	3	1	0	310	22	6	567	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9			4.9			4.9			4.9	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.91			0.98			0.98			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.95			0.99			0.99			1.00	
Flt Protected		0.98			0.97			1.00			1.00	
Satd. Flow (prot)		1592			1741			3420			3526	
Flt Permitted		0.94			0.85			1.00			0.95	
Satd. Flow (perm)		1523			1536			3420			3357	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1	1	1	10	3	1	0	344	24	7	630	1
RTOR Reduction (vph)	0	1	0	0	1	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	2	0	0	13	0	0	363	0	0	638	0
Confl. Peds. (#/hr)			268			268			170	170		154
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Actuated Green, G (s)		11.2			11.2			46.0			46.0	
Effective Green, g (s)		11.2			11.2			46.0			46.0	
Actuated g/C Ratio		0.17			0.17			0.69			0.69	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			3.6			3.4	
Lane Grp Cap (vph)		254			256			2348			2304	
v/s Ratio Prot								0.11				
v/s Ratio Perm		0.00			c0.01						c0.19	
v/c Ratio		0.01			0.05			0.15			0.28	
Uniform Delay, d1		23.3			23.4			3.7			4.1	
Progression Factor		1.00			1.00			0.55			0.44	
Incremental Delay, d2		0.0			0.0			0.1			0.3	
Delay (s)		23.3			23.5			2.2			2.1	
Level of Service		C			C			A			A	
Approach Delay (s)		23.3			23.5			2.2			2.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	2.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	0	140	179	27	58	71	241	0	0	440	16
Future Volume (veh/h)	22	0	140	179	27	58	71	241	0	0	440	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.87	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h	23	0	146	186	28	60	74	251	0	0	458	17
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	0	2	2	2	2	2	2	0	0	2	2
Cap, veh/h	0	0	0	624	84	179	181	2672	0	0	2194	944
Arrive On Green	0.00	0.00	0.00	0.18	0.18	0.18	0.03	0.25	0.00	0.00	0.62	0.62
Sat Flow, veh/h		0		3563	478	1023	1781	3647	0	0	3647	1528
Grp Volume(v), veh/h		0.0		186	0	88	74	251	0	0	458	17
Grp Sat Flow(s),veh/h/ln				1781	0	1501	1781	1777	0	0	1777	1528
Q Serve(g_s), s				6.1	0.0	6.9	5.5	7.3	0.0	0.0	7.6	0.6
Cycle Q Clear(g_c), s				6.1	0.0	6.9	5.5	7.3	0.0	0.0	7.6	0.6
Prop In Lane				1.00		0.68	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				624	0	263	181	2672	0	0	2194	944
V/C Ratio(X)				0.30	0.00	0.33	0.41	0.09	0.00	0.00	0.21	0.02
Avail Cap(c_a), veh/h				827	0	348	181	2672	0	0	2194	944
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.85	0.85	0.00	0.00	0.97	0.97
Uniform Delay (d), s/veh				48.1	0.0	48.4	60.8	15.2	0.0	0.0	11.3	9.9
Incr Delay (d2), s/veh				0.1	0.0	0.3	5.7	0.1	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.8	0.0	2.6	2.9	3.2	0.0	0.0	3.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				48.2	0.0	48.7	66.6	15.3	0.0	0.0	11.5	9.9
LnGrp LOS				D	A	D	E	B	A	A	B	A
Approach Vol, veh/h					274			325			475	
Approach Delay, s/veh					48.4			27.0			11.4	
Approach LOS					D			C			B	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		105.6			18.0	87.6		28.4				
Change Period (Y+Rc), s		4.9			4.4	4.9		4.9				
Max Green Setting (Gmax), s		57.1			13.6	39.1		31.1				
Max Q Clear Time (g_c+I1), s		9.3			7.5	9.6		8.9				
Green Ext Time (p_c), s		2.1			0.0	4.1		0.7				

Intersection Summary			
HCM 6th Ctrl Delay			25.5
HCM 6th LOS			C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	120	1426	1088	59	9	59
Future Volume (veh/h)	120	1426	1088	59	9	59
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1900	1900
Adj Flow Rate, veh/h	122	1455	1110	60	9	60
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	146	2944	2441	132	17	115
Arrive On Green	0.08	0.83	0.71	0.71	0.08	0.08
Sat Flow, veh/h	1781	3647	3515	185	204	1359
Grp Volume(v), veh/h	122	1455	576	594	70	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1830	1586	0
Q Serve(g_s), s	9.0	15.9	18.4	18.5	5.7	0.0
Cycle Q Clear(g_c), s	9.0	15.9	18.4	18.5	5.7	0.0
Prop In Lane	1.00			0.10	0.13	0.86
Lane Grp Cap(c), veh/h	146	2944	1267	1305	134	0
V/C Ratio(X)	0.83	0.49	0.45	0.45	0.52	0.00
Avail Cap(c_a), veh/h	261	2944	1267	1305	378	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	60.6	3.3	8.1	8.2	58.8	0.0
Incr Delay (d2), s/veh	4.7	0.6	1.2	1.1	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	4.0	6.5	6.7	2.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	65.2	3.9	9.3	9.3	59.9	0.0
LnGrp LOS	E	A	A	A	E	A
Approach Vol, veh/h		1577	1170		70	
Approach Delay, s/veh		8.7	9.3		59.9	
Approach LOS		A	A		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		117.6		16.4	15.4	102.2
Change Period (Y+Rc), s		* 6.6		5.1	4.4	6.6
Max Green Setting (Gmax), s		* 91		31.9	19.6	60.0
Max Q Clear Time (g_c+I1), s		17.9		7.7	11.0	20.5
Green Ext Time (p_c), s		44.9		0.1	0.1	23.7

Intersection Summary						
HCM 6th Ctrl Delay			10.2			
HCM 6th LOS			B			

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	282	929	78	21	577	156	38	13	9	274	17	419
Future Volume (veh/h)	282	929	78	21	577	156	38	13	9	274	17	419
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	1.00		0.72	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	300	988	83	22	614	166	40	14	10	304	0	446
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	357	1109	93	30	885	373	227	79	57	1000	0	436
Arrive On Green	0.10	0.34	0.34	0.02	0.25	0.25	0.22	0.22	0.22	0.28	0.00	0.28
Sat Flow, veh/h	3456	3304	278	1781	3554	1500	1034	362	259	3563	0	1553
Grp Volume(v), veh/h	300	531	540	22	614	166	64	0	0	304	0	446
Grp Sat Flow(s),veh/h/ln	1728	1777	1805	1781	1777	1500	1655	0	0	1781	0	1553
Q Serve(g_s), s	11.4	38.0	38.0	1.6	21.0	12.5	4.2	0.0	0.0	9.0	0.0	37.6
Cycle Q Clear(g_c), s	11.4	38.0	38.0	1.6	21.0	12.5	4.2	0.0	0.0	9.0	0.0	37.6
Prop In Lane	1.00		0.15	1.00		1.00	0.62		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	357	596	606	30	885	373	363	0	0	1000	0	436
V/C Ratio(X)	0.84	0.89	0.89	0.74	0.69	0.44	0.18	0.00	0.00	0.30	0.00	1.02
Avail Cap(c_a), veh/h	505	596	606	82	885	373	370	0	0	1000	0	436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.90	0.00	0.90
Uniform Delay (d), s/veh	59.0	42.2	42.2	65.6	45.7	42.5	42.5	0.0	0.0	37.9	0.0	48.2
Incr Delay (d2), s/veh	6.1	18.0	17.8	12.5	4.5	3.8	0.1	0.0	0.0	0.2	0.0	46.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	19.4	19.7	0.8	9.8	5.0	1.8	0.0	0.0	4.0	0.0	20.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	60.2	60.0	78.1	50.2	46.3	42.6	0.0	0.0	38.1	0.0	95.1
LnGrp LOS	E	E	E	E	D	D	D	A	A	D	A	F
Approach Vol, veh/h		1371			802			64			750	
Approach Delay, s/veh		61.2			50.1			42.6			72.0	
Approach LOS		E			D			D			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.6	50.6		42.5	18.3	39.0		34.3
Change Period (Y+Rc), s	4.4	5.6		4.9	4.4	* 5.6		4.9
Max Green Setting (Gmax), s	6.2	40.4		37.6	19.6	* 28		30.0
Max Q Clear Time (g_c+I1), s	3.6	40.0		39.6	13.4	23.0		6.2
Green Ext Time (p_c), s	0.0	0.3		0.0	0.4	2.2		0.1

Intersection Summary		
HCM 6th Ctrl Delay		60.5
HCM 6th LOS		E

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

APPENDIX J

EXISTING + CUMULATIVE PROJECTS INTERSECTION ANALYSIS WORKSHEETS

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	33	53	53	622	106	20
Future Volume (veh/h)	33	53	53	622	106	20
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.89	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1900
Adj Flow Rate, veh/h	41	65	65	768	154	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	0
Cap, veh/h	52	910	770	1243	1484	671
Arrive On Green	0.03	0.49	0.41	0.41	0.42	0.00
Sat Flow, veh/h	1781	1870	1870	1416	3563	1610
Grp Volume(v), veh/h	41	65	65	768	154	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1416	1781	1610
Q Serve(g_s), s	2.2	1.8	2.0	8.5	2.5	0.0
Cycle Q Clear(g_c), s	2.2	1.8	2.0	8.5	2.5	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	52	910	770	1243	1484	671
V/C Ratio(X)	0.79	0.07	0.08	0.62	0.10	0.00
Avail Cap(c_a), veh/h	178	910	770	1243	1484	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.95	0.95	1.00	0.00
Uniform Delay (d), s/veh	46.3	13.1	17.2	0.6	17.1	0.0
Incr Delay (d2), s/veh	9.4	0.2	0.2	2.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.8	0.9	22.8	1.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	55.7	13.3	17.4	2.8	17.2	0.0
LnGrp LOS	E	B	B	A	B	A
Approach Vol, veh/h		106	833		154	
Approach Delay, s/veh		29.7	3.9		17.2	
Approach LOS		C	A		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		51.6		44.4	7.2	44.4
Change Period (Y+Rc), s		4.9		4.4	4.4	4.9
Max Green Setting (Gmax), s		46.7		40.0	9.6	32.7
Max Q Clear Time (g_c+I1), s		3.8		4.5	4.2	10.5
Green Ext Time (p_c), s		0.1		0.4	0.0	3.4

Intersection Summary						
HCM 6th Ctrl Delay			8.3			
HCM 6th LOS			A			

Notes

User approved volume balancing among the lanes for turning movement.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	6	643	0	0	252
Future Volume (vph)	13	6	643	0	0	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9		4.9			4.9
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.88		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.96		1.00			1.00
Flt Protected	0.97		1.00			1.00
Satd. Flow (prot)	1511		3539			3539
Flt Permitted	0.97		1.00			1.00
Satd. Flow (perm)	1511		3539			3539
Peak-hour factor, PHF	0.73	0.73	0.73	0.73	0.73	0.73
Adj. Flow (vph)	18	8	881	0	0	345
RTOR Reduction (vph)	7	0	0	0	0	0
Lane Group Flow (vph)	19	0	881	0	0	345
Confl. Peds. (#/hr)		483		37		
Confl. Bikes (#/hr)		10		10		
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases						
Actuated Green, G (s)	14.4		71.8			71.8
Effective Green, g (s)	14.4		71.8			71.8
Actuated g/C Ratio	0.15		0.75			0.75
Clearance Time (s)	4.9		4.9			4.9
Vehicle Extension (s)	2.0		3.6			3.4
Lane Grp Cap (vph)	226		2646			2646
v/s Ratio Prot	c0.01		c0.25			0.10
v/s Ratio Perm						
v/c Ratio	0.08		0.33			0.13
Uniform Delay, d1	35.1		4.1			3.4
Progression Factor	1.00		0.38			0.85
Incremental Delay, d2	0.1		0.3			0.1
Delay (s)	35.2		1.9			3.0
Level of Service	D		A			A
Approach Delay (s)	35.2		1.9			3.0
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	2.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1	2	2	0	4	0	639	20	5	256	4
Future Volume (vph)	0	1	2	2	0	4	0	639	20	5	256	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9			4.9			4.9			4.9	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.76			0.98			0.99			0.99	
Flpb, ped/bikes		1.00			0.89			1.00			1.00	
Frt		0.90			0.92			1.00			1.00	
Flt Protected		1.00			0.98			1.00			1.00	
Satd. Flow (prot)		1278			1460			3486			3497	
Flt Permitted		1.00			0.94			1.00			0.94	
Satd. Flow (perm)		1278			1395			3486			3292	
Peak-hour factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	0	1	3	3	0	5	0	841	26	7	337	5
RTOR Reduction (vph)	0	3	0	0	7	0	0	2	0	0	1	0
Lane Group Flow (vph)	0	1	0	0	1	0	0	865	0	0	348	0
Confl. Peds. (#/hr)			228	228					111	111		160
Confl. Bikes (#/hr)			10			10			10			10
Turn Type		NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Actuated Green, G (s)		14.4			14.4			71.8			71.8	
Effective Green, g (s)		14.4			14.4			71.8			71.8	
Actuated g/C Ratio		0.15			0.15			0.75			0.75	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			3.6			3.4	
Lane Grp Cap (vph)		191			209			2607			2462	
v/s Ratio Prot		c0.00						c0.25				
v/s Ratio Perm					0.00						0.11	
v/c Ratio		0.01			0.01			0.33			0.14	
Uniform Delay, d1		34.7			34.7			4.1			3.4	
Progression Factor		1.00			1.00			1.00			0.55	
Incremental Delay, d2		0.0			0.0			0.3			0.1	
Delay (s)		34.7			34.7			4.4			2.0	
Level of Service		C			C			A			A	
Approach Delay (s)		34.7			34.7			4.4			2.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	22	63	42	63	123	607	0	0	155	16
Future Volume (veh/h)	4	0	22	63	42	63	123	607	0	0	155	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.93	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h	5	0	25	64	59	72	140	690	0	0	176	18
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	0	2	2	2	2	2	2	0	0	2	2
Cap, veh/h	0	0	0	440	462	366	168	2400	0	0	1941	847
Arrive On Green	0.00	0.00	0.00	0.25	0.25	0.25	0.03	0.22	0.00	0.00	0.55	0.55
Sat Flow, veh/h		0		1781	1870	1481	1781	3647	0	0	3647	1551
Grp Volume(v), veh/h		0.0		64	59	72	140	690	0	0	176	18
Grp Sat Flow(s),veh/h/ln				1781	1870	1481	1781	1777	0	0	1777	1551
Q Serve(g_s), s				3.5	3.1	4.8	9.9	20.3	0.0	0.0	3.0	0.7
Cycle Q Clear(g_c), s				3.5	3.1	4.8	9.9	20.3	0.0	0.0	3.0	0.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				440	462	366	168	2400	0	0	1941	847
V/C Ratio(X)				0.15	0.13	0.20	0.83	0.29	0.00	0.00	0.09	0.02
Avail Cap(c_a), veh/h				440	462	366	277	2400	0	0	1941	847
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.64	0.64	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				37.1	36.9	37.6	60.1	23.8	0.0	0.0	13.6	13.1
Incr Delay (d2), s/veh				0.7	0.6	1.2	3.0	0.2	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.7	1.5	1.9	4.9	9.8	0.0	0.0	1.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				37.8	37.5	38.8	63.1	24.0	0.0	0.0	13.7	13.2
LnGrp LOS				D	D	D	E	C	A	A	B	B
Approach Vol, veh/h					195			830			194	
Approach Delay, s/veh					38.0			30.6			13.7	
Approach LOS					D			C			B	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		90.0			16.3	73.7		36.0				
Change Period (Y+Rc), s		4.9			4.4	4.9		4.9				
Max Green Setting (Gmax), s		51.1			19.6	27.1		31.1				
Max Q Clear Time (g_c+I1), s		22.3			11.9	5.0		6.8				
Green Ext Time (p_c), s		6.2			0.1	1.3		0.6				

Intersection Summary			
HCM 6th Ctrl Delay			29.1
HCM 6th LOS			C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	33	762	1287	6	14	103
Future Volume (veh/h)	33	762	1287	6	14	103
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1900	1900
Adj Flow Rate, veh/h	34	794	1341	6	15	107
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	43	2813	2657	12	22	160
Arrive On Green	0.02	0.79	0.73	0.73	0.12	0.12
Sat Flow, veh/h	1781	3647	3721	16	195	1389
Grp Volume(v), veh/h	34	794	657	690	123	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1867	1597	0
Q Serve(g_s), s	2.4	7.6	19.8	19.8	9.3	0.0
Cycle Q Clear(g_c), s	2.4	7.6	19.8	19.8	9.3	0.0
Prop In Lane	1.00			0.01	0.12	0.87
Lane Grp Cap(c), veh/h	43	2813	1302	1367	184	0
V/C Ratio(X)	0.79	0.28	0.50	0.50	0.67	0.00
Avail Cap(c_a), veh/h	107	2813	1302	1367	430	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	61.1	3.5	7.2	7.2	53.4	0.0
Incr Delay (d2), s/veh	11.0	0.3	1.4	1.3	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.1	6.6	6.9	3.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	72.2	3.8	8.6	8.5	55.0	0.0
LnGrp LOS	E	A	A	A	D	A
Approach Vol, veh/h		828	1347		123	
Approach Delay, s/veh		6.6	8.5		55.0	
Approach LOS		A	A		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		106.4		19.6	7.5	98.9
Change Period (Y+Rc), s		* 6.6		5.1	4.4	6.6
Max Green Setting (Gmax), s		* 81		33.9	7.6	68.4
Max Q Clear Time (g_c+I1), s		9.6		11.3	4.4	21.8
Green Ext Time (p_c), s		17.3		0.2	0.0	31.1

Intersection Summary			
HCM 6th Ctrl Delay			10.3
HCM 6th LOS			B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	605	390	27	15	700	326	50	14	22	120	3	160
Future Volume (veh/h)	605	390	27	15	700	326	50	14	22	120	3	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.83	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	695	448	31	17	805	375	57	16	25	140	0	184
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	749	1646	113	25	1019	441	205	57	90	447	0	193
Arrive On Green	0.22	0.49	0.49	0.01	0.29	0.29	0.21	0.21	0.21	0.13	0.00	0.13
Sat Flow, veh/h	3456	3363	232	1781	3554	1536	957	269	420	3563	0	1538
Grp Volume(v), veh/h	695	236	243	17	805	375	98	0	0	140	0	184
Grp Sat Flow(s),veh/h/ln	1728	1777	1818	1781	1777	1536	1645	0	0	1781	0	1538
Q Serve(g_s), s	24.8	9.8	9.9	1.2	26.3	29.0	6.3	0.0	0.0	4.5	0.0	15.0
Cycle Q Clear(g_c), s	24.8	9.8	9.9	1.2	26.3	29.0	6.3	0.0	0.0	4.5	0.0	15.0
Prop In Lane	1.00		0.13	1.00		1.00	0.58		0.26	1.00		1.00
Lane Grp Cap(c), veh/h	749	870	890	25	1019	441	352	0	0	447	0	193
V/C Ratio(X)	0.93	0.27	0.27	0.67	0.79	0.85	0.28	0.00	0.00	0.31	0.00	0.95
Avail Cap(c_a), veh/h	784	870	890	57	1019	441	392	0	0	447	0	193
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.99	0.00	0.99
Uniform Delay (d), s/veh	48.4	18.9	19.0	61.8	41.4	42.4	41.4	0.0	0.0	50.2	0.0	54.7
Incr Delay (d2), s/veh	16.2	0.8	0.8	10.8	6.2	18.3	0.2	0.0	0.0	0.4	0.0	51.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.3	4.2	4.3	0.6	12.3	13.1	2.6	0.0	0.0	2.1	0.0	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.6	19.7	19.7	72.6	47.6	60.7	41.6	0.0	0.0	50.6	0.0	106.0
LnGrp LOS	E	B	B	E	D	E	D	A	A	D	A	F
Approach Vol, veh/h		1174			1197			98			324	
Approach Delay, s/veh		46.3			52.1			41.6			82.0	
Approach LOS		D			D			D			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.2	67.3		20.7	31.7	41.7		31.8
Change Period (Y+Rc), s	4.4	5.6		4.9	4.4	* 5.6		4.9
Max Green Setting (Gmax), s	4.0	56.4		15.8	28.6	* 33		30.0
Max Q Clear Time (g_c+I1), s	3.2	11.9		17.0	26.8	31.0		8.3
Green Ext Time (p_c), s	0.0	4.5		0.0	0.5	1.1		0.2

Intersection Summary	
HCM 6th Ctrl Delay	52.8
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	83	86	339	484	44
Future Volume (veh/h)	24	83	86	339	484	44
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.92	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1900
Adj Flow Rate, veh/h	27	92	96	377	584	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	0
Cap, veh/h	44	1148	953	1088	774	350
Arrive On Green	0.02	0.61	0.51	0.51	0.22	0.00
Sat Flow, veh/h	1781	1870	1870	1459	3563	1610
Grp Volume(v), veh/h	27	92	96	377	584	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1459	1781	1610
Q Serve(g_s), s	0.8	1.1	1.5	2.0	8.5	0.0
Cycle Q Clear(g_c), s	0.8	1.1	1.5	2.0	8.5	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	44	1148	953	1088	774	350
V/C Ratio(X)	0.62	0.08	0.10	0.35	0.75	0.00
Avail Cap(c_a), veh/h	181	1292	953	1088	1460	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.6	4.3	7.0	0.4	20.2	0.0
Incr Delay (d2), s/veh	5.2	0.0	0.2	0.9	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.3	0.5	0.3	3.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.8	4.3	7.2	1.3	20.8	0.0
LnGrp LOS	C	A	A	A	C	A
Approach Vol, veh/h		119	473		584	
Approach Delay, s/veh		10.6	2.5		20.8	
Approach LOS		B	A		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		38.8		16.4	5.8	33.0
Change Period (Y+Rc), s		4.9		4.4	4.4	4.9
Max Green Setting (Gmax), s		38.1		22.6	5.6	28.1
Max Q Clear Time (g_c+I1), s		3.1		10.5	2.8	4.0
Green Ext Time (p_c), s		0.2		1.5	0.0	1.4
Intersection Summary						
HCM 6th Ctrl Delay			12.4			
HCM 6th LOS			B			

Notes

User approved volume balancing among the lanes for turning movement.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	14	7	431	0	0	673
Future Volume (vph)	14	7	431	0	0	673
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9		4.9			4.9
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.90		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.96		1.00			1.00
Flt Protected	0.97		1.00			1.00
Satd. Flow (prot)	1547		3539			3539
Flt Permitted	0.97		1.00			1.00
Satd. Flow (perm)	1547		3539			3539
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	15	7	459	0	0	716
RTOR Reduction (vph)	6	0	0	0	0	0
Lane Group Flow (vph)	16	0	459	0	0	716
Confl. Peds. (#/hr)		307		37		
Confl. Bikes (#/hr)		10		10		
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases						
Actuated Green, G (s)	9.4		47.8			47.8
Effective Green, g (s)	9.4		47.8			47.8
Actuated g/C Ratio	0.14		0.71			0.71
Clearance Time (s)	4.9		4.9			4.9
Vehicle Extension (s)	2.0		3.6			3.4
Lane Grp Cap (vph)	217		2524			2524
v/s Ratio Prot	c0.01		0.13			c0.20
v/s Ratio Perm						
v/c Ratio	0.07		0.18			0.28
Uniform Delay, d1	25.0		3.2			3.4
Progression Factor	1.00		1.02			1.00
Incremental Delay, d2	0.1		0.2			0.3
Delay (s)	25.1		3.4			3.7
Level of Service	C		A			A
Approach Delay (s)	25.1		3.4			3.7
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	1	9	3	1	0	429	22	6	680	1
Future Volume (vph)	1	1	1	9	3	1	0	429	22	6	680	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9			4.9			4.9			4.9	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.91			0.98			0.98			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.95			0.99			0.99			1.00	
Flt Protected		0.98			0.97			1.00			1.00	
Satd. Flow (prot)		1591			1741			3451			3530	
Flt Permitted		0.93			0.83			1.00			0.95	
Satd. Flow (perm)		1506			1504			3451			3359	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1	1	1	10	3	1	0	477	24	7	756	1
RTOR Reduction (vph)	0	1	0	0	1	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	2	0	0	13	0	0	498	0	0	764	0
Confl. Peds. (#/hr)			268			268			170	170		154
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Actuated Green, G (s)		9.4			9.4			47.8			47.8	
Effective Green, g (s)		9.4			9.4			47.8			47.8	
Actuated g/C Ratio		0.14			0.14			0.71			0.71	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			3.6			3.4	
Lane Grp Cap (vph)		211			211			2462			2396	
v/s Ratio Prot								0.14				
v/s Ratio Perm		0.00			c0.01						c0.23	
v/c Ratio		0.01			0.06			0.20			0.32	
Uniform Delay, d1		24.8			25.0			3.2			3.6	
Progression Factor		1.00			1.00			0.68			0.41	
Incremental Delay, d2		0.0			0.0			0.2			0.3	
Delay (s)		24.8			25.0			2.4			1.8	
Level of Service		C			C			A			A	
Approach Delay (s)		24.8			25.0			2.4			1.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	2.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	0	140	194	27	58	71	360	0	0	553	16
Future Volume (veh/h)	22	0	140	194	27	58	71	360	0	0	553	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.90	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h	23	0	146	202	28	60	74	375	0	0	576	17
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	0	2	2	2	2	2	2	0	0	2	2
Cap, veh/h	0	0	0	827	114	243	181	2469	0	0	1992	854
Arrive On Green	0.00	0.00	0.00	0.23	0.23	0.23	0.03	0.23	0.00	0.00	0.56	0.56
Sat Flow, veh/h		0		3563	489	1049	1781	3647	0	0	3647	1524
Grp Volume(v), veh/h		0.0		202	0	88	74	375	0	0	576	17
Grp Sat Flow(s),veh/h/ln				1781	0	1538	1781	1777	0	0	1777	1524
Q Serve(g_s), s				6.2	0.0	6.2	5.5	11.3	0.0	0.0	11.4	0.7
Cycle Q Clear(g_c), s				6.2	0.0	6.2	5.5	11.3	0.0	0.0	11.4	0.7
Prop In Lane				1.00		0.68	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				827	0	357	181	2469	0	0	1992	854
V/C Ratio(X)				0.24	0.00	0.25	0.41	0.15	0.00	0.00	0.29	0.02
Avail Cap(c_a), veh/h				827	0	357	181	2469	0	0	1992	854
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.80	0.80	0.00	0.00	0.97	0.97
Uniform Delay (d), s/veh				41.9	0.0	41.9	60.8	20.1	0.0	0.0	15.4	13.1
Incr Delay (d2), s/veh				0.7	0.0	1.6	5.4	0.1	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.9	0.0	2.6	2.8	5.4	0.0	0.0	4.8	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				42.6	0.0	43.5	66.2	20.2	0.0	0.0	15.8	13.1
LnGrp LOS				D	A	D	E	C	A	A	B	B
Approach Vol, veh/h					290			449			593	
Approach Delay, s/veh					42.9			27.8			15.7	
Approach LOS					D			C			B	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		98.0			18.0	80.0		36.0				
Change Period (Y+Rc), s		4.9			4.4	4.9		4.9				
Max Green Setting (Gmax), s		57.1			13.6	39.1		31.1				
Max Q Clear Time (g_c+I1), s		13.3			7.5	13.4		8.2				
Green Ext Time (p_c), s		3.3			0.0	5.1		0.7				

Intersection Summary			
HCM 6th Ctrl Delay			25.7
HCM 6th LOS			C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	120	1629	1241	59	9	59
Future Volume (veh/h)	120	1629	1241	59	9	59
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1900	1900
Adj Flow Rate, veh/h	122	1662	1266	60	9	60
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	146	2944	2460	116	17	115
Arrive On Green	0.08	0.83	0.71	0.71	0.08	0.08
Sat Flow, veh/h	1781	3647	3542	163	204	1359
Grp Volume(v), veh/h	122	1662	652	674	70	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1835	1586	0
Q Serve(g_s), s	9.0	20.2	22.2	22.3	5.7	0.0
Cycle Q Clear(g_c), s	9.0	20.2	22.2	22.3	5.7	0.0
Prop In Lane	1.00			0.09	0.13	0.86
Lane Grp Cap(c), veh/h	146	2944	1267	1309	134	0
V/C Ratio(X)	0.83	0.56	0.51	0.52	0.52	0.00
Avail Cap(c_a), veh/h	261	2944	1267	1309	378	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	60.6	3.7	8.7	8.7	58.8	0.0
Incr Delay (d2), s/veh	4.7	0.8	1.5	1.5	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	5.1	7.8	8.1	2.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	65.2	4.5	10.2	10.2	59.9	0.0
LnGrp LOS	E	A	B	B	E	A
Approach Vol, veh/h		1784	1326		70	
Approach Delay, s/veh		8.7	10.2		59.9	
Approach LOS		A	B		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		117.6		16.4	15.4	102.2
Change Period (Y+Rc), s		* 6.6		5.1	4.4	6.6
Max Green Setting (Gmax), s		* 91		31.9	19.6	60.0
Max Q Clear Time (g_c+I1), s		22.2		7.7	11.0	24.3
Green Ext Time (p_c), s		51.1		0.1	0.1	25.3

Intersection Summary			
HCM 6th Ctrl Delay			10.4
HCM 6th LOS			B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	377	1034	82	22	638	190	40	13	10	312	17	509
Future Volume (veh/h)	377	1034	82	22	638	190	40	13	10	312	17	509
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.94	1.00		0.72	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	401	1100	87	23	679	202	43	14	11	345	0	541
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	451	1064	84	31	735	308	229	74	59	1053	0	459
Arrive On Green	0.13	0.32	0.32	0.02	0.21	0.21	0.22	0.22	0.22	0.30	0.00	0.30
Sat Flow, veh/h	3456	3322	263	1781	3554	1487	1043	340	267	3563	0	1554
Grp Volume(v), veh/h	401	588	599	23	679	202	68	0	0	345	0	541
Grp Sat Flow(s),veh/h/ln	1728	1777	1808	1781	1777	1487	1649	0	0	1781	0	1554
Q Serve(g_s), s	15.3	42.9	42.9	1.7	25.1	16.7	4.5	0.0	0.0	10.1	0.0	39.6
Cycle Q Clear(g_c), s	15.3	42.9	42.9	1.7	25.1	16.7	4.5	0.0	0.0	10.1	0.0	39.6
Prop In Lane	1.00		0.15	1.00		1.00	0.63		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	451	569	579	31	735	308	362	0	0	1053	0	459
V/C Ratio(X)	0.89	1.03	1.04	0.75	0.92	0.66	0.19	0.00	0.00	0.33	0.00	1.18
Avail Cap(c_a), veh/h	480	569	579	82	735	308	369	0	0	1053	0	459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.86	0.00	0.86
Uniform Delay (d), s/veh	57.3	45.5	45.5	65.6	52.1	48.8	42.6	0.0	0.0	36.8	0.0	47.2
Incr Delay (d2), s/veh	16.8	46.6	46.8	12.8	19.0	10.5	0.1	0.0	0.0	0.2	0.0	98.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	25.9	26.4	0.9	13.0	7.1	1.9	0.0	0.0	4.5	0.0	27.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.1	92.2	92.3	78.4	71.1	59.2	42.7	0.0	0.0	37.0	0.0	145.5
LnGrp LOS	E	F	F	E	E	E	D	A	A	D	A	F
Approach Vol, veh/h		1588			904			68			886	
Approach Delay, s/veh		87.7			68.7			42.7			103.2	
Approach LOS		F			E			D			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.7	48.5		44.5	21.9	33.3		34.3
Change Period (Y+Rc), s	4.4	5.6		4.9	4.4	* 5.6		4.9
Max Green Setting (Gmax), s	6.2	38.4		39.6	18.6	* 27		30.0
Max Q Clear Time (g_c+I1), s	3.7	44.9		41.6	17.3	27.1		6.5
Green Ext Time (p_c), s	0.0	0.0		0.0	0.2	0.0		0.1

Intersection Summary		
HCM 6th Ctrl Delay		85.8
HCM 6th LOS		F

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

APPENDIX K

EXISTING + CUMULATIVE PROJECTS + PROJECT INTERSECTION ANALYSIS WORKSHEETS

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	33	54	54	625	112	20
Future Volume (veh/h)	33	54	54	625	112	20
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.89	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1900
Adj Flow Rate, veh/h	41	67	67	772	161	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	0
Cap, veh/h	52	910	770	1243	1484	671
Arrive On Green	0.03	0.49	0.41	0.41	0.42	0.00
Sat Flow, veh/h	1781	1870	1870	1416	3563	1610
Grp Volume(v), veh/h	41	67	67	772	161	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1416	1781	1610
Q Serve(g_s), s	2.2	1.8	2.1	8.6	2.7	0.0
Cycle Q Clear(g_c), s	2.2	1.8	2.1	8.6	2.7	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	52	910	770	1243	1484	671
V/C Ratio(X)	0.79	0.07	0.09	0.62	0.11	0.00
Avail Cap(c_a), veh/h	178	910	770	1243	1484	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.95	0.95	1.00	0.00
Uniform Delay (d), s/veh	46.3	13.1	17.2	0.6	17.1	0.0
Incr Delay (d2), s/veh	9.4	0.2	0.2	2.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.8	1.0	22.9	1.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	55.7	13.3	17.5	2.8	17.3	0.0
LnGrp LOS	E	B	B	A	B	A
Approach Vol, veh/h		108	839		161	
Approach Delay, s/veh		29.4	4.0		17.3	
Approach LOS		C	A		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		51.6		44.4	7.2	44.4
Change Period (Y+Rc), s		4.9		4.4	4.4	4.9
Max Green Setting (Gmax), s		46.7		40.0	9.6	32.7
Max Q Clear Time (g_c+I1), s		3.8		4.7	4.2	10.6
Green Ext Time (p_c), s		0.1		0.5	0.0	3.4

Intersection Summary		
HCM 6th Ctrl Delay		8.4
HCM 6th LOS		A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	652	0	0	260
Future Volume (vph)	0	0	652	0	0	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.9			4.9
Lane Util. Factor			0.95			0.95
Frpb, ped/bikes			1.00			1.00
Flpb, ped/bikes			1.00			1.00
Frt			1.00			1.00
Flt Protected			1.00			1.00
Satd. Flow (prot)			3539			3539
Flt Permitted			1.00			1.00
Satd. Flow (perm)			3539			3539
Peak-hour factor, PHF	0.73	0.73	0.73	0.73	0.73	0.73
Adj. Flow (vph)	0	0	893	0	0	356
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	893	0	0	356
Confl. Peds. (#/hr)		483		37		
Confl. Bikes (#/hr)		10		10		
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases						
Actuated Green, G (s)			71.8			71.8
Effective Green, g (s)			71.8			71.8
Actuated g/C Ratio			0.75			0.75
Clearance Time (s)			4.9			4.9
Vehicle Extension (s)			3.6			3.4
Lane Grp Cap (vph)			2646			2646
v/s Ratio Prot			c0.25			0.10
v/s Ratio Perm						
v/c Ratio			0.34			0.13
Uniform Delay, d1			4.1			3.4
Progression Factor			0.37			0.84
Incremental Delay, d2			0.3			0.1
Delay (s)			1.9			3.0
Level of Service			A			A
Approach Delay (s)	0.0		1.9			3.0
Approach LOS	A		A			A

Intersection Summary			
HCM 2000 Control Delay	2.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1	2	2	0	4	0	648	20	5	264	4
Future Volume (vph)	0	1	2	2	0	4	0	648	20	5	264	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9			4.9			4.9			4.9	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.76			0.98			0.99			0.99	
Flpb, ped/bikes		1.00			0.89			1.00			1.00	
Frt		0.90			0.92			1.00			1.00	
Flt Protected		1.00			0.98			1.00			1.00	
Satd. Flow (prot)		1278			1460			3487			3498	
Flt Permitted		1.00			0.94			1.00			0.94	
Satd. Flow (perm)		1278			1395			3487			3294	
Peak-hour factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	0	1	3	3	0	5	0	853	26	7	347	5
RTOR Reduction (vph)	0	3	0	0	7	0	0	2	0	0	1	0
Lane Group Flow (vph)	0	1	0	0	1	0	0	877	0	0	358	0
Confl. Peds. (#/hr)			228	228					111	111		160
Confl. Bikes (#/hr)			10			10			10			10
Turn Type		NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Actuated Green, G (s)		14.4			14.4			71.8			71.8	
Effective Green, g (s)		14.4			14.4			71.8			71.8	
Actuated g/C Ratio		0.15			0.15			0.75			0.75	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			3.6			3.4	
Lane Grp Cap (vph)		191			209			2607			2463	
v/s Ratio Prot		c0.00						c0.25				
v/s Ratio Perm					0.00						0.11	
v/c Ratio		0.01			0.01			0.34			0.15	
Uniform Delay, d1		34.7			34.7			4.1			3.4	
Progression Factor		1.00			1.00			1.00			0.62	
Incremental Delay, d2		0.0			0.0			0.3			0.1	
Delay (s)		34.7			34.7			4.4			2.2	
Level of Service		C			C			A			A	
Approach Delay (s)		34.7			34.7			4.4			2.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	4.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	22	63	42	63	123	616	0	0	163	16
Future Volume (veh/h)	4	0	22	63	42	63	123	616	0	0	163	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.93	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h	5	0	25	64	59	72	140	700	0	0	185	18
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	0	2	2	2	2	2	2	0	0	2	2
Cap, veh/h	0	0	0	440	462	366	277	2400	0	0	1723	751
Arrive On Green	0.00	0.00	0.00	0.25	0.25	0.25	0.05	0.22	0.00	0.00	0.48	0.48
Sat Flow, veh/h		0		1781	1870	1481	1781	3647	0	0	3647	1549
Grp Volume(v), veh/h		0.0		64	59	72	140	700	0	0	185	18
Grp Sat Flow(s),veh/h/ln				1781	1870	1481	1781	1777	0	0	1777	1549
Q Serve(g_s), s				3.5	3.1	4.8	9.6	20.6	0.0	0.0	3.6	0.8
Cycle Q Clear(g_c), s				3.5	3.1	4.8	9.6	20.6	0.0	0.0	3.6	0.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				440	462	366	277	2400	0	0	1723	751
V/C Ratio(X)				0.15	0.13	0.20	0.51	0.29	0.00	0.00	0.11	0.02
Avail Cap(c_a), veh/h				440	462	366	277	2400	0	0	1723	751
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.64	0.64	0.00	0.00	0.99	0.99
Uniform Delay (d), s/veh				37.1	36.9	37.6	55.0	23.9	0.0	0.0	17.6	16.9
Incr Delay (d2), s/veh				0.7	0.6	1.2	4.2	0.2	0.0	0.0	0.1	0.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.7	1.5	1.9	5.0	9.9	0.0	0.0	1.5	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				37.8	37.5	38.8	59.2	24.1	0.0	0.0	17.8	17.0
LnGrp LOS				D	D	D	E	C	A	A	B	B
Approach Vol, veh/h					195			840			203	
Approach Delay, s/veh					38.0			30.0			17.7	
Approach LOS					D			C			B	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		90.0			24.0	66.0		36.0				
Change Period (Y+Rc), s		4.9			4.4	4.9		4.9				
Max Green Setting (Gmax), s		51.1			19.6	27.1		31.1				
Max Q Clear Time (g_c+I1), s		22.6			11.6	5.6		6.8				
Green Ext Time (p_c), s		6.3			0.1	1.4		0.6				

Intersection Summary			
HCM 6th Ctrl Delay			29.2
HCM 6th LOS			C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	34	767	1291	6	14	104
Future Volume (veh/h)	34	767	1291	6	14	104
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1900	1900
Adj Flow Rate, veh/h	35	799	1345	6	15	108
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	45	2811	2652	12	22	161
Arrive On Green	0.03	0.79	0.73	0.73	0.12	0.12
Sat Flow, veh/h	1781	3647	3721	16	193	1390
Grp Volume(v), veh/h	35	799	659	692	124	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1867	1596	0
Q Serve(g_s), s	2.5	7.6	20.0	20.0	9.4	0.0
Cycle Q Clear(g_c), s	2.5	7.6	20.0	20.0	9.4	0.0
Prop In Lane	1.00			0.01	0.12	0.87
Lane Grp Cap(c), veh/h	45	2811	1299	1365	185	0
V/C Ratio(X)	0.78	0.28	0.51	0.51	0.67	0.00
Avail Cap(c_a), veh/h	107	2811	1299	1365	430	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	61.1	3.5	7.2	7.2	53.4	0.0
Incr Delay (d2), s/veh	10.6	0.3	1.4	1.3	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.1	6.6	6.9	3.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	71.7	3.8	8.7	8.6	54.9	0.0
LnGrp LOS	E	A	A	A	D	A
Approach Vol, veh/h		834	1351		124	
Approach Delay, s/veh		6.6	8.6		54.9	
Approach LOS		A	A		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		106.3		19.7	7.6	98.7
Change Period (Y+Rc), s		* 6.6		5.1	4.4	6.6
Max Green Setting (Gmax), s		* 81		33.9	7.6	68.4
Max Q Clear Time (g_c+I1), s		9.6		11.4	4.5	22.0
Green Ext Time (p_c), s		17.5		0.2	0.0	31.1

Intersection Summary			
HCM 6th Ctrl Delay			10.4
HCM 6th LOS			B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	610	390	27	15	700	329	50	15	22	123	4	164
Future Volume (veh/h)	610	390	27	15	700	329	50	15	22	123	4	164
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.83	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	701	448	31	17	805	378	57	17	25	145	0	189
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	754	1646	113	25	1014	438	203	60	89	447	0	193
Arrive On Green	0.22	0.49	0.49	0.01	0.29	0.29	0.21	0.21	0.21	0.13	0.00	0.13
Sat Flow, veh/h	3456	3363	232	1781	3554	1536	948	283	416	3563	0	1538
Grp Volume(v), veh/h	701	236	243	17	805	378	99	0	0	145	0	189
Grp Sat Flow(s),veh/h/ln	1728	1777	1818	1781	1777	1536	1647	0	0	1781	0	1538
Q Serve(g_s), s	25.1	9.8	9.9	1.2	26.4	29.4	6.3	0.0	0.0	4.7	0.0	15.4
Cycle Q Clear(g_c), s	25.1	9.8	9.9	1.2	26.4	29.4	6.3	0.0	0.0	4.7	0.0	15.4
Prop In Lane	1.00		0.13	1.00		1.00	0.58		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	754	869	890	25	1014	438	352	0	0	447	0	193
V/C Ratio(X)	0.93	0.27	0.27	0.67	0.79	0.86	0.28	0.00	0.00	0.32	0.00	0.98
Avail Cap(c_a), veh/h	784	869	890	57	1014	438	392	0	0	447	0	193
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.99	0.00	0.99
Uniform Delay (d), s/veh	48.3	18.9	19.0	61.8	41.6	42.7	41.4	0.0	0.0	50.2	0.0	54.9
Incr Delay (d2), s/veh	16.6	0.8	0.8	10.8	6.4	19.5	0.2	0.0	0.0	0.4	0.0	58.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.4	4.2	4.3	0.6	12.3	13.4	2.6	0.0	0.0	2.1	0.0	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.9	19.7	19.7	72.6	48.0	62.2	41.6	0.0	0.0	50.7	0.0	113.4
LnGrp LOS	E	B	B	E	D	E	D	A	A	D	A	F
Approach Vol, veh/h		1180			1200			99			334	
Approach Delay, s/veh		46.6			52.8			41.6			86.2	
Approach LOS		D			D			D			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.2	67.3		20.7	31.9	41.6		31.8
Change Period (Y+Rc), s	4.4	5.6		4.9	4.4	* 5.6		4.9
Max Green Setting (Gmax), s	4.0	56.4		15.8	28.6	* 33		30.0
Max Q Clear Time (g_c+I1), s	3.2	11.9		17.4	27.1	31.4		8.3
Green Ext Time (p_c), s	0.0	4.5		0.0	0.4	0.8		0.2

Intersection Summary			
HCM 6th Ctrl Delay			53.8
HCM 6th LOS			D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	84	87	345	493	44
Future Volume (veh/h)	24	84	87	345	493	44
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.92	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1900
Adj Flow Rate, veh/h	27	93	97	383	594	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	0
Cap, veh/h	44	1151	958	1095	780	352
Arrive On Green	0.02	0.62	0.51	0.51	0.22	0.00
Sat Flow, veh/h	1781	1870	1870	1460	3563	1610
Grp Volume(v), veh/h	27	93	97	383	594	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1460	1781	1610
Q Serve(g_s), s	0.8	1.1	1.5	2.1	8.8	0.0
Cycle Q Clear(g_c), s	0.8	1.1	1.5	2.1	8.8	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	44	1151	958	1095	780	352
V/C Ratio(X)	0.62	0.08	0.10	0.35	0.76	0.00
Avail Cap(c_a), veh/h	178	1292	958	1095	1399	632
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.1	4.4	7.0	0.4	20.5	0.0
Incr Delay (d2), s/veh	5.2	0.0	0.2	0.9	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.3	0.6	0.3	3.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.3	4.4	7.2	1.3	21.1	0.0
LnGrp LOS	C	A	A	A	C	A
Approach Vol, veh/h		120	480		594	
Approach Delay, s/veh		10.7	2.5		21.1	
Approach LOS		B	A		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		39.4		16.7	5.8	33.6
Change Period (Y+Rc), s		4.9		4.4	4.4	4.9
Max Green Setting (Gmax), s		38.7		22.0	5.6	28.7
Max Q Clear Time (g_c+I1), s		3.1		10.8	2.8	4.1
Green Ext Time (p_c), s		0.2		1.5	0.0	1.5
Intersection Summary						
HCM 6th Ctrl Delay			12.6			
HCM 6th LOS			B			

Notes

User approved volume balancing among the lanes for turning movement.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	447	0	0	684
Future Volume (vph)	0	0	447	0	0	684
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.9			4.9
Lane Util. Factor			0.95			0.95
Frpb, ped/bikes			1.00			1.00
Flpb, ped/bikes			1.00			1.00
Frt			1.00			1.00
Flt Protected			1.00			1.00
Satd. Flow (prot)			3539			3539
Flt Permitted			1.00			1.00
Satd. Flow (perm)			3539			3539
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	476	0	0	728
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	476	0	0	728
Confl. Peds. (#/hr)		307		37		
Confl. Bikes (#/hr)		10		10		
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases						
Actuated Green, G (s)			46.0			46.0
Effective Green, g (s)			46.0			46.0
Actuated g/C Ratio			0.69			0.69
Clearance Time (s)			4.9			4.9
Vehicle Extension (s)			3.6			3.4
Lane Grp Cap (vph)			2429			2429
v/s Ratio Prot			0.13			c0.21
v/s Ratio Perm						
v/c Ratio			0.20			0.30
Uniform Delay, d1			3.8			4.1
Progression Factor			0.76			1.00
Incremental Delay, d2			0.2			0.3
Delay (s)			3.1			4.5
Level of Service			A			A
Approach Delay (s)	0.0		3.1			4.5
Approach LOS	A		A			A

Intersection Summary			
HCM 2000 Control Delay	3.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	1	9	3	1	0	445	22	6	691	1
Future Volume (vph)	1	1	1	9	3	1	0	445	22	6	691	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9			4.9			4.9			4.9	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.91			0.98			0.98			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.95			0.99			0.99			1.00	
Flt Protected		0.98			0.97			1.00			1.00	
Satd. Flow (prot)		1592			1741			3454			3530	
Flt Permitted		0.94			0.85			1.00			0.95	
Satd. Flow (perm)		1523			1536			3454			3359	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1	1	1	10	3	1	0	494	24	7	768	1
RTOR Reduction (vph)	0	1	0	0	1	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	2	0	0	13	0	0	515	0	0	776	0
Confl. Peds. (#/hr)			268			268			170	170		154
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8						6		
Actuated Green, G (s)		11.2			11.2			46.0			46.0	
Effective Green, g (s)		11.2			11.2			46.0			46.0	
Actuated g/C Ratio		0.17			0.17			0.69			0.69	
Clearance Time (s)		4.9			4.9			4.9			4.9	
Vehicle Extension (s)		2.0			2.0			3.6			3.4	
Lane Grp Cap (vph)		254			256			2371			2306	
v/s Ratio Prot								0.15				
v/s Ratio Perm		0.00			c0.01						c0.23	
v/c Ratio		0.01			0.05			0.22			0.34	
Uniform Delay, d1		23.3			23.4			3.9			4.3	
Progression Factor		1.00			1.00			0.53			0.43	
Incremental Delay, d2		0.0			0.0			0.2			0.4	
Delay (s)		23.3			23.5			2.2			2.2	
Level of Service		C			C			A			A	
Approach Delay (s)		23.3			23.5			2.2			2.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	2.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	0	140	194	27	58	71	376	0	0	564	16
Future Volume (veh/h)	22	0	140	194	27	58	71	376	0	0	564	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.90	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h	23	0	146	202	28	60	74	392	0	0	588	17
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	0	2	2	2	2	2	2	0	0	2	2
Cap, veh/h	0	0	0	853	118	252	181	2442	0	0	1965	843
Arrive On Green	0.00	0.00	0.00	0.24	0.24	0.24	0.03	0.23	0.00	0.00	0.55	0.55
Sat Flow, veh/h		0		3563	491	1051	1781	3647	0	0	3647	1524
Grp Volume(v), veh/h		0.0		202	0	88	74	392	0	0	588	17
Grp Sat Flow(s),veh/h/ln				1781	0	1542	1781	1777	0	0	1777	1524
Q Serve(g_s), s				6.1	0.0	6.2	5.5	11.9	0.0	0.0	11.9	0.7
Cycle Q Clear(g_c), s				6.1	0.0	6.2	5.5	11.9	0.0	0.0	11.9	0.7
Prop In Lane				1.00		0.68	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				853	0	369	181	2442	0	0	1965	843
V/C Ratio(X)				0.24	0.00	0.24	0.41	0.16	0.00	0.00	0.30	0.02
Avail Cap(c_a), veh/h				853	0	369	181	2442	0	0	1965	843
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.79	0.79	0.00	0.00	0.95	0.95
Uniform Delay (d), s/veh				41.1	0.0	41.1	60.8	20.8	0.0	0.0	16.0	13.5
Incr Delay (d2), s/veh				0.7	0.0	1.5	5.3	0.1	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.8	0.0	2.5	2.8	5.7	0.0	0.0	5.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				41.7	0.0	42.6	66.2	20.9	0.0	0.0	16.4	13.6
LnGrp LOS				D	A	D	E	C	A	A	B	B
Approach Vol, veh/h					290			466			605	
Approach Delay, s/veh					42.0			28.1			16.3	
Approach LOS					D			C			B	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		97.0			18.0	79.0		37.0				
Change Period (Y+Rc), s		4.9			4.4	4.9		4.9				
Max Green Setting (Gmax), s		57.1			13.6	39.1		32.1				
Max Q Clear Time (g_c+I1), s		13.9			7.5	13.9		8.2				
Green Ext Time (p_c), s		3.4			0.0	5.2		0.7				

Intersection Summary	
HCM 6th Ctrl Delay	25.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	121	1639	1247	59	9	60
Future Volume (veh/h)	121	1639	1247	59	9	60
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1900	1900
Adj Flow Rate, veh/h	123	1672	1272	60	9	61
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	147	2941	2456	116	17	116
Arrive On Green	0.08	0.83	0.71	0.71	0.08	0.08
Sat Flow, veh/h	1781	3647	3543	162	201	1362
Grp Volume(v), veh/h	123	1672	654	678	71	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1835	1586	0
Q Serve(g_s), s	9.1	20.5	22.5	22.6	5.7	0.0
Cycle Q Clear(g_c), s	9.1	20.5	22.5	22.6	5.7	0.0
Prop In Lane	1.00			0.09	0.13	0.86
Lane Grp Cap(c), veh/h	147	2941	1265	1307	135	0
V/C Ratio(X)	0.83	0.57	0.52	0.52	0.53	0.00
Avail Cap(c_a), veh/h	261	2941	1265	1307	378	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	60.6	3.8	8.8	8.8	58.7	0.0
Incr Delay (d2), s/veh	4.7	0.8	1.5	1.5	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	5.2	7.9	8.2	2.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	65.2	4.6	10.3	10.3	59.9	0.0
LnGrp LOS	E	A	B	B	E	A
Approach Vol, veh/h		1795	1332		71	
Approach Delay, s/veh		8.7	10.3		59.9	
Approach LOS		A	B		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		117.5		16.5	15.5	102.0
Change Period (Y+Rc), s		* 6.6		5.1	4.4	6.6
Max Green Setting (Gmax), s		* 91		31.9	19.6	60.0
Max Q Clear Time (g_c+I1), s		22.5		7.7	11.1	24.6
Green Ext Time (p_c), s		51.3		0.1	0.1	25.3

Intersection Summary	
HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	387	1034	82	22	638	195	40	14	10	316	18	515
Future Volume (veh/h)	387	1034	82	22	638	195	40	14	10	316	18	515
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.94	1.00		0.72	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	412	1100	87	23	679	207	43	15	11	350	0	548
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	460	1076	85	31	739	309	226	79	58	1040	0	453
Arrive On Green	0.13	0.32	0.32	0.02	0.21	0.21	0.22	0.22	0.22	0.29	0.00	0.29
Sat Flow, veh/h	3456	3322	263	1781	3554	1487	1030	359	263	3563	0	1554
Grp Volume(v), veh/h	412	588	599	23	679	207	69	0	0	350	0	548
Grp Sat Flow(s),veh/h/ln	1728	1777	1808	1781	1777	1487	1652	0	0	1781	0	1554
Q Serve(g_s), s	15.7	43.4	43.4	1.7	25.1	17.2	4.6	0.0	0.0	10.3	0.0	39.1
Cycle Q Clear(g_c), s	15.7	43.4	43.4	1.7	25.1	17.2	4.6	0.0	0.0	10.3	0.0	39.1
Prop In Lane	1.00		0.15	1.00		1.00	0.62		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	460	575	586	31	739	309	362	0	0	1040	0	453
V/C Ratio(X)	0.89	1.02	1.02	0.75	0.92	0.67	0.19	0.00	0.00	0.34	0.00	1.21
Avail Cap(c_a), veh/h	480	575	586	82	739	309	376	0	0	1040	0	453
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.86	0.00	0.86
Uniform Delay (d), s/veh	57.2	45.3	45.3	65.6	52.0	48.8	42.6	0.0	0.0	37.3	0.0	47.5
Incr Delay (d2), s/veh	17.9	43.1	43.2	12.8	18.4	11.0	0.1	0.0	0.0	0.2	0.0	110.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	25.7	26.1	0.9	13.0	7.3	1.9	0.0	0.0	4.6	0.0	29.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.0	88.4	88.5	78.4	70.4	59.8	42.7	0.0	0.0	37.4	0.0	158.1
LnGrp LOS	E	F	F	E	E	E	D	A	A	D	A	F
Approach Vol, veh/h		1599			909			69			898	
Approach Delay, s/veh		85.0			68.2			42.7			111.1	
Approach LOS		F			E			D			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	49.0		44.0	22.3	33.4		34.3				
Change Period (Y+Rc), s	4.4	5.6		4.9	4.4	* 5.6		4.9				
Max Green Setting (Gmax), s	6.2	38.4		39.1	18.6	* 27		30.5				
Max Q Clear Time (g_c+I1), s	3.7	45.4		41.1	17.7	27.1		6.6				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.1	0.0		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			86.5									
HCM 6th LOS			F									

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix C
Noise Technical Memorandum

605 THIRD STREET
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MEMORANDUM

To:	Michael Haberkorn, Andrew Contreiras (Gatzke Dillon & Ballance)
From:	Mike Greene (Dudek)
Subject:	SDSU ARC Expansion Project – Noise Technical Memorandum
Date:	November 20, 2018
cc:	Sarah Lozano, Iulia Roman (Dudek)
Attachment(s):	Figures 1–7 A, Field Noise Data Sheets B, Construction Noise Modeling Input and Output C, Traffic Noise Modeling Input and Output

Dudek has conducted an evaluation of potential impacts related to noise associated with the San Diego State University (SDSU) Aztec Recreation Center Expansion (ARC) (proposed project), located within the SDSU campus in San Diego, California. This technical memorandum provides the results of the noise evaluation.

1 Methodology

Existing ambient noise measurements were taken to quantify the current noise environment in and around the project site at the locations shown as Noise Measurement (M) on Figure 7 (Noise Measurement and Modeling Locations). Attachment A provides the results of these noise measurements.

The anticipated noise and vibration levels associated with the proposed construction-related activities were estimated using guidance and methodology from the Federal Highway Administration (FHWA), the California Department of Transportation (Caltrans),_and the Federal Transit Administration (FTA). To assess the magnitude of change in the noise environment that would result from construction of the proposed project, anticipated noise and vibration levels associated with the proposed construction-related activities were obtained from (1) reports prepared by the FTA (2006) and Caltrans (2004) and (2) construction activity and phasing information for similar projects. FHWA's Roadway Construction Noise Model (RCNM) (2008) was used to estimate resulting construction noise levels at the nearest occupied noise-sensitive land uses. The RCNM is often used for non-roadway projects because the same types of construction equipment used for roadway projects are also used for other project types. Input variables for the RCNM consist of the receiver/land use types, the equipment type and number of each (e.g., two graders, one loader, one tractor), the duty cycle for each piece of equipment (e.g., percentage of hours the equipment typically works per day), and the distance from the noise-sensitive receiver. No topographical or structural shielding was assumed in the modeling. The RCNM has default duty-cycle values for various pieces of equipment that were derived from an extensive study of typical construction activity patterns. Those default duty-cycle values were used for this noise analysis. The RCNM input/output files are provided in Attachment B.

The noise levels associated with project-related operational traffic on key roadways was determined using the traffic volumes provided by the proposed project's traffic impacts analysis (LLG 2018) and FHWA's Traffic Noise Model, Version 2.5 (TNM; 2004). The traffic noise modeling data are provided in Attachment C. On-site operational noise was assessed using details of proposed operational equipment provided by SDSU and known information about operational noise sources at the existing ARC that is proposed for expansion.

2 Project Location and Setting

The project site is located in the western portion of the main SDSU campus within the existing Campus Master Plan boundary, approximately 8 miles east of downtown San Diego (Figure 1, Project Location). As shown on Figure 2 (Project Site), the project site is bounded by 55th Street to the west, Aztec Circle Drive to the north, the remnants of the Aztec Bowl bleachers and a surface parking lot (Parking Lot 13) to the east, Viejas Arena to the southeast, and Aztec Walk to the south.

Additionally, land uses in the surrounding area include SDSU recreational facilities and surface parking lots to the west; surface parking lots, the SDSU International Student Center, and multifamily residential uses to the north; surface and structure parking lots to the north and east; and fraternity row and multifamily residential uses to the south. The site is not located close to any airports. The nearest airport is Montgomery Field, approximately 4.6 miles northwest of the site.

3 Project Description

The proposed project is an expansion of the existing ARC – a single-story building consisting of approximately 74,000 square feet that includes a four-court gym and cardio fitness and weightlifting areas. The proposed project would expand the existing ARC by approximately 68,000 square feet. With the expansion, the ARC building would consist of two stories, a proposed courtyard, and associated landscaping (Figure 3, Site Plan). Figure 5 (Floor Plans) and Figure 6 (Architectural Rendering – Southern Elevation) depict the floor plans and the basic design of the proposed project.

Outdoor mechanical equipment, such as heating, ventilation, and air conditioning (HVAC) equipment, would be mounted on the central portion of the rooftop. Additionally, SDSU is considering installation of a backup power generator, which, if included, would be a low-noise system with exhaust silencers and enclosure design and/or would be surrounded by a noise barrier or structure.

4 Existing Conditions

The proposed project site and its general vicinity consists entirely of developed land, as described previously (see Figure 2). Residential uses in the general vicinity include campus housing to the south and campus housing and residential neighborhoods to the northwest.

The primary noise sources in the project area are vehicular traffic along Montezuma Road and along adjacent secondary roadways. Traffic noise from Interstate 8, located approximately 1,500 feet north of the project site, is also occasionally audible but is not the primary contributor to the noise environment. Noise is also generated by students and people at various events on campus.

4.1 Existing Environmental Setting

Noise measurements were conducted in and around the project site to determine the existing noise levels. The measurements were made using a calibrated Rion NL-52 integrating sound-level meter, which meets the current American National Standards Institute (ANSI) standard for a Type 1 precision sound-level meter. The sound level meter was positioned at a height of approximately 5 feet aboveground on a tripod, and the measurement microphone was covered with a windscreen.

The noise measurements were conducted on September 17, 2018. The noise measurement locations are depicted as Sites M1 through M5 on Figure 7 (Noise Measurement and Modeling Locations). The sites were selected to provide samples of typical ambient noise levels at existing and future representative noise-sensitive land uses in the project vicinity. The measured average noise level (L_{eq}) ranged from 53 A-weighted decibels (dBA) at Site M5 to 70 dBA at Site M4. The measured average noise levels and the concurrent traffic volumes along the roads are summarized in Table 1. The field noise data sheets are provided in Attachment A.

Table 1. Measured Noise Level and Traffic Volumes

Site	Date, Time	L_{eq}	L_{max}	L_{min}	Cars	MT	HT	Buses
		(dBA)			(Number)			
M1	2018-09-17, 12:00 p.m. to 12:20 p.m.	66.4	74	60.3	40	1	0	0
M2	2018-09-17, 12:40 p.m. to 12:50 p.m.	63.5	77.7	53.2	140	6	2	0
M3	2018-09-17, 01:00 p.m. to 01:10 p.m.	64.8	72.9	53.9	160	2	0	1
M4	2018-09-17, 01:20 p.m. to 01:30 p.m.	69.8	80.6	55.6	210	3	1	6
M5	2018-09-17, 11:00 a.m. to 11:50 a.m.	53.1	68	39.7	100	4	0	0

Source: Attachment A.
Notes: MT = medium truck; HT = heavy truck; L_{eq} = average sound level; L_{max} = maximum sound level; L_{min} = minimum sound level.

4.2 Regulatory Setting

The proposed project is located on the SDSU campus within the boundaries of the City of San Diego (City), and campus noise can emanate to off-campus locations. Although the California State University system, as a state agency, is not subject to local plans, policies, and guidelines related to noise, for the limited purpose of this analysis, relevant guidance from the City was used in assessing impacts. The following are excerpts from the City's General Plan Noise Element and Municipal Code (Noise Ordinance).

City of San Diego General Plan Noise Element

The City's General Plan Noise Element identifies compatible exterior noise levels for various land use types (City of San Diego 2008a). The maximum allowable noise exposure varies depending on the land use. The maximum acceptable exterior noise level for residential uses and other noise-sensitive uses (including kindergarten through 12th grade schools, libraries, hospitals, daycare facilities, hotels, motels) is 65 dBA CNEL. However, exterior noise levels are considered compatible up to 75 dBA CNEL at higher education institutions.

City of San Diego Municipal Code, Section 59.5.0401 (Noise Ordinance), Sound Level Limits

City of San Diego Municipal Code, Section 59.5.0401 (City of San Diego 2008b), provides 1-hour noise limits that apply to the noise level of an individual source (i.e., the operational mechanical equipment) at the specified zoning districts identified in Table 2.

Table 2. Applicable Limits

Land Use	Time of Day	1-Hour Average Sound Level (dBA)
Single-family residential	7:00 a.m. to 7:00 p.m.	50
	7:00 p.m. to 10:00 p.m.	45
	10:00 p.m. to 7:00 a.m.	40
Multifamily residential (up to a maximum density of 1/2,000)	7:00 a.m. to 7:00 p.m.	55
	7:00 p.m. to 10:00 p.m.	50
	10:00 p.m. to 7:00 a.m.	45
All other residential	7:00 a.m. to 7:00 p.m.	60
	7:00 p.m. to 10:00 p.m.	55
	10:00 p.m. to 7:00 a.m.	50
Commercial	7:00 a.m. to 7:00 p.m.	65
	7:00 p.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	60
Industrial or agricultural	Any time	75

Source: City of San Diego 2008b.
Note: dBA = A-weighted decibels.

City of San Diego Municipal Code Section 59.5.0404 sets noise standards for construction-related activity. Construction noise exceeds this standard if the average sound level is greater than 75 dBA during a 12-hour period at or beyond the property lines of any residential-zoned property (City of San Diego 2008b). Construction-related activity is allowed only Monday through Saturday from 7:00 a.m. to 7:00 p.m., and is not permitted on legal holidays as specified in Section 21.04 of the San Diego Municipal Code, with the exception of Columbus Day and Washington's Birthday.

5 Impact Analysis and Conclusions

5.1 Thresholds of Significance

The California Environmental Quality Act (CEQA) Guidelines, Section 15332, Exemptions for In-Fill Development Projects, would apply to the proposed project. With respect to noise, the following condition of CEQA Guidelines, Section 15332, is relevant:

(d) Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.

To determine whether the proposed project would result in significant effects relating to noise, the CEQA Guidelines Appendix G thresholds, described below, were used.

The following significance criteria included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) assist in determining the significance of a noise impact. According to Appendix G, a significant impact related to noise would occur if the proposed project would:

1. Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
2. Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
3. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
4. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
5. Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and if so, would expose people residing or working in the project area to excessive noise levels.
6. Be within the vicinity of a private airstrip, and if so, would expose people residing or working in the project area to excessive noise levels.

Relative to Threshold 1, the City's General Plan, Noise Ordinance (outlined in Section 4.2, Regulatory Setting), and CEQA Significance Determination Thresholds guidance document (City of San Diego 2011) were used to develop the following project-specific thresholds of significance.

Traffic: A significant noise impact would result if the proposed project would increase the existing noise level by 3 dB or more in areas where the existing noise level exceeds 65 dBA CNEL (City of San Diego 2011). A significant noise impact would result if the proposed project would result in an exceedance of the City General Plan's 65 dBA CNEL exterior noise criteria at an outdoor noise-sensitive use area.

Stationary Uses: A significant noise impact would result if the stationary equipment generates noise levels exceeding the City's Noise Ordinance criteria.

Temporary Construction Noise: A significant noise impact would result if temporary construction noise levels exceed 75 dBA L_{eq} for 12 hours within a 24-hour period at a property zoned as residential.

5.2 Impact Analysis

1. Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction/Temporary Impacts

Project construction at the site would occur at varying distances from noise-sensitive land uses. Construction of the proposed ARC expansion along the northern project boundary would take place within approximately 200 feet of the existing multifamily housing located on the western side of 55th Street at Canyon Crest Drive. However, during construction of the ARC expansion to the south, construction would be more than 850 feet away. Typically, construction noise would occur approximately 400 feet from existing noise-sensitive uses.

The construction noise analysis output is included as Attachment B to this technical memorandum, and the results are summarized in Table 3. As shown in Table 3, the highest noise levels are predicted to occur during demolition activities when noise levels would be as high as 72 dBA equivalent continuous sound level ($L_{eq\ 12\text{-}hr}$) at the nearest existing residences approximately 200 feet away. At more typical distances of 400 or more feet, construction noise would range from approximately 54 to 66 dBA L_{eq}. Construction would occur for approximately 16 months, and the total demolition phase would occur for approximately 27 days.

At the nearest off-site noise-sensitive land uses, the noise levels during construction-related activities would be below the City's 75 dBA 12-hour average noise level criterion. Thus, construction noise would not result in a significant impact.

Table 3. Construction Noise Model Results Summary

Construction Phase	Construction Noise at Representative Receiver Distances ($L_{eq\ 12\text{-}hr}$ (dBA))[a]	
	Nearest Construction Work – 200 Feet (Approx.)	Nearest Construction Work – 400 Feet (Approx.)
Demolition	72	66
Site preparation	68	62
Grading	70	65
Building construction	67	61
Paving	68	63
Architectural coatings	60	54

a Assumes an 8-hour construction workday. When averaged over a 12-hour period, the average noise level would be 1.8 dB lower than the 8-hour average.

Operational/Permanent Impacts

Off-Site Traffic Noise

The proposed project would generate a net traffic volume increase. The majority of the increase would be along 55th Street and Montezuma Road (LLG 2018). Using FHWA's TNM (FHWA 2004), the noise level increase associated with the additional traffic volume was calculated. The results are summarized in Table 4. As shown in Table 4, the additional traffic associated with the proposed project would increase the noise at receptor locations by 1 dB CNEL or less. Thus, the additional project-generated traffic volume along the roads would not substantially increase the ambient noise level. The TNM input and output data files are provided in Attachment C.

Table 4. Traffic Noise Modeling Results Summary

Site	Existing (CNEL (dBA))	Existing Plus Project (CNEL (dBA))	Increase (dB)	Existing Plus Cumulative (CNEL (dBA))	Existing Plus Cumulative Plus Project (CNEL (dBA))	Increase (dB)
M1	62	62	0	62	63	1

Table 4. Traffic Noise Modeling Results Summary

Site	Existing (CNEL (dBA))	Existing Plus Project (CNEL (dBA))	Increase (dB)	Existing Plus Cumulative (CNEL (dBA))	Existing Plus Cumulative Plus Project (CNEL (dBA))	Increase (dB)
M2	63	63	0	63	63	0
M3	69	69	0	69	69	0
M4	67	67	0	68	68	0
M5	59	59	0	60	60	0

CNEL = Community Noise Equivalent Level; dBA = A-weighted decibel; dB = decibel.

Outdoor Mechanical Equipment

Outdoor mechanical equipment such as HVAC equipment would be mounted on the central portion of the rooftop. The HVAC equipment would not have condenser units and would connect to the campus chilled-water system. The noise levels generated by this equipment would vary but typically range from approximately 45 to 55 dBA at a distance of 50 feet. At the nearest noise-sensitive land uses, approximately 450 to 500 feet to the north, the noise levels from this equipment would be approximately 26 to 36 dBA and thus would be below the City's Noise Ordinance standard for multifamily residences of 55 dBA during the daytime hours (7:00 a.m. 7:00 p.m.), 50 dBA during the evening hours (7:00 p.m. to 10:00 p.m.), and 45 dBA during the nighttime hours (10:00 p.m. to 7:00 a.m.).

Additionally, SDSU is considering installation of a backup power generator. The noise from operation of emergency generators during an emergency is exempt from local noise standards, and operation would only occur during an emergency power outage, Routine testing (lasting approximately 30 minutes, during the day, twice per month) would create a noise level of less than 55 dBA, if included.

Therefore, on-site operational noise impacts would not be significant.

2. ***Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?***

The heavier pieces of construction equipment used at the project site could include bulldozers, graders, loaded trucks, water trucks, pavers, and cranes. No blasting or pile driving would take place as part of project construction. Groundborne vibration and noise information related to construction activities collected by Caltrans (2004) indicates that continuous vibrations with a peak particle velocity of approximately 0.1 inches/second begin to annoy people. Groundborne vibration from the heavy equipment used during construction of the proposed project is typically attenuated over short distances (i.e., within 25 to 50 feet). At the nearest off-site land uses, located approximately 200 or more feet away, groundborne vibration levels from project construction would be approximately 0.004 inches/second and therefore well below the threshold of annoyance. Construction-related activities are not anticipated to generate or expose persons to excessive groundborne vibration or noise levels. Therefore, potential impacts under this criterion would not be significant.

3. ***Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?***

As addressed in Threshold 1, operational noise from project-related traffic would not result in a significant increase in noise above existing traffic noise levels. Additionally, the proposed project would mostly involve replacement of an existing building and its associated uses, and the proposed mechanical equipment (HVAC and potentially an emergency generator) would neither result in exceedances of local noise standards nor create a substantial increase in ambient noise levels. Therefore, noise impacts would not be significant.

4. ***Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?***

As addressed in Threshold 1, the highest noise levels from construction are predicted to occur during demolition and grading activities when noise levels from construction would be as high as 72 dBA $L_{eq\ 12\text{-}hr}$ during the demolition phase at the nearest existing residences. At more typical distances, construction noise would range from approximately 54 to 66 dBA $L_{eq\ 12\text{-}hr}$. These noise levels would be audible at times, but they would not constitute a substantial increase. The impact would not be significant.

5. ***For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?***

The project site is not located close to an airport. The closest airport is Montgomery Field, which is approximately 4.6 miles northwest of the site, and the campus is not located within the 60 dBA CNEL noise contour of any airport and is not subjected to aircraft noise in excess of regulatory limits. Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels associated with aircraft. There would be no impact related to this aspect of the proposed project.

6. ***For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?***

The project site is not located in the vicinity of a private airstrip. The nearest private helipad (at Sharp Grossmont Hospital) is approximately 3.5 miles east of the project site. There would be no impact related to this aspect of the proposed project.

5.3 Cumulative Analysis and Conclusions

Construction noise impacts primarily affect the areas immediately adjacent to the construction site. Thus, although several construction activities simultaneously may occur at several areas on campus and in the surrounding community, the increased noise would not result in significant cumulative impacts due to the distance from the project construction activities.

As previously noted, the proposed project's traffic-related construction noise impacts would result in a 1 dB or less increase along the construction routes. Therefore, the increase in noise associated with project construction traffic would not be cumulatively considerable, and cumulative impacts would be less than significant.

As such, the proposed project would not result in significant noise impacts.

Sincerely,

Mike Greene, INCE Bd. Cert.
Environmental Specialist/Acoustician

6 References

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Attachment A

Field Noise Data Sheets

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 9/21/2018
Case Descr SDSU Aztec Recreation Center - Demolition

---- Receptor #1 ----

Descriptior	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	200	0
Dozer	No	40		81.7	220	0
Backhoe	No	40		77.6	200	0
Front End Loader	No	40		79.1	250	0
Tractor	No	40	84		220	0

Results

Equipment	Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq
Concrete Saw	77.5	70.5	N/A	N/A	N/A	N/A
Dozer	68.8	64.8	N/A	N/A	N/A	N/A
Backhoe	65.5	61.5	N/A	N/A	N/A	N/A
Front End Loader	65.1	61.2	N/A	N/A	N/A	N/A
Tractor	71.1	67.2	N/A	N/A	N/A	N/A
Total	77.5	73.5	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Descriptior	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	400	0
Dozer	No	40		81.7	400	0
Backhoe	No	40		77.6	400	0
Front End Loader	No	40		79.1	400	0
Tractor	No	40	84		400	0

	Results					
	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	71.5	64.5	N/A	N/A	N/A	N/A
Dozer	63.6	59.6	N/A	N/A	N/A	N/A
Backhoe	59.5	55.5	N/A	N/A	N/A	N/A
Front End Loader	61	57.1	N/A	N/A	N/A	N/A
Tractor	65.9	62	N/A	N/A	N/A	N/A
Total	71.5	67.9	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 9/21/2018
Case Descr SDSU Aztec Recreation Center - Site Preparation

---- Receptor #1 ----

		Baselines (dBA)		
Descriptior	Land Use	Daytime	Evening	Night
Residential	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Grader	No	40	85		200	0
Front End Loader	No	40		79.1	220	0

			Results			
	Calculated (dBA)			Noise Limits (dBA)		
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	73	69	N/A	N/A	N/A	N/A
Front End Loader	66.2	62.3	N/A	N/A	N/A	N/A
Total	73	69.8	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Descriptior	Land Use	Daytime	Evening	Night
Residential	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Grader	No	40	85		400	0
Front End Loader	No	40		79.1	400	0

			Results			
	Calculated (dBA)			Noise Limits (dBA)		
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	66.9	63	N/A	N/A	N/A	N/A
Front End Loader	61	57.1	N/A	N/A	N/A	N/A
Total	66.9	64	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 9/21/2018
Case Descr SDSU Aztec Recreation Center - Grading

---- Receptor #1 ----

		Baselines (dBA)		
Descriptior	Land Use	Daytime	Evening	Night
Residential	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Saw	No	20		89.6	200	0
Dozer	No	40		81.7	220	0
Front End Loader	No	40		79.1	200	0

			Results			
	Calculated (dBA)			Noise Limits (dBA)		
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	77.5	70.5	N/A	N/A	N/A	N/A
Dozer	68.8	64.8	N/A	N/A	N/A	N/A
Front End Loader	67.1	63.1	N/A	N/A	N/A	N/A
Total	77.5	72.2	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Descriptior	Land Use	Daytime	Evening	Night
Residential	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Saw	No	20		89.6	400	0
Dozer	No	40		81.7	400	0
Front End Loader	No	40		79.1	400	0

			Results			
	Calculated (dBA)			Noise Limits (dBA)		
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	71.5	64.5	N/A	N/A	N/A	N/A
Dozer	63.6	59.6	N/A	N/A	N/A	N/A

Front End Loader	61	57.1	N/A	N/A	N/A	N/A
Total	71.5	66.3	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 9/21/2018
Case Descr SDSU Aztec Recreation Center - Building Construction

---- Receptor #1 ----

		Baselines (dBA)		
Descriptior	Land Use	Daytime	Evening	Night
Residential	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Crane	No	16		80.6	200	0
Man Lift	No	20		74.7	220	0
Tractor	No	40	84		200	0
Welder / Torch	No	40		74	250	0

			Results			
	Calculated (dBA)			Noise Limits (dBA)		
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	68.5	60.6	N/A	N/A	N/A	N/A
Man Lift	61.8	54.8	N/A	N/A	N/A	N/A
Tractor	72	68	N/A	N/A	N/A	N/A
Welder / Torch	60	56	N/A	N/A	N/A	N/A
Total	72	69.1	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Descriptior	Land Use	Daytime	Evening	Night
Residential	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Crane	No	16		80.6	400	0
Man Lift	No	20		74.7	400	0
Tractor	No	40	84		400	0
Welder / Torch	No	40		74	400	0

			Results			
	Calculated (dBA)			Noise Limits (dBA)		
			Day		Evening	

Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	62.5	54.5	N/A	N/A	N/A	N/A
Man Lift	56.6	49.6	N/A	N/A	N/A	N/A
Tractor	65.9	62	N/A	N/A	N/A	N/A
Welder / Torch	55.9	52	N/A	N/A	N/A	N/A
Total	65.9	63.2	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 9/21/2018
Case Descr SDSU Aztec Recreation Center - Paving

---- Receptor #1 ----

		Baselines (dBA)		
Descriptior	Land Use	Daytime	Evening	Night
Residential	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Mixer Truck	No	40		78.8	200	0
Paver	No	50		77.2	220	0
Concrete Pump Truck	No	20		81.4	200	0
Pumps	No	50		80.9	250	0
Roller	No	20		80	220	0
Backhoe	No	40		77.6	200	0

			Results			
	Calculated (dBA)			Noise Limits (dBA)		
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Mixer Truck	66.8	62.8	N/A	N/A	N/A	N/A
Paver	64.4	61.3	N/A	N/A	N/A	N/A
Concrete Pump Truck	69.4	62.4	N/A	N/A	N/A	N/A
Pumps	67	64	N/A	N/A	N/A	N/A
Roller	67.1	60.1	N/A	N/A	N/A	N/A
Backhoe	65.5	61.5	N/A	N/A	N/A	N/A
Total	69.4	70	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Descriptior	Land Use	Daytime	Evening	Night
Residential	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Mixer Truck	No	40		78.8	400	0
Paver	No	50		77.2	400	0
Concrete Pump Truck	No	20		81.4	400	0
Pumps	No	50		80.9	400	0

Roller	No	20	80	400	0
Backhoe	No	40	77.6	400	0

			Results			
	Calculated (dBA)			Noise Limits (dBA)		
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Mixer Truck	60.7	56.8	N/A	N/A	N/A	N/A
Paver	59.2	56.1	N/A	N/A	N/A	N/A
Concrete Pump Truck	63.3	56.3	N/A	N/A	N/A	N/A
Pumps	62.9	59.9	N/A	N/A	N/A	N/A
Roller	61.9	54.9	N/A	N/A	N/A	N/A
Backhoe	59.5	55.5	N/A	N/A	N/A	N/A
Total	63.3	64.7	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 9/21/2018
Case Descr SDSU Aztec Recreation Center - Arch Coatings

---- Receptor #1 ----

		Baselines (dBA)		
Descriptior	Land Use	Daytime	Evening	Night
Residential	Residential	65	60	55

			Equipment Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)	No	40		77.7	200	0

			Results			
	Calculated (dBA)			Noise Limits (dBA)		
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	65.6	61.6	N/A	N/A	N/A	N/A
Total	65.6	61.6	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Descriptior	Land Use	Daytime	Evening	Night
Residential	Residential	65	60	55

			Equipment Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)	No	40		77.7	400	0

			Results			
	Calculated (dBA)			Noise Limits (dBA)		
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	59.6	55.6	N/A	N/A	N/A	N/A
Total	59.6	55.6	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Attachment B

Construction Noise Modeling Input and Output

Dudek				**23 September 2018**							
MG				**TNM 2.5**							
INPUT: ROADWAYS							**Average pavement type shall be used unless**				
PROJECT/CONTRACT:	**PN 11365**						**a State highway agency substantiates the use**				
RUN:	**SDSU Aztec Recreation Center - Existing**						**of a different type with the approval of FHWA**				
Roadway		**Points**									
Name	**Width**	**Name**	**No.**	**Coordinates (pavement)**			**Flow Control**			**Segment**	
				X	**Y**	**Z**	**Control Device**	**Speed Constraint**	**Percent Vehicles Affected**	**Pvmt Type**	**On Struct?**
	ft			ft	ft	ft		mph	%		
Montezuma Road west of 55th St	50.0	point1	1	922.3	1,763.3	450.00				Average	
		point3	3	1,028.2	1,777.2	450.00				Average	
		point4	4	1,252.1	1,784.1	450.00				Average	
		point5	5	1,382.3	1,766.7	450.00				Average	
		point6	6	1,509.0	1,737.2	450.00				Average	
		point7	7	1,856.2	1,619.2	450.00				Average	
		point8	8	2,066.2	1,548.0	450.00				Average	
		point9	9	2,208.5	1,516.8	450.00				Average	
		point10	10	2,338.7	1,490.8	450.00				Average	
		point11	11	2,545.2	1,464.7	450.00				Average	
		point12	12	2,819.5	1,452.6	450.00					
Hardy Avenue	30.0	point67	67	2,847.7	2,100.9	450.00				Average	
		point48	48	3,153.2	2,092.2	450.00				Average	
		point49	49	3,271.2	2,095.7	450.00				Average	
		point50	50	3,465.6	2,137.3	450.00				Average	
		point51	51	4,149.5	2,135.6	450.00					
55th Street south of Montezuma Road	50.0	point69	69	2,824.7	1,184.7	450.00				Average	
		point18	18	2,818.4	1,444.4	450.00					
Aztec Walk	30.0	point71	71	2,852.0	2,349.1	450.00				Average	
		point53	53	3,081.1	2,344.8	450.00				Average	
		point54	54	3,557.6	2,344.8	450.00					
55th Street	30.0	point73	73	2,628.9	3,082.0	450.00				Average	
		point56	56	2,656.4	3,190.8	450.00				Average	
		point57	57	2,671.6	3,281.8	450.00				Average	
		point58	58	2,690.8	3,487.0	450.00				Average	

		point59	59	2,684.0	3,549.0	450.00					
Canyon Crest Drive	50.0	point75	75	2,681.9	3,256.3	450.00				Average	
		point61	61	2,783.1	3,290.7	450.00				Average	
		point62	62	2,842.4	3,306.6	450.00				Average	
		point63	63	2,907.2	3,299.7	450.00				Average	
		point64	64	2,967.8	3,268.7	450.00				Average	
		point65	65	3,084.9	3,201.2	450.00				Average	
		point2	2	3,131.7	3,143.3	450.00					
Remington Road	30.0	point76	76	2,629.7	3,068.7	450.00				Average	
		point28	28	2,569.8	3,083.4	450.00				Average	
		point29	29	2,498.7	3,093.0	450.00				Average	
		point30	30	2,306.9	3,108.6	450.00				Average	
		point31	31	2,117.7	3,124.2	450.00				Average	
		point32	32	2,005.7	3,125.1	450.00				Average	
		point33	33	1,925.9	3,104.3	450.00				Average	
		point34	34	1,853.0	3,066.1	450.00				Average	
		point35	35	1,795.7	3,035.7	450.00				Average	
		point36	36	1,759.2	3,020.1	450.00				Average	
		point37	37	1,709.8	3,015.8	450.00				Average	
		point38	38	1,658.6	3,019.2	450.00				Average	
		point39	39	1,606.5	3,033.1	450.00				Average	
		point40	40	1,561.4	3,051.3	450.00				Average	
		point41	41	1,518.8	3,079.1	450.00				Average	
		point42	42	1,457.2	3,146.8	450.00				Average	
		point43	43	1,365.4	3,234.3	450.00				Average	
		point44	44	1,332.3	3,272.8	450.00				Average	
		point45	45	1,194.5	3,409.2	450.00				Average	
		point46	46	1,147.7	3,438.2	450.00					
Montezuma Road east of 55th St	50.0	point77	77	2,819.5	1,452.6	450.00				Average	
		point13	13	3,180.5	1,456.1	450.00				Average	
		point14	14	3,581.5	1,459.5	450.00				Average	
		point15	15	4,149.1	1,460.9	450.00				Average	
		point16	16	4,260.7	1,459.5	450.00					
55th Street north of Montezuma Road	50.0	point80	80	2,818.4	1,463.8	450.00				Average	
		point19	19	2,838.5	2,101.2	450.00					
55th Street north of Aztec Walk	50.0	point82	82	2,838.5	2,101.2	450.00				Average	
		point81	81	2,845.1	2,348.3	450.00				Average	
		point21	21	2,856.1	2,703.7	450.00				Average	
		point22	22	2,845.1	2,838.7	450.00				Average	

		point23	23	2,795.5	2,932.4	450.00				Average	
		point24	24	2,741.7	2,999.3	450.00				Average	
		point25	25	2,688.7	3,038.3	450.00				Average	
		point26	26	2,647.9	3,061.7	450.00				Average	
		point27	27	2,629.7	3,068.7	450.00					

Dudek 23 Septembe
MG TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages
PROJECT/CONTRACT: PN 11365
RUN: SDSU Aztec Recreation Center - Existing

Roadway Name	Points Name	No.	Segment Total Volume veh/hr	Autos P %	Autos S mph	MTrucks P %	MTrucks S mph	HTrucks P %	HTrucks S mph	Buses P %	Buses S mph	Motorcycles P %	Motorcycles S mph
Montezuma Road west of 55th St	point1	1	3011	97	35	2	35	1	35	0	0	0	0
	point3	3	3011	97	35	2	35	1	35	0	0	0	0
	point4	4	3011	97	35	2	35	1	35	0	0	0	0
	point5	5	3011	97	35	2	35	1	35	0	0	0	0
	point6	6	3011	97	35	2	35	1	35	0	0	0	0
	point7	7	3011	97	35	2	35	1	35	0	0	0	0
	point8	8	3011	97	35	2	35	1	35	0	0	0	0
	point9	9	3011	97	35	2	35	1	35	0	0	0	0
	point10	10	3011	97	35	2	35	1	35	0	0	0	0
	point11	11	3011	97	35	2	35	1	35	0	0	0	0
	point12	12											
Hardy Avenue	point67	67	691	97	25	2	25	1	25	0	0	0	0
	point48	48	691	97	25	2	25	1	25	0	0	0	0
	point49	49	691	97	25	2	25	1	25	0	0	0	0
	point50	50	691	97	25	2	25	1	25	0	0	0	0
	point51	51											
55th Street south of Montezuma Road	point69	69	0	0	0	0	0	0	0	0	0	0	0
	point18	18											
Aztec Walk	point71	71	0	0	0	0	0	0	0	0	0	0	0
	point53	53	0	0	0	0	0	0	0	0	0	0	0
	point54	54											
55th Street	point73	73	870	97	25	2	25	1	25	0	0	0	0
	point56	56	870	97	25	2	25	1	25	0	0	0	0

	point57	57	870	97	25	2	25	1	25	0	0	0	0
	point58	58	870	97	25	2	25	1	25	0	0	0	0
	point59	59											
Canyon Crest Drive	point75	75	0	0	0	0	0	0	0	0	0	0	0
	point61	61	0	0	0	0	0	0	0	0	0	0	0
	point62	62	0	0	0	0	0	0	0	0	0	0	0
	point63	63	0	0	0	0	0	0	0	0	0	0	0
	point64	64	0	0	0	0	0	0	0	0	0	0	0
	point65	65	0	0	0	0	0	0	0	0	0	0	0
	point2	2											
Remington Road	point76	76	323	97	25	2	25	1	25	0	0	0	0
	point28	28	323	97	25	2	25	1	25	0	0	0	0
	point29	29	323	97	25	2	25	1	25	0	0	0	0
	point30	30	323	97	25	2	25	1	25	0	0	0	0
	point31	31	323	97	25	2	25	1	25	0	0	0	0
	point32	32	323	97	25	2	25	1	25	0	0	0	0
	point33	33	323	97	25	2	25	1	25	0	0	0	0
	point34	34	323	97	25	2	25	1	25	0	0	0	0
	point35	35	323	97	25	2	25	1	25	0	0	0	0
	point36	36	323	97	25	2	25	1	25	0	0	0	0
	point37	37	323	97	25	2	25	1	25	0	0	0	0
	point38	38	323	97	25	2	25	1	25	0	0	0	0
	point39	39	323	97	25	2	25	1	25	0	0	0	0
	point40	40	323	97	25	2	25	1	25	0	0	0	0
	point41	41	323	97	25	2	25	1	25	0	0	0	0
	point42	42	323	97	25	2	25	1	25	0	0	0	0
	point43	43	323	97	25	2	25	1	25	0	0	0	0
	point44	44	323	97	25	2	25	1	25	0	0	0	0
	point45	45	323	97	25	2	25	1	25	0	0	0	0
	point46	46											
Montezuma Road east of 55th St	point77	77	3388	97	35	2	35	1	35	0	0	0	0
	point13	13	3388	97	35	2	35	1	35	0	0	0	0
	point14	14	3388	97	35	2	35	1	35	0	0	0	0
	point15	15	3388	97	35	2	35	1	35	0	0	0	0
	point16	16											
55th Street north of Montezuma Road	point80	80	1884	97	25	2	25	1	25	0	0	0	0

	point19	19											
55th Street north of Aztec Walk	point82	82	1193	97	25	2	25	1	25	0	0	0	0
	point81	81	1193	97	25	2	25	1	25	0	0	0	0
	point21	21	1193	97	25	2	25	1	25	0	0	0	0
	point22	22	1193	97	25	2	25	1	25	0	0	0	0
	point23	23	1193	97	25	2	25	1	25	0	0	0	0
	point24	24	1193	97	25	2	25	1	25	0	0	0	0
	point25	25	1193	97	25	2	25	1	25	0	0	0	0
	point26	26	1193	97	25	2	25	1	25	0	0	0	0
	point27	27											

Dudek						**23 September 2018**						
MG						**TNM 2.5**						
INPUT: RECEIVERS												
PROJECT/CONTRACT:	**PN 11365**											
RUN:	**SDSU Aztec Recreation Center - Existing**											
Receiver												
Name	**No.**	**#DUs**	**Coordinates (ground)**			**Height**	**Input Sound Levels and Criteria**				**Active**	
			X	**Y**	**Z**	**above**	**Existing**	**Impact Criteria**		**NR**	**in**	
						Ground	**LAeq1h**	**LAeq1h**	**Sub'l**	**Goal**	**Calc.**	
			ft	ft	ft	ft	dBA	dBA	dB	dB		
ST1	1	1	2,638.9	3,328.0	450.00	5.00	0.00	66	10.0	8.0	Y	
ST2	2	1	2,888.7	2,325.5	450.00	5.00	0.00	66	10.0	8.0	Y	
ST3	3	1	2,995.8	1,515.4	450.00	5.00	0.00	66	10.0	8.0	Y	
ST4	4	1	1,757.9	1,573.3	450.00	5.00	0.00	66	10.0	8.0	Y	
ST5	5	1	1,415.7	3,222.1	450.00	5.00	0.00	66	10.0	8.0	Y	

Dudek 23 September 2018
MG TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: PN 11365
RUN: SDSU Aztec Recreation Center - Existing

Barrier Name	Type	Height Min	Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Perturbs Incre-ment	#Up	#Dn	On Struct?	Important Reflec-tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier1	W	0.00	99.99	0.00				0.00	point1	1	1,446.4	3,212.8	450.00	20.00	0.00	0	0		
									point3	3	1,465.7	3,233.5	450.00	20.00	0.00	0	0		
									point4	4	1,411.9	3,295.5	450.00	20.00	0.00	0	0		
									point5	5	1,434.0	3,323.0	450.00	20.00	0.00	0	0		
									point6	6	1,515.3	3,245.9	450.00	20.00	0.00	0	0		
									point7	7	1,467.1	3,189.4	450.00	20.00					
Barrier1-2-2	W	0.00	99.99	0.00				0.00	point169	169	1,866.4	1,558.7	450.00	20.00	0.00	0	0		
									point126	126	2,079.8	1,489.3	450.00	20.00	0.00	0	0		
									point127	127	2,234.3	1,445.9	450.00	20.00	0.00	0	0		
									point128	128	2,442.6	1,411.2	450.00	20.00	0.00	0	0		
									point129	129	2,767.2	1,412.9	450.00	20.00	0.00	0	0		
									point130	130	2,769.0	1,298.3	450.00	20.00	0.00	0	0		
									point131	131	2,560.7	1,282.7	450.00	20.00	0.00	0	0		
									point132	132	2,355.9	1,307.0	450.00	20.00	0.00	0	0		
									point133	133	2,072.9	1,373.0	450.00	20.00	0.00	0	0		
									point134	134	1,838.6	1,435.5	450.00	20.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point171	171	1,844.0	2,006.5	450.00	20.00	0.00	0	0		
									point140	140	1,982.8	1,964.9	450.00	20.00	0.00	0	0		
									point141	141	1,970.8	1,914.7	450.00	20.00	0.00	0	0		
									point142	142	1,833.0	1,955.1	450.00	20.00	0.00	0	0		
									point143	143	1,811.1	1,873.1	450.00	20.00	0.00	0	0		
									point144	144	1,900.8	1,846.9	450.00	20.00	0.00	0	0		
									point145	145	1,908.5	1,877.5	450.00	20.00	0.00	0	0		
									point146	146	1,969.7	1,858.9	450.00	20.00	0.00	0	0		
									point147	147	1,950.0	1,782.4	450.00	20.00	0.00	0	0		
									point148	148	1,781.6	1,830.4	450.00	20.00	0.00	0	0		
									point149	149	1,827.6	2,009.8	450.00	20.00					
Barrier1-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point173	173	1,376.8	3,069.8	450.00	20.00	0.00	0	0		
									point159	159	1,382.3	1,989.6	450.00	20.00	0.00	0	0		
									point160	160	1,291.4	1,986.9	450.00	20.00	0.00	0	0		
									point161	161	1,299.7	3,078.1	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point175	175	1,084.8	3,315.6	450.00	20.00	0.00	0	0		
									point163	163	1,251.0	3,206.2	450.00	20.00	0.00	0	0		
									point164	164	1,242.2	2,248.3	450.00	20.00	0.00	0	0		
									point165	165	1,242.2	1,994.6	450.00	20.00	0.00	0	0		

									point166	166	953.6	1,990.2	450.00	20.00	0.00	0	0		
									point2	2	918.6	3,228.1	450.00	20.00					
Barrier1-2-2	W	0.00	99.99	0.00				0.00	point177	177	2,546.7	2,916.3	450.00	20.00	0.00	0	0		
									point41	41	2,548.5	2,860.8	450.00	20.00	0.00	0	0		
									point42	42	2,690.8	2,864.2	450.00	20.00	0.00	0	0		
									point43	43	2,689.1	2,918.0	450.00	20.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point179	179	2,447.8	2,857.3	450.00	20.00	0.00	0	0		
									point45	45	2,440.8	2,725.4	450.00	20.00	0.00	0	0		
									point46	46	2,475.5	2,725.4	450.00	20.00	0.00	0	0		
									point47	47	2,477.3	2,671.5	450.00	20.00	0.00	0	0		
									point48	48	2,432.2	2,668.1	450.00	20.00	0.00	0	0		
									point49	49	2,435.6	2,577.8	450.00	20.00	0.00	0	0		
									point50	50	2,466.9	2,577.8	450.00	20.00	0.00	0	0		
									point51	51	2,461.4	2,395.9	450.00	20.00	0.00	0	0		
									point52	52	2,750.7	2,382.2	450.00	20.00	0.00	0	0		
									point53	53	2,753.4	2,544.7	450.00	20.00	0.00	0	0		
									point54	54	2,750.7	2,638.4	450.00	20.00	0.00	0	0		
									point55	55	2,794.8	2,630.1	450.00	20.00	0.00	0	0		
									point56	56	2,789.3	2,784.5	450.00	20.00	0.00	0	0		
									point57	57	2,560.6	2,790.0	450.00	20.00	0.00	0	0		
									point58	58	2,555.1	2,842.3	450.00	20.00					
Barrier1-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point181	181	2,791.2	3,145.3	450.00	20.00	0.00	0	0		
									point60	60	2,788.5	3,037.8	450.00	20.00	0.00	0	0		
									point61	61	2,989.6	3,026.8	450.00	20.00	0.00	0	0		
									point62	62	2,997.9	3,137.0	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point183	183	2,854.6	2,955.1	450.00	20.00	0.00	0	0		
									point64	64	2,918.0	2,676.8	450.00	20.00	0.00	0	0		
									point65	65	3,055.7	2,709.9	450.00	20.00	0.00	0	0		
									point66	66	2,997.9	2,979.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point185	185	2,930.4	2,657.0	450.00	20.00	0.00	0	0		
									point68	68	2,927.8	2,567.6	450.00	20.00	0.00	0	0		
									point69	69	2,959.9	2,568.5	450.00	20.00	0.00	0	0		
									point70	70	2,960.8	2,657.0	450.00	20.00	0.00	0	0		
									point71	71	2,928.6	2,659.6	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point187	187	2,894.8	2,294.4	450.00	20.00	0.00	0	0		
									point86	86	3,154.5	2,293.0	450.00	20.00	0.00	0	0		
									point87	87	3,155.9	2,128.4	450.00	20.00	0.00	0	0		
									point88	88	2,891.4	2,124.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point189	189	3,153.4	2,641.4	450.00	20.00	0.00	0	0		
									point73	73	3,144.8	2,565.0	450.00	20.00	0.00	0	0		
									point74	74	3,162.1	2,511.2	450.00	20.00	0.00	0	0		
									point75	75	3,207.2	2,467.8	450.00	20.00	0.00	0	0		
									point76	76	3,287.1	2,438.3	450.00	20.00	0.00	0	0		
									point77	77	3,419.0	2,457.4	450.00	20.00	0.00	0	0		
									point78	78	3,486.7	2,519.9	450.00	20.00	0.00	0	0		
									point79	79	3,502.4	2,613.6	450.00	20.00	0.00	0	0		
									point80	80	3,462.4	2,693.5	450.00	20.00	0.00	0	0		
									point81	81	3,417.3	2,717.8	450.00	20.00	0.00	0	0		
									point82	82	3,349.6	2,738.6	450.00	20.00	0.00	0	0		

									point83	83	3,248.9	2,721.3	450.00	20.00	0.00	0	0		
									point84	84	3,186.4	2,696.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point191	191	2,871.8	2,059.8	450.00	20.00	0.00	0	0		
									point90	90	2,877.3	1,875.2	450.00	20.00	0.00	0	0		
									point91	91	2,977.8	1,873.8	450.00	20.00	0.00	0	0		
									point92	92	2,983.4	2,073.6	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point193	193	3,030.2	2,050.2	450.00	20.00	0.00	0	0		
									point94	94	3,172.1	2,050.2	450.00	20.00	0.00	0	0		
									point95	95	3,173.5	1,986.8	450.00	20.00	0.00	0	0		
									point96	96	3,028.9	1,988.2	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-	W	0.00	99.99	0.00				0.00	point195	195	2,867.7	1,781.1	450.00	20.00	0.00	0	0		
									point102	102	2,866.0	1,676.0	450.00	20.00	0.00	0	0		
									point103	103	3,440.6	1,670.8	450.00	20.00	0.00	0	0		
									point104	104	3,437.1	1,794.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-	W	0.00	99.99	0.00				0.00	point197	197	3,002.7	1,886.2	450.00	20.00	0.00	0	0		
									point98	98	3,001.3	1,957.9	450.00	20.00	0.00	0	0		
									point99	99	3,106.0	1,956.5	450.00	20.00	0.00	0	0		
									point100	100	3,107.4	1,880.7	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-	W	0.00	99.99	0.00				0.00	point199	199	2,864.4	1,635.0	450.00	20.00	0.00	0	0		
									point106	106	3,437.5	1,632.3	450.00	20.00	0.00	0	0		
									point107	107	3,440.3	1,530.3	450.00	20.00	0.00	0	0		
									point108	108	2,869.9	1,535.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-	W	0.00	99.99	0.00				0.00	point201	201	3,452.9	1,791.3	450.00	20.00	0.00	0	0		
									point122	122	3,452.9	1,676.7	450.00	20.00	0.00	0	0		
									point123	123	3,668.2	1,662.9	450.00	20.00	0.00	0	0		
									point124	124	3,680.3	1,765.3	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-	W	0.00	99.99	0.00				0.00	point203	203	3,468.5	1,631.6	450.00	20.00	0.00	0	0		
									point118	118	3,466.8	1,534.4	450.00	20.00	0.00	0	0		
									point119	119	3,720.2	1,527.5	450.00	20.00	0.00	0	0		
									point120	120	3,723.7	1,622.9	450.00	20.00					
Barrier1-2-2	W	0.00	99.99	0.00				0.00	point205	205	2,565.1	3,336.8	450.00	20.00	0.00	0	0		
									point21	21	2,623.0	3,329.9	450.00	20.00	0.00	0	0		
									point22	22	2,624.4	3,368.5	450.00	20.00	0.00	0	0		
									point23	23	2,561.0	3,374.0	450.00	20.00					
Barrier1-2-2	W	0.00	99.99	0.00				0.00	point207	207	1,924.5	3,177.0	450.00	50.00	0.00	0	0		
									point9	9	1,987.8	3,262.4	450.00	50.00	0.00	0	0		
									point10	10	2,054.0	3,262.4	450.00	50.00	0.00	0	0		
									point11	11	2,049.8	3,194.9	450.00	50.00	0.00	0	0		
									point167	167	2,103.6	3,185.3	450.00	50.00	0.00	0	0		
									point12	12	2,120.1	3,287.2	450.00	50.00	0.00	0	0		
									point13	13	2,063.6	3,287.2	450.00	50.00	0.00	0	0		
									point14	14	2,058.1	3,301.0	450.00	50.00	0.00	0	0		
									point15	15	1,997.5	3,303.7	450.00	50.00	0.00	0	0		
									point16	16	1,972.7	3,361.6	450.00	50.00	0.00	0	0		
									point17	17	1,934.1	3,350.6	450.00	50.00	0.00	0	0		
									point18	18	1,956.2	3,277.6	450.00	50.00	0.00	0	0		
									point19	19	1,885.9	3,192.2	450.00	50.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point209	209	2,579.7	3,381.5	450.00	20.00	0.00	0	0		
									point29	29	2,603.1	3,385.6	450.00	20.00	0.00	0	0		

									point30	30	2,579.7	3,512.4	450.00	20.00	0.00	0	0		
									point31	31	2,536.9	3,505.5	450.00	20.00					
Barrier1-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point211	211	2,711.9	3,449.0	450.00	20.00	0.00	0	0		
									point33	33	2,773.9	3,338.8	450.00	20.00	0.00	0	0		
									point34	34	2,816.6	3,362.2	450.00	20.00	0.00	0	0		
									point35	35	2,801.4	3,382.9	450.00	20.00	0.00	0	0		
									point36	36	2,857.9	3,414.5	450.00	20.00	0.00	0	0		
									point37	37	2,815.2	3,494.4	450.00	20.00	0.00	0	0		
									point38	38	2,773.9	3,469.6	450.00	20.00	0.00	0	0		
									point39	39	2,757.4	3,483.4	450.00	20.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point213	213	2,637.5	3,431.1	450.00	20.00	0.00	0	0		
									point25	25	2,610.0	3,433.8	450.00	20.00	0.00	0	0		
									point26	26	2,601.7	3,544.0	450.00	20.00	0.00	0	0		
									point27	27	2,645.8	3,552.3	450.00	20.00					
Barrier1-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point215	215	2,074.7	2,097.3	450.00	20.00	0.00	0	0		
									point151	151	2,107.5	2,084.1	450.00	20.00	0.00	0	0		
									point152	152	2,068.1	1,942.0	450.00	20.00	0.00	0	0		
									point153	153	2,025.5	1,945.3	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point217	217	2,024.4	1,850.1	450.00	20.00	0.00	0	0		
									point155	155	2,079.0	1,834.8	450.00	20.00	0.00	0	0		
									point156	156	2,062.6	1,776.9	450.00	20.00	0.00	0	0		
									point157	157	2,012.3	1,791.1	450.00	20.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point219	219	1,758.7	1,546.6	450.00	20.00	0.00	0	0		
									point136	136	1,763.9	1,504.9	450.00	20.00	0.00	0	0		
									point137	137	1,536.5	1,487.5	450.00	20.00	0.00	0	0		
									point138	138	1,534.8	1,570.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-	W	0.00	99.99	0.00				0.00	point221	221	2,855.8	1,400.8	450.00	20.00	0.00	0	0		
									point110	110	2,859.2	1,301.8	450.00	20.00	0.00	0	0		
									point111	111	2,939.1	1,291.4	450.00	20.00	0.00	0	0		
									point112	112	2,944.3	1,326.1	450.00	20.00	0.00	0	0		
									point113	113	3,071.0	1,329.6	450.00	20.00	0.00	0	0		
									point114	114	3,067.6	1,359.1	450.00	20.00	0.00	0	0		
									point115	115	3,216.8	1,355.6	450.00	20.00	0.00	0	0		
									point116	116	3,206.4	1,409.4	450.00	20.00					

Dudek							**23 September 2018**						
MG							**TNM 2.5**						
							Calculated with TNM 2.5						
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT:		**PN 11365**											
RUN:		**SDSU Aztec Recreation Center - Existing**											
BARRIER DESIGN:		**INPUT HEIGHTS**						**Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.**					
ATMOSPHERICS:		**68 deg F, 50% RH**											

Receiver													
Name	**No.**	**#DUs**	**Existing**	**No Barrier**					**With Barrier**				
			LAeq1h	**LAeq1h**		**Increase over existing**		**Type**	**Calculated**	**Noise Reduction**			
				Calculated	**Crit'n**	**Calculated**	**Crit'n Sub'l Inc**	**Impact**	**LAeq1h**	**Calculated**	**Goal**	**Calculated minus Goal**	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
ST1	1	1	0.0	61.9	66	61.9	10	----	61.9	0.0	8	-8.0	
ST2	2	1	0.0	62.6	66	62.6	10	----	62.6	0.0	8	-8.0	
ST3	3	1	0.0	68.6	66	68.6	10	Snd Lvl	68.6	0.0	8	-8.0	
ST4	4	1	0.0	67.0	66	67.0	10	Snd Lvl	67.0	0.0	8	-8.0	
ST5	5	1	0.0	59.3	66	59.3	10	----	59.3	0.0	8	-8.0	

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	5	0.0	0.0	0.0
All Impacted	2	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek **23 September 2018**
MG **TNM 2.5**

INPUT: ROADWAYS
PROJECT/CONTRACT: **PN 11365**
RUN: **SDSU Aztec Recreation Cntr - Ex pls Prj**

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Montezuma Road west of 55th St	50.0	point1	1	922.3	1,763.3	450.00				Average	
		point3	3	1,028.2	1,777.2	450.00				Average	
		point4	4	1,252.1	1,784.1	450.00				Average	
		point5	5	1,382.3	1,766.7	450.00				Average	
		point6	6	1,509.0	1,737.2	450.00				Average	
		point7	7	1,856.2	1,619.2	450.00				Average	
		point8	8	2,066.2	1,548.0	450.00				Average	
		point9	9	2,208.5	1,516.8	450.00				Average	
		point10	10	2,338.7	1,490.8	450.00				Average	
		point11	11	2,545.2	1,464.7	450.00				Average	
		point12	12	2,819.5	1,452.6	450.00					
Hardy Avenue	30.0	point67	67	2,847.7	2,100.9	450.00				Average	
		point48	48	3,153.2	2,092.2	450.00				Average	
		point49	49	3,271.2	2,095.7	450.00				Average	
		point50	50	3,465.6	2,137.3	450.00				Average	
		point51	51	4,149.5	2,135.6	450.00					
55th Street south of Montezuma Road	50.0	point69	69	2,824.7	1,184.7	450.00				Average	
		point18	18	2,818.4	1,444.4	450.00					
Aztec Walk	30.0	point71	71	2,852.0	2,349.1	450.00				Average	
		point53	53	3,081.1	2,344.8	450.00				Average	
		point54	54	3,557.6	2,344.8	450.00					
55th Street	30.0	point73	73	2,628.9	3,082.0	450.00				Average	
		point56	56	2,656.4	3,190.8	450.00				Average	
		point57	57	2,671.6	3,281.8	450.00				Average	
		point58	58	2,690.8	3,487.0	450.00				Average	

		point59	59	2,684.0	3,549.0	450.00					
Canyon Crest Drive	50.0	point75	75	2,681.9	3,256.3	450.00				Average	
		point61	61	2,783.1	3,290.7	450.00				Average	
		point62	62	2,842.4	3,306.6	450.00				Average	
		point63	63	2,907.2	3,299.7	450.00				Average	
		point64	64	2,967.8	3,268.7	450.00				Average	
		point65	65	3,084.9	3,201.2	450.00				Average	
		point2	2	3,131.7	3,143.3	450.00					
Remington Road	30.0	point76	76	2,629.7	3,068.7	450.00				Average	
		point28	28	2,569.8	3,083.4	450.00				Average	
		point29	29	2,498.7	3,093.0	450.00				Average	
		point30	30	2,306.9	3,108.6	450.00				Average	
		point31	31	2,117.7	3,124.2	450.00				Average	
		point32	32	2,005.7	3,125.1	450.00				Average	
		point33	33	1,925.9	3,104.3	450.00				Average	
		point34	34	1,853.0	3,066.1	450.00				Average	
		point35	35	1,795.7	3,035.7	450.00				Average	
		point36	36	1,759.2	3,020.1	450.00				Average	
		point37	37	1,709.8	3,015.8	450.00				Average	
		point38	38	1,658.6	3,019.2	450.00				Average	
		point39	39	1,606.5	3,033.1	450.00				Average	
		point40	40	1,561.4	3,051.3	450.00				Average	
		point41	41	1,518.8	3,079.1	450.00				Average	
		point42	42	1,457.2	3,146.8	450.00				Average	
		point43	43	1,365.4	3,234.3	450.00				Average	
		point44	44	1,332.3	3,272.8	450.00				Average	
		point45	45	1,194.5	3,409.2	450.00				Average	
		point46	46	1,147.7	3,438.2	450.00					
Montezuma Road east of 55th St	50.0	point77	77	2,819.5	1,452.6	450.00				Average	
		point13	13	3,180.5	1,456.1	450.00				Average	
		point14	14	3,581.5	1,459.5	450.00				Average	
		point15	15	4,149.1	1,460.9	450.00				Average	
		point16	16	4,260.7	1,459.5	450.00					
55th Street north of Montezuma Road	50.0	point80	80	2,818.4	1,463.8	450.00				Average	
		point19	19	2,838.5	2,101.2	450.00					
55th Street north of Aztec Walk	50.0	point82	82	2,838.5	2,101.2	450.00				Average	
		point81	81	2,845.1	2,348.3	450.00				Average	
		point21	21	2,856.1	2,703.7	450.00				Average	
		point22	22	2,845.1	2,838.7	450.00				Average	

		point23	23	2,795.5	2,932.4	450.00				Average	
		point24	24	2,741.7	2,999.3	450.00				Average	
		point25	25	2,688.7	3,038.3	450.00				Average	
		point26	26	2,647.9	3,061.7	450.00				Average	
		point27	27	2,629.7	3,068.7	450.00					

Dudek								**23 Septembe**						
MG								**TNM 2.5**						
INPUT: TRAFFIC FOR LAeq1h Percentages														
PROJECT/CONTRACT:	**PN 11365**													
RUN:	**SDSU Aztec Recreation Cntr - Ex pls Prj**													
Roadway	**Points**													
Name	**Name**	**No.**	**Segment**											
			Total	**Autos**		**MTrucks**		**HTrucks**		**Buses**		**Motorcycles**		
			Volume	**P**	**S**	**P**	**S**	**P**	**S**	**P**	**S**	**P**	**S**	
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph	
Montezuma Road west of 55th St	point1	1	3034	97	35	2	35	1	35	0	0	0	0	
	point3	3	3034	97	35	2	35	1	35	0	0	0	0	
	point4	4	3034	97	35	2	35	1	35	0	0	0	0	
	point5	5	3034	97	35	2	35	1	35	0	0	0	0	
	point6	6	3034	97	35	2	35	1	35	0	0	0	0	
	point7	7	3034	97	35	2	35	1	35	0	0	0	0	
	point8	8	3034	97	35	2	35	1	35	0	0	0	0	
	point9	9	3034	97	35	2	35	1	35	0	0	0	0	
	point10	10	3034	97	35	2	35	1	35	0	0	0	0	
	point11	11	3034	97	35	2	35	1	35	0	0	0	0	
	point12	12												
Hardy Avenue	point67	67	691	97	25	2	25	1	25	0	0	0	0	
	point48	48	691	97	25	2	25	1	25	0	0	0	0	
	point49	49	691	97	25	2	25	1	25	0	0	0	0	
	point50	50	691	97	25	2	25	1	25	0	0	0	0	
	point51	51												
55th Street south of Montezuma Road	point69	69	0	0	0	0	0	0	0	0	0	0	0	
	point18	18												
Aztec Walk	point71	71	0	0	0	0	0	0	0	0	0	0	0	
	point53	53	0	0	0	0	0	0	0	0	0	0	0	
	point54	54												
55th Street	point73	73	907	97	25	2	25	1	25	0	0	0	0	
	point56	56	907	97	25	2	25	1	25	0	0	0	0	

	point57	57	907	97	25	2	25	1	25	0	0	0	0
	point58	58	907	97	25	2	25	1	25	0	0	0	0
	point59	59											
Canyon Crest Drive	point75	75	0	0	0	0	0	0	0	0	0	0	0
	point61	61	0	0	0	0	0	0	0	0	0	0	0
	point62	62	0	0	0	0	0	0	0	0	0	0	0
	point63	63	0	0	0	0	0	0	0	0	0	0	0
	point64	64	0	0	0	0	0	0	0	0	0	0	0
	point65	65	0	0	0	0	0	0	0	0	0	0	0
	point2	2											
Remington Road	point76	76	324	97	25	2	25	1	25	0	0	0	0
	point28	28	324	97	25	2	25	1	25	0	0	0	0
	point29	29	324	97	25	2	25	1	25	0	0	0	0
	point30	30	324	97	25	2	25	1	25	0	0	0	0
	point31	31	324	97	25	2	25	1	25	0	0	0	0
	point32	32	324	97	25	2	25	1	25	0	0	0	0
	point33	33	324	97	25	2	25	1	25	0	0	0	0
	point34	34	324	97	25	2	25	1	25	0	0	0	0
	point35	35	324	97	25	2	25	1	25	0	0	0	0
	point36	36	324	97	25	2	25	1	25	0	0	0	0
	point37	37	324	97	25	2	25	1	25	0	0	0	0
	point38	38	324	97	25	2	25	1	25	0	0	0	0
	point39	39	324	97	25	2	25	1	25	0	0	0	0
	point40	40	324	97	25	2	25	1	25	0	0	0	0
	point41	41	324	97	25	2	25	1	25	0	0	0	0
	point42	42	324	97	25	2	25	1	25	0	0	0	0
	point43	43	324	97	25	2	25	1	25	0	0	0	0
	point44	44	324	97	25	2	25	1	25	0	0	0	0
	point45	45	324	97	25	2	25	1	25	0	0	0	0
	point46	46											
Montezuma Road east of 55th St	point77	77	3403	97	35	2	35	1	35	0	0	0	0
	point13	13	3403	97	35	2	35	1	35	0	0	0	0
	point14	14	3403	97	35	2	35	1	35	0	0	0	0
	point15	15	3403	97	35	2	35	1	35	0	0	0	0
	point16	16											
55th Street north of Montezuma Road	point80	80	1922	97	25	2	25	1	25	0	0	0	0

	point19	19											
55th Street north of Aztec Walk	point82	82	1231	97	25	2	25	1	25	0	0	0	0
	point81	81	1231	97	25	2	25	1	25	0	0	0	0
	point21	21	1231	97	25	2	25	1	25	0	0	0	0
	point22	22	1231	97	25	2	25	1	25	0	0	0	0
	point23	23	1231	97	25	2	25	1	25	0	0	0	0
	point24	24	1231	97	25	2	25	1	25	0	0	0	0
	point25	25	1231	97	25	2	25	1	25	0	0	0	0
	point26	26	1231	97	25	2	25	1	25	0	0	0	0
	point27	27											

Dudek 23 September 2018
MG TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: PN 11365
RUN: SDSU Aztec Recreation Cntr - Ex pls Prj

Receiver											
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active
			X	Y	Z	above	Existing	Impact Criteria		NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	2,638.9	3,328.0	450.00	5.00	0.00	66	10.0	8.0	Y
ST2	2	1	2,888.7	2,325.5	450.00	5.00	0.00	66	10.0	8.0	Y
ST3	3	1	2,995.8	1,515.4	450.00	5.00	0.00	66	10.0	8.0	Y
ST4	4	1	1,757.9	1,573.3	450.00	5.00	0.00	66	10.0	8.0	Y
ST5	5	1	1,415.7	3,222.1	450.00	5.00	0.00	66	10.0	8.0	Y

Dudek **23 September 2018**
MG **TNM 2.5**

INPUT: BARRIERS
PROJECT/CONTRACT: **PN 11365**
RUN: **SDSU Aztec Recreation Cntr - Ex pls Prj**

Barrier Name	Type	Height Min	Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Perturbs Incre-ment	#Up	#Dn	On Struct?	Important Reflec-tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier1	W	0.00	99.99	0.00				0.00	point1	1	1,446.4	3,212.8	450.00	20.00	0.00	0	0		
									point3	3	1,465.7	3,233.5	450.00	20.00	0.00	0	0		
									point4	4	1,411.9	3,295.5	450.00	20.00	0.00	0	0		
									point5	5	1,434.0	3,323.0	450.00	20.00	0.00	0	0		
									point6	6	1,515.3	3,245.9	450.00	20.00	0.00	0	0		
									point7	7	1,467.1	3,189.4	450.00	20.00					
Barrier1-2-2	W	0.00	99.99	0.00				0.00	point169	169	1,866.4	1,558.7	450.00	20.00	0.00	0	0		
									point126	126	2,079.8	1,489.3	450.00	20.00	0.00	0	0		
									point127	127	2,234.3	1,445.9	450.00	20.00	0.00	0	0		
									point128	128	2,442.6	1,411.2	450.00	20.00	0.00	0	0		
									point129	129	2,767.2	1,412.9	450.00	20.00	0.00	0	0		
									point130	130	2,769.0	1,298.3	450.00	20.00	0.00	0	0		
									point131	131	2,560.7	1,282.7	450.00	20.00	0.00	0	0		
									point132	132	2,355.9	1,307.0	450.00	20.00	0.00	0	0		
									point133	133	2,072.9	1,373.0	450.00	20.00	0.00	0	0		
									point134	134	1,838.6	1,435.5	450.00	20.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point171	171	1,844.0	2,006.5	450.00	20.00	0.00	0	0		
									point140	140	1,982.8	1,964.9	450.00	20.00	0.00	0	0		
									point141	141	1,970.8	1,914.7	450.00	20.00	0.00	0	0		
									point142	142	1,833.0	1,955.1	450.00	20.00	0.00	0	0		
									point143	143	1,811.1	1,873.1	450.00	20.00	0.00	0	0		
									point144	144	1,900.8	1,846.9	450.00	20.00	0.00	0	0		
									point145	145	1,908.5	1,877.5	450.00	20.00	0.00	0	0		
									point146	146	1,969.7	1,858.9	450.00	20.00	0.00	0	0		
									point147	147	1,950.0	1,782.4	450.00	20.00	0.00	0	0		
									point148	148	1,781.6	1,830.4	450.00	20.00	0.00	0	0		
									point149	149	1,827.6	2,009.8	450.00	20.00					
Barrier1-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point173	173	1,376.8	3,069.8	450.00	20.00	0.00	0	0		
									point159	159	1,382.3	1,989.6	450.00	20.00	0.00	0	0		
									point160	160	1,291.4	1,986.9	450.00	20.00	0.00	0	0		
									point161	161	1,299.7	3,078.1	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point175	175	1,084.8	3,315.6	450.00	20.00	0.00	0	0		
									point163	163	1,251.0	3,206.2	450.00	20.00	0.00	0	0		
									point164	164	1,242.2	2,248.3	450.00	20.00	0.00	0	0		
									point165	165	1,242.2	1,994.6	450.00	20.00	0.00	0	0		

									point166	166	953.6	1,990.2	450.00	20.00	0.00	0	0		
									point2	2	918.6	3,228.1	450.00	20.00					
Barrier1-2-2	W	0.00	99.99	0.00				0.00	point177	177	2,546.7	2,916.3	450.00	20.00	0.00	0	0		
									point41	41	2,548.5	2,860.8	450.00	20.00	0.00	0	0		
									point42	42	2,690.8	2,864.2	450.00	20.00	0.00	0	0		
									point43	43	2,689.1	2,918.0	450.00	20.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point179	179	2,447.8	2,857.3	450.00	20.00	0.00	0	0		
									point45	45	2,440.8	2,725.4	450.00	20.00	0.00	0	0		
									point46	46	2,475.5	2,725.4	450.00	20.00	0.00	0	0		
									point47	47	2,477.3	2,671.5	450.00	20.00	0.00	0	0		
									point48	48	2,432.2	2,668.1	450.00	20.00	0.00	0	0		
									point49	49	2,435.6	2,577.8	450.00	20.00	0.00	0	0		
									point50	50	2,466.9	2,577.8	450.00	20.00	0.00	0	0		
									point51	51	2,461.4	2,395.9	450.00	20.00	0.00	0	0		
									point52	52	2,750.7	2,382.2	450.00	20.00	0.00	0	0		
									point53	53	2,753.4	2,544.7	450.00	20.00	0.00	0	0		
									point54	54	2,750.7	2,638.4	450.00	20.00	0.00	0	0		
									point55	55	2,794.8	2,630.1	450.00	20.00	0.00	0	0		
									point56	56	2,789.3	2,784.5	450.00	20.00	0.00	0	0		
									point57	57	2,560.6	2,790.0	450.00	20.00	0.00	0	0		
									point58	58	2,555.1	2,842.3	450.00	20.00					
Barrier1-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point181	181	2,791.2	3,145.3	450.00	20.00	0.00	0	0		
									point60	60	2,788.5	3,037.8	450.00	20.00	0.00	0	0		
									point61	61	2,989.6	3,026.8	450.00	20.00	0.00	0	0		
									point62	62	2,997.9	3,137.0	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point183	183	2,854.6	2,955.1	450.00	20.00	0.00	0	0		
									point64	64	2,918.0	2,676.8	450.00	20.00	0.00	0	0		
									point65	65	3,055.7	2,709.9	450.00	20.00	0.00	0	0		
									point66	66	2,997.9	2,979.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point185	185	2,930.4	2,657.0	450.00	20.00	0.00	0	0		
									point68	68	2,927.8	2,567.6	450.00	20.00	0.00	0	0		
									point69	69	2,959.9	2,568.5	450.00	20.00	0.00	0	0		
									point70	70	2,960.8	2,657.0	450.00	20.00	0.00	0	0		
									point71	71	2,928.6	2,659.6	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point187	187	2,894.8	2,294.4	450.00	20.00	0.00	0	0		
									point86	86	3,154.5	2,293.0	450.00	20.00	0.00	0	0		
									point87	87	3,155.9	2,128.4	450.00	20.00	0.00	0	0		
									point88	88	2,891.4	2,124.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point189	189	3,153.4	2,641.4	450.00	20.00	0.00	0	0		
									point73	73	3,144.8	2,565.0	450.00	20.00	0.00	0	0		
									point74	74	3,162.1	2,511.2	450.00	20.00	0.00	0	0		
									point75	75	3,207.2	2,467.8	450.00	20.00	0.00	0	0		
									point76	76	3,287.1	2,438.3	450.00	20.00	0.00	0	0		
									point77	77	3,419.0	2,457.4	450.00	20.00	0.00	0	0		
									point78	78	3,486.7	2,519.9	450.00	20.00	0.00	0	0		
									point79	79	3,502.4	2,613.6	450.00	20.00	0.00	0	0		
									point80	80	3,462.4	2,693.5	450.00	20.00	0.00	0	0		
									point81	81	3,417.3	2,717.8	450.00	20.00	0.00	0	0		
									point82	82	3,349.6	2,738.6	450.00	20.00	0.00	0	0		

									point83	83	3,248.9	2,721.3	450.00	20.00	0.00	0	0		
									point84	84	3,186.4	2,696.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point191	191	2,871.8	2,059.8	450.00	20.00	0.00	0	0		
									point90	90	2,877.3	1,875.2	450.00	20.00	0.00	0	0		
									point91	91	2,977.8	1,873.8	450.00	20.00	0.00	0	0		
									point92	92	2,983.4	2,073.6	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point193	193	3,030.2	2,050.2	450.00	20.00	0.00	0	0		
									point94	94	3,172.1	2,050.2	450.00	20.00	0.00	0	0		
									point95	95	3,173.5	1,986.8	450.00	20.00	0.00	0	0		
									point96	96	3,028.9	1,988.2	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-:	W	0.00	99.99	0.00				0.00	point195	195	2,867.7	1,781.1	450.00	20.00	0.00	0	0		
									point102	102	2,866.0	1,676.0	450.00	20.00	0.00	0	0		
									point103	103	3,440.6	1,670.8	450.00	20.00	0.00	0	0		
									point104	104	3,437.1	1,794.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-:	W	0.00	99.99	0.00				0.00	point197	197	3,002.7	1,886.2	450.00	20.00	0.00	0	0		
									point98	98	3,001.3	1,957.9	450.00	20.00	0.00	0	0		
									point99	99	3,106.0	1,956.5	450.00	20.00	0.00	0	0		
									point100	100	3,107.4	1,880.7	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-:	W	0.00	99.99	0.00				0.00	point199	199	2,864.4	1,635.0	450.00	20.00	0.00	0	0		
									point106	106	3,437.5	1,632.3	450.00	20.00	0.00	0	0		
									point107	107	3,440.3	1,530.3	450.00	20.00	0.00	0	0		
									point108	108	2,869.9	1,535.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-:	W	0.00	99.99	0.00				0.00	point201	201	3,452.9	1,791.3	450.00	20.00	0.00	0	0		
									point122	122	3,452.9	1,676.7	450.00	20.00	0.00	0	0		
									point123	123	3,668.2	1,662.9	450.00	20.00	0.00	0	0		
									point124	124	3,680.3	1,765.3	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-:	W	0.00	99.99	0.00				0.00	point203	203	3,468.5	1,631.6	450.00	20.00	0.00	0	0		
									point118	118	3,466.8	1,534.4	450.00	20.00	0.00	0	0		
									point119	119	3,720.2	1,527.5	450.00	20.00	0.00	0	0		
									point120	120	3,723.7	1,622.9	450.00	20.00					
Barrier1-2-2	W	0.00	99.99	0.00				0.00	point205	205	2,565.1	3,336.8	450.00	20.00	0.00	0	0		
									point21	21	2,623.0	3,329.9	450.00	20.00	0.00	0	0		
									point22	22	2,624.4	3,368.5	450.00	20.00	0.00	0	0		
									point23	23	2,561.0	3,374.0	450.00	20.00					
Barrier1-2-2	W	0.00	99.99	0.00				0.00	point207	207	1,924.5	3,177.0	450.00	50.00	0.00	0	0		
									point9	9	1,987.8	3,262.4	450.00	50.00	0.00	0	0		
									point10	10	2,054.0	3,262.4	450.00	50.00	0.00	0	0		
									point11	11	2,049.8	3,194.9	450.00	50.00	0.00	0	0		
									point167	167	2,103.6	3,185.3	450.00	50.00	0.00	0	0		
									point12	12	2,120.1	3,287.2	450.00	50.00	0.00	0	0		
									point13	13	2,063.6	3,287.2	450.00	50.00	0.00	0	0		
									point14	14	2,058.1	3,301.0	450.00	50.00	0.00	0	0		
									point15	15	1,997.5	3,303.7	450.00	50.00	0.00	0	0		
									point16	16	1,972.7	3,361.6	450.00	50.00	0.00	0	0		
									point17	17	1,934.1	3,350.6	450.00	50.00	0.00	0	0		
									point18	18	1,956.2	3,277.6	450.00	50.00	0.00	0	0		
									point19	19	1,885.9	3,192.2	450.00	50.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point209	209	2,579.7	3,381.5	450.00	20.00	0.00	0	0		
									point29	29	2,603.1	3,385.6	450.00	20.00	0.00	0	0		

									point30	30	2,579.7	3,512.4	450.00	20.00	0.00	0	0		
									point31	31	2,536.9	3,505.5	450.00	20.00					
Barrier1-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point211	211	2,711.9	3,449.0	450.00	20.00	0.00	0	0		
									point33	33	2,773.9	3,338.8	450.00	20.00	0.00	0	0		
									point34	34	2,816.6	3,362.2	450.00	20.00	0.00	0	0		
									point35	35	2,801.4	3,382.9	450.00	20.00	0.00	0	0		
									point36	36	2,857.9	3,414.5	450.00	20.00	0.00	0	0		
									point37	37	2,815.2	3,494.4	450.00	20.00	0.00	0	0		
									point38	38	2,773.9	3,469.6	450.00	20.00	0.00	0	0		
									point39	39	2,757.4	3,483.4	450.00	20.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point213	213	2,637.5	3,431.1	450.00	20.00	0.00	0	0		
									point25	25	2,610.0	3,433.8	450.00	20.00	0.00	0	0		
									point26	26	2,601.7	3,544.0	450.00	20.00	0.00	0	0		
									point27	27	2,645.8	3,552.3	450.00	20.00					
Barrier1-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point215	215	2,074.7	2,097.3	450.00	20.00	0.00	0	0		
									point151	151	2,107.5	2,084.1	450.00	20.00	0.00	0	0		
									point152	152	2,068.1	1,942.0	450.00	20.00	0.00	0	0		
									point153	153	2,025.5	1,945.3	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point217	217	2,024.4	1,850.1	450.00	20.00	0.00	0	0		
									point155	155	2,079.0	1,834.8	450.00	20.00	0.00	0	0		
									point156	156	2,062.6	1,776.9	450.00	20.00	0.00	0	0		
									point157	157	2,012.3	1,791.1	450.00	20.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point219	219	1,758.7	1,546.6	450.00	20.00	0.00	0	0		
									point136	136	1,763.9	1,504.9	450.00	20.00	0.00	0	0		
									point137	137	1,536.5	1,487.5	450.00	20.00	0.00	0	0		
									point138	138	1,534.8	1,570.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point221	221	2,855.8	1,400.8	450.00	20.00	0.00	0	0		
									point110	110	2,859.2	1,301.8	450.00	20.00	0.00	0	0		
									point111	111	2,939.1	1,291.4	450.00	20.00	0.00	0	0		
									point112	112	2,944.3	1,326.1	450.00	20.00	0.00	0	0		
									point113	113	3,071.0	1,329.6	450.00	20.00	0.00	0	0		
									point114	114	3,067.6	1,359.1	450.00	20.00	0.00	0	0		
									point115	115	3,216.8	1,355.6	450.00	20.00	0.00	0	0		
									point116	116	3,206.4	1,409.4	450.00	20.00					

Dudek		**23 September 2018**
MG		**TNM 2.5**
		Calculated with TNM 2.5
RESULTS: SOUND LEVELS		
PROJECT/CONTRACT:	**PN 11365**	
RUN:	**SDSU Aztec Recreation Cntr - Ex pls Prj**	
BARRIER DESIGN:	**INPUT HEIGHTS**	**Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.**
ATMOSPHERICS:	**68 deg F, 50% RH**	

Receiver													
Name	**No.**	**#DUs**	**Existing**	**No Barrier**					**With Barrier**			
			LAeq1h	**LAeq1h**		**Increase over existing**		**Type**	**Calculated**	**Noise Reduction**		
				Calculated	**Crit'n**	**Calculated**	**Crit'n Sub'l Inc**	**Impact**	**LAeq1h**	**Calculated**	**Goal**	**Calculated minus Goal**
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	62.1	66	62.1	10	----	62.1	0.0	8	-8.0
ST2	2	1	0.0	62.7	66	62.7	10	----	62.7	0.0	8	-8.0
ST3	3	1	0.0	68.6	66	68.6	10	Snd Lvl	68.6	0.0	8	-8.0
ST4	4	1	0.0	67.1	66	67.1	10	Snd Lvl	67.1	0.0	8	-8.0
ST5	5	1	0.0	59.3	66	59.3	10	----	59.3	0.0	8	-8.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	5	0.0	0.0	0.0
All Impacted	2	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek 23 September 2018
MG TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: PN 11365
RUN: SDSU Aztec Recreation Center - Future

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Montezuma Road west of 55th St	50.0	point1	1	922.3	1,763.3	450.00				Average	
		point3	3	1,028.2	1,777.2	450.00				Average	
		point4	4	1,252.1	1,784.1	450.00				Average	
		point5	5	1,382.3	1,766.7	450.00				Average	
		point6	6	1,509.0	1,737.2	450.00				Average	
		point7	7	1,856.2	1,619.2	450.00				Average	
		point8	8	2,066.2	1,548.0	450.00				Average	
		point9	9	2,208.5	1,516.8	450.00				Average	
		point10	10	2,338.7	1,490.8	450.00				Average	
		point11	11	2,545.2	1,464.7	450.00				Average	
		point12	12	2,819.5	1,452.6	450.00					
Hardy Avenue	30.0	point67	67	2,847.7	2,100.9	450.00				Average	
		point48	48	3,153.2	2,092.2	450.00				Average	
		point49	49	3,271.2	2,095.7	450.00				Average	
		point50	50	3,465.6	2,137.3	450.00				Average	
		point51	51	4,149.5	2,135.6	450.00					
55th Street south of Montezuma Road	50.0	point69	69	2,824.7	1,184.7	450.00				Average	
		point18	18	2,818.4	1,444.4	450.00					
Aztec Walk	30.0	point71	71	2,852.0	2,349.1	450.00				Average	
		point53	53	3,081.1	2,344.8	450.00				Average	
		point54	54	3,557.6	2,344.8	450.00					
55th Street	30.0	point73	73	2,628.9	3,082.0	450.00				Average	
		point56	56	2,656.4	3,190.8	450.00				Average	
		point57	57	2,671.6	3,281.8	450.00				Average	
		point58	58	2,690.8	3,487.0	450.00				Average	

		point59	59	2,684.0	3,549.0	450.00					
Canyon Crest Drive	50.0	point75	75	2,681.9	3,256.3	450.00				Average	
		point61	61	2,783.1	3,290.7	450.00				Average	
		point62	62	2,842.4	3,306.6	450.00				Average	
		point63	63	2,907.2	3,299.7	450.00				Average	
		point64	64	2,967.8	3,268.7	450.00				Average	
		point65	65	3,084.9	3,201.2	450.00				Average	
		point2	2	3,131.7	3,143.3	450.00					
Remington Road	30.0	point76	76	2,629.7	3,068.7	450.00				Average	
		point28	28	2,569.8	3,083.4	450.00				Average	
		point29	29	2,498.7	3,093.0	450.00				Average	
		point30	30	2,306.9	3,108.6	450.00				Average	
		point31	31	2,117.7	3,124.2	450.00				Average	
		point32	32	2,005.7	3,125.1	450.00				Average	
		point33	33	1,925.9	3,104.3	450.00				Average	
		point34	34	1,853.0	3,066.1	450.00				Average	
		point35	35	1,795.7	3,035.7	450.00				Average	
		point36	36	1,759.2	3,020.1	450.00				Average	
		point37	37	1,709.8	3,015.8	450.00				Average	
		point38	38	1,658.6	3,019.2	450.00				Average	
		point39	39	1,606.5	3,033.1	450.00				Average	
		point40	40	1,561.4	3,051.3	450.00				Average	
		point41	41	1,518.8	3,079.1	450.00				Average	
		point42	42	1,457.2	3,146.8	450.00				Average	
		point43	43	1,365.4	3,234.3	450.00				Average	
		point44	44	1,332.3	3,272.8	450.00				Average	
		point45	45	1,194.5	3,409.2	450.00				Average	
		point46	46	1,147.7	3,438.2	450.00					
Montezuma Road east of 55th St	50.0	point77	77	2,819.5	1,452.6	450.00				Average	
		point13	13	3,180.5	1,456.1	450.00				Average	
		point14	14	3,581.5	1,459.5	450.00				Average	
		point15	15	4,149.1	1,460.9	450.00				Average	
		point16	16	4,260.7	1,459.5	450.00					
55th Street north of Montezuma Road	50.0	point80	80	2,818.4	1,463.8	450.00				Average	
		point19	19	2,838.5	2,101.2	450.00					
55th Street north of Aztec Walk	50.0	point82	82	2,838.5	2,101.2	450.00				Average	
		point81	81	2,845.1	2,348.3	450.00				Average	
		point21	21	2,856.1	2,703.7	450.00				Average	
		point22	22	2,845.1	2,838.7	450.00				Average	

		point23	23	2,795.5	2,932.4	450.00				Average	
		point24	24	2,741.7	2,999.3	450.00				Average	
		point25	25	2,688.7	3,038.3	450.00				Average	
		point26	26	2,647.9	3,061.7	450.00				Average	
		point27	27	2,629.7	3,068.7	450.00					

Dudek **23 Septembe**
MG **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Percentages
PROJECT/CONTRACT: **PN 11365**
RUN: **SDSU Aztec Recreation Center - Future**

Roadway	Points													
Name	Name	No.	Segment											
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles		
			Volume	P	S	P	S	P	S	P	S	P	S	
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph	
Montezuma Road west of 55th St	point1	1	3464	97	35	2	35	1	35	0	0	0	0	
	point3	3	3464	97	35	2	35	1	35	0	0	0	0	
	point4	4	3464	97	35	2	35	1	35	0	0	0	0	
	point5	5	3464	97	35	2	35	1	35	0	0	0	0	
	point6	6	3464	97	35	2	35	1	35	0	0	0	0	
	point7	7	3464	97	35	2	35	1	35	0	0	0	0	
	point8	8	3464	97	35	2	35	1	35	0	0	0	0	
	point9	9	3464	97	35	2	35	1	35	0	0	0	0	
	point10	10	3464	97	35	2	35	1	35	0	0	0	0	
	point11	11	3464	97	35	2	35	1	35	0	0	0	0	
	point12	12												
Hardy Avenue	point67	67	691	97	25	2	25	1	25	0	0	0	0	
	point48	48	691	97	25	2	25	1	25	0	0	0	0	
	point49	49	691	97	25	2	25	1	25	0	0	0	0	
	point50	50	691	97	25	2	25	1	25	0	0	0	0	
	point51	51												
55th Street south of Montezuma Road	point69	69	0	0	0	0	0	0	0	0	0	0	0	
	point18	18												
Aztec Walk	point71	71	0	0	0	0	0	0	0	0	0	0	0	
	point53	53	0	0	0	0	0	0	0	0	0	0	0	
	point54	54												
55th Street	point73	73	987	97	25	2	25	1	25	0	0	0	0	
	point56	56	987	97	25	2	25	1	25	0	0	0	0	

	point57	57	987	97	25	2	25	1	25	0	0	0	0
	point58	58	987	97	25	2	25	1	25	0	0	0	0
	point59	59											
Canyon Crest Drive	point75	75	0	0	0	0	0	0	0	0	0	0	0
	point61	61	0	0	0	0	0	0	0	0	0	0	0
	point62	62	0	0	0	0	0	0	0	0	0	0	0
	point63	63	0	0	0	0	0	0	0	0	0	0	0
	point64	64	0	0	0	0	0	0	0	0	0	0	0
	point65	65	0	0	0	0	0	0	0	0	0	0	0
	point2	2											
Remington Road	point76	76	336	97	25	2	25	1	25	0	0	0	0
	point28	28	336	97	25	2	25	1	25	0	0	0	0
	point29	29	336	97	25	2	25	1	25	0	0	0	0
	point30	30	336	97	25	2	25	1	25	0	0	0	0
	point31	31	336	97	25	2	25	1	25	0	0	0	0
	point32	32	336	97	25	2	25	1	25	0	0	0	0
	point33	33	336	97	25	2	25	1	25	0	0	0	0
	point34	34	336	97	25	2	25	1	25	0	0	0	0
	point35	35	336	97	25	2	25	1	25	0	0	0	0
	point36	36	336	97	25	2	25	1	25	0	0	0	0
	point37	37	336	97	25	2	25	1	25	0	0	0	0
	point38	38	336	97	25	2	25	1	25	0	0	0	0
	point39	39	336	97	25	2	25	1	25	0	0	0	0
	point40	40	336	97	25	2	25	1	25	0	0	0	0
	point41	41	336	97	25	2	25	1	25	0	0	0	0
	point42	42	336	97	25	2	25	1	25	0	0	0	0
	point43	43	336	97	25	2	25	1	25	0	0	0	0
	point44	44	336	97	25	2	25	1	25	0	0	0	0
	point45	45	336	97	25	2	25	1	25	0	0	0	0
	point46	46											
Montezuma Road east of 55th St	point77	77	3732	97	35	2	35	1	35	0	0	0	0
	point13	13	3732	97	35	2	35	1	35	0	0	0	0
	point14	14	3732	97	35	2	35	1	35	0	0	0	0
	point15	15	3732	97	35	2	35	1	35	0	0	0	0
	point16	16											
55th Street north of Montezuma Road	point80	80	2014	97	25	2	25	1	25	0	0	0	0

		point19	19											
55th Street north of Aztec Walk		point82	82	1323	97	25	2	25	1	25	0	0	0	0
		point81	81	1323	97	25	2	25	1	25	0	0	0	0
		point21	21	1323	97	25	2	25	1	25	0	0	0	0
		point22	22	1323	97	25	2	25	1	25	0	0	0	0
		point23	23	1323	97	25	2	25	1	25	0	0	0	0
		point24	24	1323	97	25	2	25	1	25	0	0	0	0
		point25	25	1323	97	25	2	25	1	25	0	0	0	0
		point26	26	1323	97	25	2	25	1	25	0	0	0	0
		point27	27											

Dudek						**23 September 2018**						
MG						**TNM 2.5**						
INPUT: RECEIVERS												
PROJECT/CONTRACT:	**PN 11365**											
RUN:	**SDSU Aztec Recreation Center - Future**											
Receiver												
Name	**No.**	**#DUs**	**Coordinates (ground)**			**Height**	**Input Sound Levels and Criteria**				**Active**	
			X	**Y**	**Z**	**above**	**Existing**	**Impact Criteria**		**NR**	**in**	
						Ground	**LAeq1h**	**LAeq1h**	**Sub'l**	**Goal**	**Calc.**	
			ft	ft	ft	ft	dBA	dBA	dB	dB		
ST1	1	1	2,638.9	3,328.0	450.00	5.00	0.00	66	10.0	8.0	Y	
ST2	2	1	2,888.7	2,325.5	450.00	5.00	0.00	66	10.0	8.0	Y	
ST3	3	1	2,995.8	1,515.4	450.00	5.00	0.00	66	10.0	8.0	Y	
ST4	4	1	1,757.9	1,573.3	450.00	5.00	0.00	66	10.0	8.0	Y	
ST5	5	1	1,415.7	3,222.1	450.00	5.00	0.00	66	10.0	8.0	Y	

Dudek **23 September 2018**
MG **TNM 2.5**

INPUT: BARRIERS
PROJECT/CONTRACT: **PN 11365**
RUN: **SDSU Aztec Recreation Center - Future**

Barrier Name	Type	Height Min	Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Perturbs Incre-ment	#Up	#Dn	On Struct?	Important Reflec-tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier1	W	0.00	99.99	0.00				0.00	point1	1	1,446.4	3,212.8	450.00	20.00	0.00	0	0		
									point3	3	1,465.7	3,233.5	450.00	20.00	0.00	0	0		
									point4	4	1,411.9	3,295.5	450.00	20.00	0.00	0	0		
									point5	5	1,434.0	3,323.0	450.00	20.00	0.00	0	0		
									point6	6	1,515.3	3,245.9	450.00	20.00	0.00	0	0		
									point7	7	1,467.1	3,189.4	450.00	20.00					
Barrier1-2-2	W	0.00	99.99	0.00				0.00	point169	169	1,866.4	1,558.7	450.00	20.00	0.00	0	0		
									point126	126	2,079.8	1,489.3	450.00	20.00	0.00	0	0		
									point127	127	2,234.3	1,445.9	450.00	20.00	0.00	0	0		
									point128	128	2,442.6	1,411.2	450.00	20.00	0.00	0	0		
									point129	129	2,767.2	1,412.9	450.00	20.00	0.00	0	0		
									point130	130	2,769.0	1,298.3	450.00	20.00	0.00	0	0		
									point131	131	2,560.7	1,282.7	450.00	20.00	0.00	0	0		
									point132	132	2,355.9	1,307.0	450.00	20.00	0.00	0	0		
									point133	133	2,072.9	1,373.0	450.00	20.00	0.00	0	0		
									point134	134	1,838.6	1,435.5	450.00	20.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point171	171	1,844.0	2,006.5	450.00	20.00	0.00	0	0		
									point140	140	1,982.8	1,964.9	450.00	20.00	0.00	0	0		
									point141	141	1,970.8	1,914.7	450.00	20.00	0.00	0	0		
									point142	142	1,833.0	1,955.1	450.00	20.00	0.00	0	0		
									point143	143	1,811.1	1,873.1	450.00	20.00	0.00	0	0		
									point144	144	1,900.8	1,846.9	450.00	20.00	0.00	0	0		
									point145	145	1,908.5	1,877.5	450.00	20.00	0.00	0	0		
									point146	146	1,969.7	1,858.9	450.00	20.00	0.00	0	0		
									point147	147	1,950.0	1,782.4	450.00	20.00	0.00	0	0		
									point148	148	1,781.6	1,830.4	450.00	20.00	0.00	0	0		
									point149	149	1,827.6	2,009.8	450.00	20.00					
Barrier1-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point173	173	1,376.8	3,069.8	450.00	20.00	0.00	0	0		
									point159	159	1,382.3	1,989.6	450.00	20.00	0.00	0	0		
									point160	160	1,291.4	1,986.9	450.00	20.00	0.00	0	0		
									point161	161	1,299.7	3,078.1	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point175	175	1,084.8	3,315.6	450.00	20.00	0.00	0	0		
									point163	163	1,251.0	3,206.2	450.00	20.00	0.00	0	0		
									point164	164	1,242.2	2,248.3	450.00	20.00	0.00	0	0		
									point165	165	1,242.2	1,994.6	450.00	20.00	0.00	0	0		

									point166	166	953.6	1,990.2	450.00	20.00	0.00	0	0		
									point2	2	918.6	3,228.1	450.00	20.00					
Barrier1-2-2	W	0.00	99.99	0.00				0.00	point177	177	2,546.7	2,916.3	450.00	20.00	0.00	0	0		
									point41	41	2,548.5	2,860.8	450.00	20.00	0.00	0	0		
									point42	42	2,690.8	2,864.2	450.00	20.00	0.00	0	0		
									point43	43	2,689.1	2,918.0	450.00	20.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point179	179	2,447.8	2,857.3	450.00	20.00	0.00	0	0		
									point45	45	2,440.8	2,725.4	450.00	20.00	0.00	0	0		
									point46	46	2,475.5	2,725.4	450.00	20.00	0.00	0	0		
									point47	47	2,477.3	2,671.5	450.00	20.00	0.00	0	0		
									point48	48	2,432.2	2,668.1	450.00	20.00	0.00	0	0		
									point49	49	2,435.6	2,577.8	450.00	20.00	0.00	0	0		
									point50	50	2,466.9	2,577.8	450.00	20.00	0.00	0	0		
									point51	51	2,461.4	2,395.9	450.00	20.00	0.00	0	0		
									point52	52	2,750.7	2,382.2	450.00	20.00	0.00	0	0		
									point53	53	2,753.4	2,544.7	450.00	20.00	0.00	0	0		
									point54	54	2,750.7	2,638.4	450.00	20.00	0.00	0	0		
									point55	55	2,794.8	2,630.1	450.00	20.00	0.00	0	0		
									point56	56	2,789.3	2,784.5	450.00	20.00	0.00	0	0		
									point57	57	2,560.6	2,790.0	450.00	20.00	0.00	0	0		
									point58	58	2,555.1	2,842.3	450.00	20.00					
Barrier1-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point181	181	2,791.2	3,145.3	450.00	20.00	0.00	0	0		
									point60	60	2,788.5	3,037.8	450.00	20.00	0.00	0	0		
									point61	61	2,989.6	3,026.8	450.00	20.00	0.00	0	0		
									point62	62	2,997.9	3,137.0	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point183	183	2,854.6	2,955.1	450.00	20.00	0.00	0	0		
									point64	64	2,918.0	2,676.8	450.00	20.00	0.00	0	0		
									point65	65	3,055.7	2,709.9	450.00	20.00	0.00	0	0		
									point66	66	2,997.9	2,979.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point185	185	2,930.4	2,657.0	450.00	20.00	0.00	0	0		
									point68	68	2,927.8	2,567.6	450.00	20.00	0.00	0	0		
									point69	69	2,959.9	2,568.5	450.00	20.00	0.00	0	0		
									point70	70	2,960.8	2,657.0	450.00	20.00	0.00	0	0		
									point71	71	2,928.6	2,659.6	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point187	187	2,894.8	2,294.4	450.00	20.00	0.00	0	0		
									point86	86	3,154.5	2,293.0	450.00	20.00	0.00	0	0		
									point87	87	3,155.9	2,128.4	450.00	20.00	0.00	0	0		
									point88	88	2,891.4	2,124.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point189	189	3,153.4	2,641.4	450.00	20.00	0.00	0	0		
									point73	73	3,144.8	2,565.0	450.00	20.00	0.00	0	0		
									point74	74	3,162.1	2,511.2	450.00	20.00	0.00	0	0		
									point75	75	3,207.2	2,467.8	450.00	20.00	0.00	0	0		
									point76	76	3,287.1	2,438.3	450.00	20.00	0.00	0	0		
									point77	77	3,419.0	2,457.4	450.00	20.00	0.00	0	0		
									point78	78	3,486.7	2,519.9	450.00	20.00	0.00	0	0		
									point79	79	3,502.4	2,613.6	450.00	20.00	0.00	0	0		
									point80	80	3,462.4	2,693.5	450.00	20.00	0.00	0	0		
									point81	81	3,417.3	2,717.8	450.00	20.00	0.00	0	0		
									point82	82	3,349.6	2,738.6	450.00	20.00	0.00	0	0		

									point83	83	3,248.9	2,721.3	450.00	20.00	0.00	0	0		
									point84	84	3,186.4	2,696.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point191	191	2,871.8	2,059.8	450.00	20.00	0.00	0	0		
									point90	90	2,877.3	1,875.2	450.00	20.00	0.00	0	0		
									point91	91	2,977.8	1,873.8	450.00	20.00	0.00	0	0		
									point92	92	2,983.4	2,073.6	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point193	193	3,030.2	2,050.2	450.00	20.00	0.00	0	0		
									point94	94	3,172.1	2,050.2	450.00	20.00	0.00	0	0		
									point95	95	3,173.5	1,986.8	450.00	20.00	0.00	0	0		
									point96	96	3,028.9	1,988.2	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point195	195	2,867.7	1,781.1	450.00	20.00	0.00	0	0		
									point102	102	2,866.0	1,676.0	450.00	20.00	0.00	0	0		
									point103	103	3,440.6	1,670.8	450.00	20.00	0.00	0	0		
									point104	104	3,437.1	1,794.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point197	197	3,002.7	1,886.2	450.00	20.00	0.00	0	0		
									point98	98	3,001.3	1,957.9	450.00	20.00	0.00	0	0		
									point99	99	3,106.0	1,956.5	450.00	20.00	0.00	0	0		
									point100	100	3,107.4	1,880.7	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point199	199	2,864.4	1,635.0	450.00	20.00	0.00	0	0		
									point106	106	3,437.5	1,632.3	450.00	20.00	0.00	0	0		
									point107	107	3,440.3	1,530.3	450.00	20.00	0.00	0	0		
									point108	108	2,869.9	1,535.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point201	201	3,452.9	1,791.3	450.00	20.00	0.00	0	0		
									point122	122	3,452.9	1,676.7	450.00	20.00	0.00	0	0		
									point123	123	3,668.2	1,662.9	450.00	20.00	0.00	0	0		
									point124	124	3,680.3	1,765.3	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point203	203	3,468.5	1,631.6	450.00	20.00	0.00	0	0		
									point118	118	3,466.8	1,534.4	450.00	20.00	0.00	0	0		
									point119	119	3,720.2	1,527.5	450.00	20.00	0.00	0	0		
									point120	120	3,723.7	1,622.9	450.00	20.00					
Barrier1-2-2	W	0.00	99.99	0.00				0.00	point205	205	2,565.1	3,336.8	450.00	20.00	0.00	0	0		
									point21	21	2,623.0	3,329.9	450.00	20.00	0.00	0	0		
									point22	22	2,624.4	3,368.5	450.00	20.00	0.00	0	0		
									point23	23	2,561.0	3,374.0	450.00	20.00					
Barrier1-2-2	W	0.00	99.99	0.00				0.00	point207	207	1,924.5	3,177.0	450.00	50.00	0.00	0	0		
									point9	9	1,987.8	3,262.4	450.00	50.00	0.00	0	0		
									point10	10	2,054.0	3,262.4	450.00	50.00	0.00	0	0		
									point11	11	2,049.8	3,194.9	450.00	50.00	0.00	0	0		
									point167	167	2,103.6	3,185.3	450.00	50.00	0.00	0	0		
									point12	12	2,120.1	3,287.2	450.00	50.00	0.00	0	0		
									point13	13	2,063.6	3,287.2	450.00	50.00	0.00	0	0		
									point14	14	2,058.1	3,301.0	450.00	50.00	0.00	0	0		
									point15	15	1,997.5	3,303.7	450.00	50.00	0.00	0	0		
									point16	16	1,972.7	3,361.6	450.00	50.00	0.00	0	0		
									point17	17	1,934.1	3,350.6	450.00	50.00	0.00	0	0		
									point18	18	1,956.2	3,277.6	450.00	50.00	0.00	0	0		
									point19	19	1,885.9	3,192.2	450.00	50.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point209	209	2,579.7	3,381.5	450.00	20.00	0.00	0	0		
									point29	29	2,603.1	3,385.6	450.00	20.00	0.00	0	0		

									point30	30	2,579.7	3,512.4	450.00	20.00	0.00	0	0		
									point31	31	2,536.9	3,505.5	450.00	20.00					
Barrier1-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point211	211	2,711.9	3,449.0	450.00	20.00	0.00	0	0		
									point33	33	2,773.9	3,338.8	450.00	20.00	0.00	0	0		
									point34	34	2,816.6	3,362.2	450.00	20.00	0.00	0	0		
									point35	35	2,801.4	3,382.9	450.00	20.00	0.00	0	0		
									point36	36	2,857.9	3,414.5	450.00	20.00	0.00	0	0		
									point37	37	2,815.2	3,494.4	450.00	20.00	0.00	0	0		
									point38	38	2,773.9	3,469.6	450.00	20.00	0.00	0	0		
									point39	39	2,757.4	3,483.4	450.00	20.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point213	213	2,637.5	3,431.1	450.00	20.00	0.00	0	0		
									point25	25	2,610.0	3,433.8	450.00	20.00	0.00	0	0		
									point26	26	2,601.7	3,544.0	450.00	20.00	0.00	0	0		
									point27	27	2,645.8	3,552.3	450.00	20.00					
Barrier1-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point215	215	2,074.7	2,097.3	450.00	20.00	0.00	0	0		
									point151	151	2,107.5	2,084.1	450.00	20.00	0.00	0	0		
									point152	152	2,068.1	1,942.0	450.00	20.00	0.00	0	0		
									point153	153	2,025.5	1,945.3	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point217	217	2,024.4	1,850.1	450.00	20.00	0.00	0	0		
									point155	155	2,079.0	1,834.8	450.00	20.00	0.00	0	0		
									point156	156	2,062.6	1,776.9	450.00	20.00	0.00	0	0		
									point157	157	2,012.3	1,791.1	450.00	20.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point219	219	1,758.7	1,546.6	450.00	20.00	0.00	0	0		
									point136	136	1,763.9	1,504.9	450.00	20.00	0.00	0	0		
									point137	137	1,536.5	1,487.5	450.00	20.00	0.00	0	0		
									point138	138	1,534.8	1,570.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point221	221	2,855.8	1,400.8	450.00	20.00	0.00	0	0		
									point110	110	2,859.2	1,301.8	450.00	20.00	0.00	0	0		
									point111	111	2,939.1	1,291.4	450.00	20.00	0.00	0	0		
									point112	112	2,944.3	1,326.1	450.00	20.00	0.00	0	0		
									point113	113	3,071.0	1,329.6	450.00	20.00	0.00	0	0		
									point114	114	3,067.6	1,359.1	450.00	20.00	0.00	0	0		
									point115	115	3,216.8	1,355.6	450.00	20.00	0.00	0	0		
									point116	116	3,206.4	1,409.4	450.00	20.00					

Dudek							**23 September 2018**					
MG							**TNM 2.5**					
							Calculated with TNM 2.5					
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		**PN 11365**										
RUN:		**SDSU Aztec Recreation Center - Future**										
BARRIER DESIGN:		**INPUT HEIGHTS**						**Average pavement type shall be used unless**				
								a State highway agency substantiates the use				
ATMOSPHERICS:		**68 deg F, 50% RH**						**of a different type with approval of FHWA.**				
Receiver												
Name	**No.**	**#DUs**	**Existing**	**No Barrier**					**With Barrier**			
			LAeq1h	**LAeq1h**		**Increase over existing**		**Type**	**Calculated**	**Noise Reduction**		
				Calculated	**Crit'n**	**Calculated**	**Crit'n**	**Impact**	**LAeq1h**	**Calculated**	**Goal**	**Calculated**
							Sub'l Inc					**minus**
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	62.4	66	62.4	10	----	62.4	0.0	8	-8.0
ST2	2	1	0.0	63.0	66	63.0	10	----	63.0	0.0	8	-8.0
ST3	3	1	0.0	69.0	66	69.0	10	Snd Lvl	69.0	0.0	8	-8.0
ST4	4	1	0.0	67.6	66	67.6	10	Snd Lvl	67.6	0.0	8	-8.0
ST5	5	1	0.0	59.5	66	59.5	10	----	59.5	0.0	8	-8.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	5	0.0	0.0	0.0
All Impacted	2	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek				**23 September 2018**							
MG				**TNM 2.5**							
INPUT: ROADWAYS							**Average pavement type shall be used unless**				
PROJECT/CONTRACT:	**PN 11365**						**a State highway agency substantiates the use**				
RUN:	**SDSU Aztec Recreation Cntr - Fut w Prj**						**of a different type with the approval of FHWA**				
Roadway		**Points**									
Name	**Width**	**Name**	**No.**	**Coordinates (pavement)**			**Flow Control**			**Segment**	
				X	**Y**	**Z**	**Control Device**	**Speed Constraint**	**Percent Vehicles Affected**	**Pvmt Type**	**On Struct?**
	ft			ft	ft	ft		mph	%		
Montezuma Road west of 55th St	50.0	point1	1	922.3	1,763.3	450.00				Average	
		point3	3	1,028.2	1,777.2	450.00				Average	
		point4	4	1,252.1	1,784.1	450.00				Average	
		point5	5	1,382.3	1,766.7	450.00				Average	
		point6	6	1,509.0	1,737.2	450.00				Average	
		point7	7	1,856.2	1,619.2	450.00				Average	
		point8	8	2,066.2	1,548.0	450.00				Average	
		point9	9	2,208.5	1,516.8	450.00				Average	
		point10	10	2,338.7	1,490.8	450.00				Average	
		point11	11	2,545.2	1,464.7	450.00				Average	
		point12	12	2,819.5	1,452.6	450.00					
Hardy Avenue	30.0	point67	67	2,847.7	2,100.9	450.00				Average	
		point48	48	3,153.2	2,092.2	450.00				Average	
		point49	49	3,271.2	2,095.7	450.00				Average	
		point50	50	3,465.6	2,137.3	450.00				Average	
		point51	51	4,149.5	2,135.6	450.00					
55th Street south of Montezuma Road	50.0	point69	69	2,824.7	1,184.7	450.00				Average	
		point18	18	2,818.4	1,444.4	450.00					
Aztec Walk	30.0	point71	71	2,852.0	2,349.1	450.00				Average	
		point53	53	3,081.1	2,344.8	450.00				Average	
		point54	54	3,557.6	2,344.8	450.00					
55th Street	30.0	point73	73	2,628.9	3,082.0	450.00				Average	
		point56	56	2,656.4	3,190.8	450.00				Average	
		point57	57	2,671.6	3,281.8	450.00				Average	
		point58	58	2,690.8	3,487.0	450.00				Average	

		point59	59	2,684.0	3,549.0	450.00					
Canyon Crest Drive	50.0	point75	75	2,681.9	3,256.3	450.00				Average	
		point61	61	2,783.1	3,290.7	450.00				Average	
		point62	62	2,842.4	3,306.6	450.00				Average	
		point63	63	2,907.2	3,299.7	450.00				Average	
		point64	64	2,967.8	3,268.7	450.00				Average	
		point65	65	3,084.9	3,201.2	450.00				Average	
		point2	2	3,131.7	3,143.3	450.00					
Remington Road	30.0	point76	76	2,629.7	3,068.7	450.00				Average	
		point28	28	2,569.8	3,083.4	450.00				Average	
		point29	29	2,498.7	3,093.0	450.00				Average	
		point30	30	2,306.9	3,108.6	450.00				Average	
		point31	31	2,117.7	3,124.2	450.00				Average	
		point32	32	2,005.7	3,125.1	450.00				Average	
		point33	33	1,925.9	3,104.3	450.00				Average	
		point34	34	1,853.0	3,066.1	450.00				Average	
		point35	35	1,795.7	3,035.7	450.00				Average	
		point36	36	1,759.2	3,020.1	450.00				Average	
		point37	37	1,709.8	3,015.8	450.00				Average	
		point38	38	1,658.6	3,019.2	450.00				Average	
		point39	39	1,606.5	3,033.1	450.00				Average	
		point40	40	1,561.4	3,051.3	450.00				Average	
		point41	41	1,518.8	3,079.1	450.00				Average	
		point42	42	1,457.2	3,146.8	450.00				Average	
		point43	43	1,365.4	3,234.3	450.00				Average	
		point44	44	1,332.3	3,272.8	450.00				Average	
		point45	45	1,194.5	3,409.2	450.00				Average	
		point46	46	1,147.7	3,438.2	450.00					
Montezuma Road east of 55th St	50.0	point77	77	2,819.5	1,452.6	450.00				Average	
		point13	13	3,180.5	1,456.1	450.00				Average	
		point14	14	3,581.5	1,459.5	450.00				Average	
		point15	15	4,149.1	1,460.9	450.00				Average	
		point16	16	4,260.7	1,459.5	450.00					
55th Street north of Montezuma Road	50.0	point80	80	2,818.4	1,463.8	450.00				Average	
		point19	19	2,838.5	2,101.2	450.00					
55th Street north of Aztec Walk	50.0	point82	82	2,838.5	2,101.2	450.00				Average	
		point81	81	2,845.1	2,348.3	450.00				Average	
		point21	21	2,856.1	2,703.7	450.00				Average	
		point22	22	2,845.1	2,838.7	450.00				Average	

			point23	23	2,795.5	2,932.4	450.00				Average	
			point24	24	2,741.7	2,999.3	450.00				Average	
			point25	25	2,688.7	3,038.3	450.00				Average	
			point26	26	2,647.9	3,061.7	450.00				Average	
			point27	27	2,629.7	3,068.7	450.00					

Dudek							**23 Septembe**							
MG							**TNM 2.5**							
INPUT: TRAFFIC FOR LAeq1h Percentages														
PROJECT/CONTRACT:	**PN 11365**													
RUN:	**SDSU Aztec Recreation Cntr - Fut w Prj**													
Roadway	**Points**													
Name	**Name**	**No.**	**Segment**											
			Total	**Autos**		**MTrucks**		**HTrucks**		**Buses**		**Motorcycles**		
			Volume	**P**	**S**	**P**	**S**	**P**	**S**	**P**	**S**	**P**	**S**	
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph	
Montezuma Road west of 55th St	point1	1	3487	97	35	2	35	1	35	0	0	0	0	
	point3	3	3487	97	35	2	35	1	35	0	0	0	0	
	point4	4	3487	97	35	2	35	1	35	0	0	0	0	
	point5	5	3487	97	35	2	35	1	35	0	0	0	0	
	point6	6	3487	97	35	2	35	1	35	0	0	0	0	
	point7	7	3487	97	35	2	35	1	35	0	0	0	0	
	point8	8	3487	97	35	2	35	1	35	0	0	0	0	
	point9	9	3487	97	35	2	35	1	35	0	0	0	0	
	point10	10	3487	97	35	2	35	1	35	0	0	0	0	
	point11	11	3487	97	35	2	35	1	35	0	0	0	0	
	point12	12												
Hardy Avenue	point67	67	691	97	25	2	25	1	25	0	0	0	0	
	point48	48	691	97	25	2	25	1	25	0	0	0	0	
	point49	49	691	97	25	2	25	1	25	0	0	0	0	
	point50	50	691	97	25	2	25	1	25	0	0	0	0	
	point51	51												
55th Street south of Montezuma Road	point69	69	0	0	0	0	0	0	0	0	0	0	0	
	point18	18												
Aztec Walk	point71	71	0	0	0	0	0	0	0	0	0	0	0	
	point53	53	0	0	0	0	0	0	0	0	0	0	0	
	point54	54												
55th Street	point73	73	1024	97	25	2	25	1	25	0	0	0	0	
	point56	56	1024	97	25	2	25	1	25	0	0	0	0	

	point57	57	1024	97	25	2	25	1	25	0	0	0	0
	point58	58	1024	97	25	2	25	1	25	0	0	0	0
	point59	59											
Canyon Crest Drive	point75	75	0	0	0	0	0	0	0	0	0	0	0
	point61	61	0	0	0	0	0	0	0	0	0	0	0
	point62	62	0	0	0	0	0	0	0	0	0	0	0
	point63	63	0	0	0	0	0	0	0	0	0	0	0
	point64	64	0	0	0	0	0	0	0	0	0	0	0
	point65	65	0	0	0	0	0	0	0	0	0	0	0
	point2	2											
Remington Road	point76	76	337	97	25	2	25	1	25	0	0	0	0
	point28	28	337	97	25	2	25	1	25	0	0	0	0
	point29	29	337	97	25	2	25	1	25	0	0	0	0
	point30	30	337	97	25	2	25	1	25	0	0	0	0
	point31	31	337	97	25	2	25	1	25	0	0	0	0
	point32	32	337	97	25	2	25	1	25	0	0	0	0
	point33	33	337	97	25	2	25	1	25	0	0	0	0
	point34	34	337	97	25	2	25	1	25	0	0	0	0
	point35	35	337	97	25	2	25	1	25	0	0	0	0
	point36	36	337	97	25	2	25	1	25	0	0	0	0
	point37	37	337	97	25	2	25	1	25	0	0	0	0
	point38	38	337	97	25	2	25	1	25	0	0	0	0
	point39	39	337	97	25	2	25	1	25	0	0	0	0
	point40	40	337	97	25	2	25	1	25	0	0	0	0
	point41	41	337	97	25	2	25	1	25	0	0	0	0
	point42	42	337	97	25	2	25	1	25	0	0	0	0
	point43	43	337	97	25	2	25	1	25	0	0	0	0
	point44	44	337	97	25	2	25	1	25	0	0	0	0
	point45	45	337	97	25	2	25	1	25	0	0	0	0
	point46	46											
Montezuma Road east of 55th St	point77	77	3747	97	35	2	35	1	35	0	0	0	0
	point13	13	3747	97	35	2	35	1	35	0	0	0	0
	point14	14	3747	97	35	2	35	1	35	0	0	0	0
	point15	15	3747	97	35	2	35	1	35	0	0	0	0
	point16	16											
55th Street north of Montezuma Road	point80	80	2052	97	25	2	25	1	25	0	0	0	0

		point19	19											
55th Street north of Aztec Walk		point82	82	1361	97	25	2	25	1	25	0	0	0	0
		point81	81	1361	97	25	2	25	1	25	0	0	0	0
		point21	21	1361	97	25	2	25	1	25	0	0	0	0
		point22	22	1361	97	25	2	25	1	25	0	0	0	0
		point23	23	1361	97	25	2	25	1	25	0	0	0	0
		point24	24	1361	97	25	2	25	1	25	0	0	0	0
		point25	25	1361	97	25	2	25	1	25	0	0	0	0
		point26	26	1361	97	25	2	25	1	25	0	0	0	0
		point27	27											

Dudek						**23 September 2018**						
MG						**TNM 2.5**						
INPUT: RECEIVERS												
PROJECT/CONTRACT:	**PN 11365**											
RUN:	**SDSU Aztec Recreation Cntr - Fut w Prj**											
Receiver												
Name	**No.**	**#DUs**	**Coordinates (ground)**			**Height**	**Input Sound Levels and Criteria**				**Active**	
			X	**Y**	**Z**	**above**	**Existing**	**Impact Criteria**		**NR**	**in**	
						Ground	**LAeq1h**	**LAeq1h**	**Sub'l**	**Goal**	**Calc.**	
			ft	ft	ft	ft	dBA	dBA	dB	dB		
ST1	1	1	2,638.9	3,328.0	450.00	5.00	0.00	66	10.0	8.0	Y	
ST2	2	1	2,888.7	2,325.5	450.00	5.00	0.00	66	10.0	8.0	Y	
ST3	3	1	2,995.8	1,515.4	450.00	5.00	0.00	66	10.0	8.0	Y	
ST4	4	1	1,757.9	1,573.3	450.00	5.00	0.00	66	10.0	8.0	Y	
ST5	5	1	1,415.7	3,222.1	450.00	5.00	0.00	66	10.0	8.0	Y	

Dudek 23 September 2018
MG TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: PN 11365
RUN: SDSU Aztec Recreation Cntr - Fut w Prj

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Perturbs Incre-ment	#Up	#Dn	On Struct?	Important Reflec-tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier1	W	0.00	99.99	0.00				0.00	point1	1	1,446.4	3,212.8	450.00	20.00	0.00	0	0		
									point3	3	1,465.7	3,233.5	450.00	20.00	0.00	0	0		
									point4	4	1,411.9	3,295.5	450.00	20.00	0.00	0	0		
									point5	5	1,434.0	3,323.0	450.00	20.00	0.00	0	0		
									point6	6	1,515.3	3,245.9	450.00	20.00	0.00	0	0		
									point7	7	1,467.1	3,189.4	450.00	20.00					
Barrier1-2-2	W	0.00	99.99	0.00				0.00	point169	169	1,866.4	1,558.7	450.00	20.00	0.00	0	0		
									point126	126	2,079.8	1,489.3	450.00	20.00	0.00	0	0		
									point127	127	2,234.3	1,445.9	450.00	20.00	0.00	0	0		
									point128	128	2,442.6	1,411.2	450.00	20.00	0.00	0	0		
									point129	129	2,767.2	1,412.9	450.00	20.00	0.00	0	0		
									point130	130	2,769.0	1,298.3	450.00	20.00	0.00	0	0		
									point131	131	2,560.7	1,282.7	450.00	20.00	0.00	0	0		
									point132	132	2,355.9	1,307.0	450.00	20.00	0.00	0	0		
									point133	133	2,072.9	1,373.0	450.00	20.00	0.00	0	0		
									point134	134	1,838.6	1,435.5	450.00	20.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point171	171	1,844.0	2,006.5	450.00	20.00	0.00	0	0		
									point140	140	1,982.8	1,964.9	450.00	20.00	0.00	0	0		
									point141	141	1,970.8	1,914.7	450.00	20.00	0.00	0	0		
									point142	142	1,833.0	1,955.1	450.00	20.00	0.00	0	0		
									point143	143	1,811.1	1,873.1	450.00	20.00	0.00	0	0		
									point144	144	1,900.8	1,846.9	450.00	20.00	0.00	0	0		
									point145	145	1,908.5	1,877.5	450.00	20.00	0.00	0	0		
									point146	146	1,969.7	1,858.9	450.00	20.00	0.00	0	0		
									point147	147	1,950.0	1,782.4	450.00	20.00	0.00	0	0		
									point148	148	1,781.6	1,830.4	450.00	20.00	0.00	0	0		
									point149	149	1,827.6	2,009.8	450.00	20.00					
Barrier1-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point173	173	1,376.8	3,069.8	450.00	20.00	0.00	0	0		
									point159	159	1,382.3	1,989.6	450.00	20.00	0.00	0	0		
									point160	160	1,291.4	1,986.9	450.00	20.00	0.00	0	0		
									point161	161	1,299.7	3,078.1	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point175	175	1,084.8	3,315.6	450.00	20.00	0.00	0	0		
									point163	163	1,251.0	3,206.2	450.00	20.00	0.00	0	0		
									point164	164	1,242.2	2,248.3	450.00	20.00	0.00	0	0		
									point165	165	1,242.2	1,994.6	450.00	20.00	0.00	0	0		

									point166	166	953.6	1,990.2	450.00	20.00	0.00	0	0		
									point2	2	918.6	3,228.1	450.00	20.00					
Barrier1-2-2	W	0.00	99.99	0.00				0.00	point177	177	2,546.7	2,916.3	450.00	20.00	0.00	0	0		
									point41	41	2,548.5	2,860.8	450.00	20.00	0.00	0	0		
									point42	42	2,690.8	2,864.2	450.00	20.00	0.00	0	0		
									point43	43	2,689.1	2,918.0	450.00	20.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point179	179	2,447.8	2,857.3	450.00	20.00	0.00	0	0		
									point45	45	2,440.8	2,725.4	450.00	20.00	0.00	0	0		
									point46	46	2,475.5	2,725.4	450.00	20.00	0.00	0	0		
									point47	47	2,477.3	2,671.5	450.00	20.00	0.00	0	0		
									point48	48	2,432.2	2,668.1	450.00	20.00	0.00	0	0		
									point49	49	2,435.6	2,577.8	450.00	20.00	0.00	0	0		
									point50	50	2,466.9	2,577.8	450.00	20.00	0.00	0	0		
									point51	51	2,461.4	2,395.9	450.00	20.00	0.00	0	0		
									point52	52	2,750.7	2,382.2	450.00	20.00	0.00	0	0		
									point53	53	2,753.4	2,544.7	450.00	20.00	0.00	0	0		
									point54	54	2,750.7	2,638.4	450.00	20.00	0.00	0	0		
									point55	55	2,794.8	2,630.1	450.00	20.00	0.00	0	0		
									point56	56	2,789.3	2,784.5	450.00	20.00	0.00	0	0		
									point57	57	2,560.6	2,790.0	450.00	20.00	0.00	0	0		
									point58	58	2,555.1	2,842.3	450.00	20.00					
Barrier1-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point181	181	2,791.2	3,145.3	450.00	20.00	0.00	0	0		
									point60	60	2,788.5	3,037.8	450.00	20.00	0.00	0	0		
									point61	61	2,989.6	3,026.8	450.00	20.00	0.00	0	0		
									point62	62	2,997.9	3,137.0	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point183	183	2,854.6	2,955.1	450.00	20.00	0.00	0	0		
									point64	64	2,918.0	2,676.8	450.00	20.00	0.00	0	0		
									point65	65	3,055.7	2,709.9	450.00	20.00	0.00	0	0		
									point66	66	2,997.9	2,979.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point185	185	2,930.4	2,657.0	450.00	20.00	0.00	0	0		
									point68	68	2,927.8	2,567.6	450.00	20.00	0.00	0	0		
									point69	69	2,959.9	2,568.5	450.00	20.00	0.00	0	0		
									point70	70	2,960.8	2,657.0	450.00	20.00	0.00	0	0		
									point71	71	2,928.6	2,659.6	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point187	187	2,894.8	2,294.4	450.00	20.00	0.00	0	0		
									point86	86	3,154.5	2,293.0	450.00	20.00	0.00	0	0		
									point87	87	3,155.9	2,128.4	450.00	20.00	0.00	0	0		
									point88	88	2,891.4	2,124.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point189	189	3,153.4	2,641.4	450.00	20.00	0.00	0	0		
									point73	73	3,144.8	2,565.0	450.00	20.00	0.00	0	0		
									point74	74	3,162.1	2,511.2	450.00	20.00	0.00	0	0		
									point75	75	3,207.2	2,467.8	450.00	20.00	0.00	0	0		
									point76	76	3,287.1	2,438.3	450.00	20.00	0.00	0	0		
									point77	77	3,419.0	2,457.4	450.00	20.00	0.00	0	0		
									point78	78	3,486.7	2,519.9	450.00	20.00	0.00	0	0		
									point79	79	3,502.4	2,613.6	450.00	20.00	0.00	0	0		
									point80	80	3,462.4	2,693.5	450.00	20.00	0.00	0	0		
									point81	81	3,417.3	2,717.8	450.00	20.00	0.00	0	0		
									point82	82	3,349.6	2,738.6	450.00	20.00	0.00	0	0		

									point83	83	3,248.9	2,721.3	450.00	20.00	0.00	0	0		
									point84	84	3,186.4	2,696.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point191	191	2,871.8	2,059.8	450.00	20.00	0.00	0	0		
									point90	90	2,877.3	1,875.2	450.00	20.00	0.00	0	0		
									point91	91	2,977.8	1,873.8	450.00	20.00	0.00	0	0		
									point92	92	2,983.4	2,073.6	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point193	193	3,030.2	2,050.2	450.00	20.00	0.00	0	0		
									point94	94	3,172.1	2,050.2	450.00	20.00	0.00	0	0		
									point95	95	3,173.5	1,986.8	450.00	20.00	0.00	0	0		
									point96	96	3,028.9	1,988.2	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point195	195	2,867.7	1,781.1	450.00	20.00	0.00	0	0		
									point102	102	2,866.0	1,676.0	450.00	20.00	0.00	0	0		
									point103	103	3,440.6	1,670.8	450.00	20.00	0.00	0	0		
									point104	104	3,437.1	1,794.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point197	197	3,002.7	1,886.2	450.00	20.00	0.00	0	0		
									point98	98	3,001.3	1,957.9	450.00	20.00	0.00	0	0		
									point99	99	3,106.0	1,956.5	450.00	20.00	0.00	0	0		
									point100	100	3,107.4	1,880.7	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point199	199	2,864.4	1,635.0	450.00	20.00	0.00	0	0		
									point106	106	3,437.5	1,632.3	450.00	20.00	0.00	0	0		
									point107	107	3,440.3	1,530.3	450.00	20.00	0.00	0	0		
									point108	108	2,869.9	1,535.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point201	201	3,452.9	1,791.3	450.00	20.00	0.00	0	0		
									point122	122	3,452.9	1,676.7	450.00	20.00	0.00	0	0		
									point123	123	3,668.2	1,662.9	450.00	20.00	0.00	0	0		
									point124	124	3,680.3	1,765.3	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point203	203	3,468.5	1,631.6	450.00	20.00	0.00	0	0		
									point118	118	3,466.8	1,534.4	450.00	20.00	0.00	0	0		
									point119	119	3,720.2	1,527.5	450.00	20.00	0.00	0	0		
									point120	120	3,723.7	1,622.9	450.00	20.00					
Barrier1-2-2	W	0.00	99.99	0.00				0.00	point205	205	2,565.1	3,336.8	450.00	20.00	0.00	0	0		
									point21	21	2,623.0	3,329.9	450.00	20.00	0.00	0	0		
									point22	22	2,624.4	3,368.5	450.00	20.00	0.00	0	0		
									point23	23	2,561.0	3,374.0	450.00	20.00					
Barrier1-2-2	W	0.00	99.99	0.00				0.00	point207	207	1,924.5	3,177.0	450.00	50.00	0.00	0	0		
									point9	9	1,987.8	3,262.4	450.00	50.00	0.00	0	0		
									point10	10	2,054.0	3,262.4	450.00	50.00	0.00	0	0		
									point11	11	2,049.8	3,194.9	450.00	50.00	0.00	0	0		
									point167	167	2,103.6	3,185.3	450.00	50.00	0.00	0	0		
									point12	12	2,120.1	3,287.2	450.00	50.00	0.00	0	0		
									point13	13	2,063.6	3,287.2	450.00	50.00	0.00	0	0		
									point14	14	2,058.1	3,301.0	450.00	50.00	0.00	0	0		
									point15	15	1,997.5	3,303.7	450.00	50.00	0.00	0	0		
									point16	16	1,972.7	3,361.6	450.00	50.00	0.00	0	0		
									point17	17	1,934.1	3,350.6	450.00	50.00	0.00	0	0		
									point18	18	1,956.2	3,277.6	450.00	50.00	0.00	0	0		
									point19	19	1,885.9	3,192.2	450.00	50.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point209	209	2,579.7	3,381.5	450.00	20.00	0.00	0	0		
									point29	29	2,603.1	3,385.6	450.00	20.00	0.00	0	0		

									point30	30	2,579.7	3,512.4	450.00	20.00	0.00	0	0		
									point31	31	2,536.9	3,505.5	450.00	20.00					
Barrier1-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point211	211	2,711.9	3,449.0	450.00	20.00	0.00	0	0		
									point33	33	2,773.9	3,338.8	450.00	20.00	0.00	0	0		
									point34	34	2,816.6	3,362.2	450.00	20.00	0.00	0	0		
									point35	35	2,801.4	3,382.9	450.00	20.00	0.00	0	0		
									point36	36	2,857.9	3,414.5	450.00	20.00	0.00	0	0		
									point37	37	2,815.2	3,494.4	450.00	20.00	0.00	0	0		
									point38	38	2,773.9	3,469.6	450.00	20.00	0.00	0	0		
									point39	39	2,757.4	3,483.4	450.00	20.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point213	213	2,637.5	3,431.1	450.00	20.00	0.00	0	0		
									point25	25	2,610.0	3,433.8	450.00	20.00	0.00	0	0		
									point26	26	2,601.7	3,544.0	450.00	20.00	0.00	0	0		
									point27	27	2,645.8	3,552.3	450.00	20.00					
Barrier1-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point215	215	2,074.7	2,097.3	450.00	20.00	0.00	0	0		
									point151	151	2,107.5	2,084.1	450.00	20.00	0.00	0	0		
									point152	152	2,068.1	1,942.0	450.00	20.00	0.00	0	0		
									point153	153	2,025.5	1,945.3	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2	W	0.00	99.99	0.00				0.00	point217	217	2,024.4	1,850.1	450.00	20.00	0.00	0	0		
									point155	155	2,079.0	1,834.8	450.00	20.00	0.00	0	0		
									point156	156	2,062.6	1,776.9	450.00	20.00	0.00	0	0		
									point157	157	2,012.3	1,791.1	450.00	20.00					
Barrier1-2-2-2-2	W	0.00	99.99	0.00				0.00	point219	219	1,758.7	1,546.6	450.00	20.00	0.00	0	0		
									point136	136	1,763.9	1,504.9	450.00	20.00	0.00	0	0		
									point137	137	1,536.5	1,487.5	450.00	20.00	0.00	0	0		
									point138	138	1,534.8	1,570.9	450.00	20.00					
Barrier1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-	W	0.00	99.99	0.00				0.00	point221	221	2,855.8	1,400.8	450.00	20.00	0.00	0	0		
									point110	110	2,859.2	1,301.8	450.00	20.00	0.00	0	0		
									point111	111	2,939.1	1,291.4	450.00	20.00	0.00	0	0		
									point112	112	2,944.3	1,326.1	450.00	20.00	0.00	0	0		
									point113	113	3,071.0	1,329.6	450.00	20.00	0.00	0	0		
									point114	114	3,067.6	1,359.1	450.00	20.00	0.00	0	0		
									point115	115	3,216.8	1,355.6	450.00	20.00	0.00	0	0		
									point116	116	3,206.4	1,409.4	450.00	20.00					

Dudek | **23 September 2018**
MG | **TNM 2.5**
Calculated with TNM 2.5

RESULTS: SOUND LEVELS

PROJECT/CONTRACT:	**PN 11365**
RUN:	**SDSU Aztec Recreation Cntr - Fut w Prj**
BARRIER DESIGN:	**INPUT HEIGHTS**
ATMOSPHERICS:	**68 deg F, 50% RH**

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver												
Name	**No.**	**#DUs**	**Existing**	**No Barrier**					**With Barrier**			
			LAeq1h	**LAeq1h**		**Increase over existing**		**Type**	**Calculated**	**Noise Reduction**		
				Calculated	**Crit'n**	**Calculated**	**Crit'n**	**Impact**	**LAeq1h**	**Calculated**	**Goal**	**Calculated**
							Sub'l Inc					**minus**
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	62.6	66	62.6	10	----	62.6	0.0	8	-8.0
ST2	2	1	0.0	63.2	66	63.2	10	----	63.2	0.0	8	-8.0
ST3	3	1	0.0	69.0	66	69.0	10	Snd Lvl	69.0	0.0	8	-8.0
ST4	4	1	0.0	67.7	66	67.7	10	Snd Lvl	67.7	0.0	8	-8.0
ST5	5	1	0.0	59.5	66	59.5	10	----	59.5	0.0	8	-8.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	5	0.0	0.0	0.0
All Impacted	2	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Attachment C

Traffic Noise Modeling Input and Output

DUDEK
CREATOR OF KERATA TECHNOLOGY

FIELD DATA REPORT

Field Noise Measurement Data

Record: 1096	
Project Name	*SDSU*
Observer(s)	*Connor Burke*
Date	*2018-09-17*

Meteorological Conditions	
Temp (F)	*80*
Humidity % (R.H.)	*47*
Wind	*Light*
Wind Speed (MPH)	*6*
Wind Direction	*East*
Sky	*Sunny*

Instrument and Calibrator Information	
Instrument Name List	*(ENC) Rion NL-52*
Instrument Name	*(ENC) Rion NL-52*
Instrument Name Lookup Key	*(ENC) Rion NL-52*
Manufacturer	*Rion*
Model	*NL-52*
Serial Number	*553896*
Calibrator Name	*(ENC) LD CAL150*
Calibrator Name	*(ENC) LD CAL150*
Calibrator Name Lookup Key	*(ENC) LD CAL150*
Calibrator Manufacturer	*Larson Davis*
Calibrator Model	*LD CAL150*
Calibrator Serial #	*5152*
Pre-Test (dBA SPL)	*94*
Post-Test (dBA SPL)	*94*
Windscreen	*Yes*
Weighting?	*A-WTD*
Slow/Fast?	*Slow*
ANSI?	*Yes*

Recordings	
Record #	*1*
Site ID	*ST5*
Site Location Lat/Long	*32.775645, -117.080944*
Begin (Time)	*11:00:00*
End (Time)	*11:50:00*
Leq	*53.1*
Lmax	*68*
Lmin	*39.7*
Other Lx?	*L90, L50, L10*
L90	*44.9*
L50	*41.1*
L10	*55.7*
Other Lx (Specify Metric)	*L*
Primary Noise Source	*Traffic*
Other Noise Sources (Background)	*Birds, Distant Aircraft, Distant Conversations / Yelling, Distant Dog Barking, Distant Gardener / Landscape Noise, Distant Traffic, Rustling Leaves*
Other Noise Sources Additional Description	*Construction. Drills.*
Is the same instrument and calibrator being used as previously noted?	*Yes*
Are the meteorological conditions the same as previously noted?	*Yes*

FIELD DATA REPORT

Source Info and Traffic Counts

Number of Lanes	*3*
Lane Width (feet)	*10*
Roadway Width (feet)	*30*
Roadway Width (m)	*9.2*
Distance to Roadway (feet)	*5*
Distance to Roadway (m)	*1.5*
Estimated Vehicle Speed (MPH)	*25*

Traffic Counts

Vehicle Count Summary	*A 100, MT 4, HT 0, B 0, MC 0*
Counting Both Directions?	*Yes*
Count Duration (minutes)	*0*
Vehicle Count Tally	
Select Method for Vehicle Counts	*Enter Manually*
Number of Vehicles - Autos	*100*
Number of Vehicles - Medium Trucks	*4*
Number of Vehicles - Heavy Trucks	*0*
Number of Vehicles - Buses	*0*
Number of Vehicles - Motorcyles	*0*

Description / Photos

Site Photos

Photo

FIELD DATA REPORT

Recordings

Record #	*2*
Site ID	*ST1*
Site Location Lat/Long	*32.775919, -117.076817*
Begin (Time)	*12:00:00*
End (Time)	*12:20:00*
Leq	*66.4*
Lmax	*74*
Lmin	*60.3*
Other Lx?	*L90, L50, L10*
L90	*61.2*
L50	*64.7*
L10	*69.7*
Other Lx (Specify Metric)	*L*
Primary Noise Source	*Construction*
Other Noise Sources (Background)	*Distant Conversations / Yelling, Distant Traffic*
Is the same instrument and calibrator being used as previously noted?	*Yes*
Are the meteorological conditions the same as previously noted?	*Yes*

Source Info and Traffic Counts

Number of Lanes	*0*
Lane Width (feet)	*10*
Roadway Width (feet)	*2*
Roadway Width (m)	*0.6*
Distance to Roadway (feet)	*15*
Distance to Roadway (m)	*4.6*
Estimated Vehicle Speed (MPH)	*25*

Traffic Counts

Vehicle Count Summary	*A 40, MT 1, HT 0, B 0, MC 0*
Counting Both Directions?	*Yes*
Count Duration (minutes)	*0*
Vehicle Count Tally	
Select Method for Vehicle Counts	*Enter Manually*
Number of Vehicles - Autos	*40*
Number of Vehicles - Medium Trucks	*1*
Number of Vehicles - Heavy Trucks	*0*
Number of Vehicles - Buses	*0*
Number of Vehicles - Motorcyles	*0*

Description / Photos

DUDEK
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FIELD DATA REPORT

Site Photos

Photo	

Recordings

Record #	*3*
Site ID	*ST2*
Site Location Lat/Long	*32.773133, -117.076016*
Begin (Time)	*12:40:00*
End (Time)	*12:50:00*
Leq	*63.5*
Lmax	*77.7*
Lmin	*53.2*
Other Lx?	*L90, L50, L10*
L90	*54.3*
L50	*58.7*
L10	*65.8*
Other Lx (Specify Metric)	*L*
Primary Noise Source	*Traffic*
Other Noise Sources (Background)	*Birds, Distant Conversations / Yelling, Distant Traffic*
Other Noise Sources Additional Description	*Crosswalk beep. Scooters. Skateboards.*
Is the same instrument and calibrator being used as previously noted?	*Yes*
Are the meteorological conditions the same as previously noted?	*Yes*

Source Info and Traffic Counts

Number of Lanes	*4*
Lane Width (feet)	*10*
Roadway Width (feet)	*40*
Roadway Width (m)	*12.2*
Distance to Roadway (feet)	*20*
Distance to Roadway (m)	*6.1*
Estimated Vehicle Speed (MPH)	*25*

FIELD DATA REPORT

Traffic Counts

Vehicle Count Summary	*A 140, MT 6, HT 2, B 0, MC 0*
Counting Both Directions?	*Yes*
Count Duration (minutes)	*0*
Vehicle Count Tally	
Select Method for Vehicle Counts	*Enter Manually*
Number of Vehicles - Autos	*140*
Number of Vehicles - Medium Trucks	*6*
Number of Vehicles - Heavy Trucks	*2*
Number of Vehicles - Buses	*0*
Number of Vehicles - Motorcyles	*0*

Description / Photos

Site Photos

Photo

Recordings

Record #	*4*
Site ID	*ST3*
Site Location Lat/Long	*32.770767, -117.075870*
Begin (Time)	*13:00:00*
End (Time)	*13:10:00*
Leq	*64.8*
Lmax	*72.9*
Lmin	*53.9*
Other Lx?	*L90, L50, L10*
L90	*56.1*
L50	*62*
L10	*68.7*
Other Lx (Specify Metric)	*L*
Primary Noise Source	*Traffic*
Other Noise Sources (Background)	*Distant Conversations / Yelling, Rustling Leaves*
Other Noise Sources Additional Description	*Radios*
Is the same instrument and calibrator being used	*Yes*

as previously noted?	
Are the meteorological conditions the same as previously noted?	Yes

Source Info and Traffic Counts

Number of Lanes	6
Lane Width (feet)	10
Roadway Width (feet)	60
Roadway Width (m)	18.3
Distance to Roadway (feet)	20
Distance to Roadway (m)	6.1
Estimated Vehicle Speed (MPH)	35

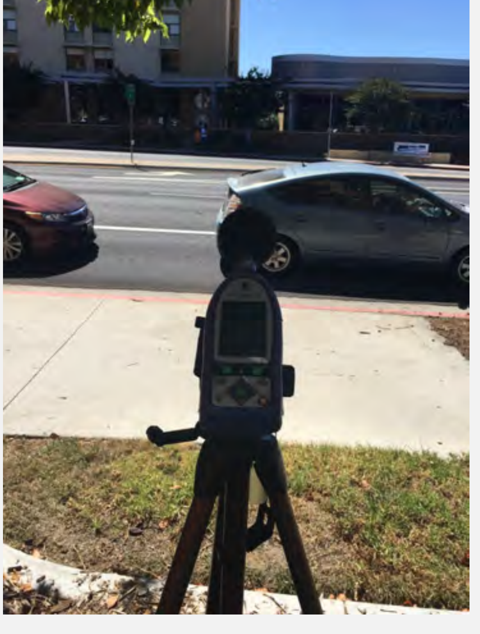
Traffic Counts

Vehicle Count Summary	A 160, MT 2, HT 0, B 1, MC 0
Counting Both Directions?	Yes
Count Duration (minutes)	0
Vehicle Count Tally	
Select Method for Vehicle Counts	Enter Manually
Number of Vehicles - Autos	160
Number of Vehicles - Medium Trucks	2
Number of Vehicles - Heavy Trucks	0
Number of Vehicles - Buses	1
Number of Vehicles - Motorcyles	0

Description / Photos

Site Photos

Photo



DUDEK
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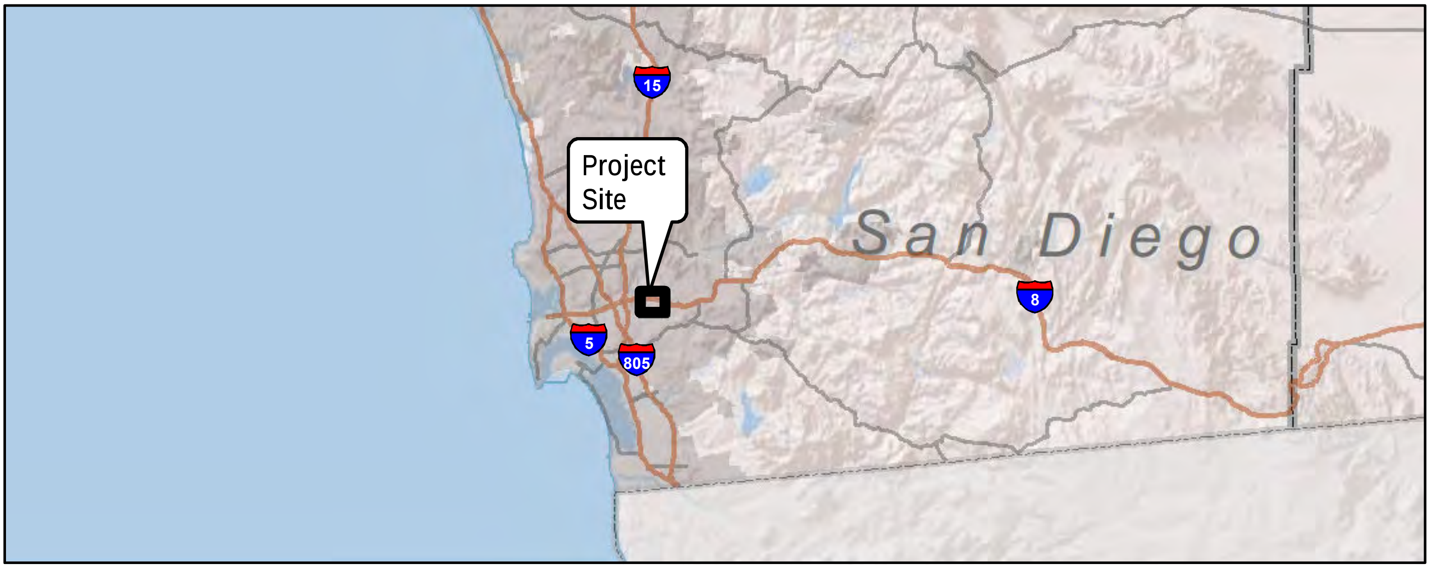
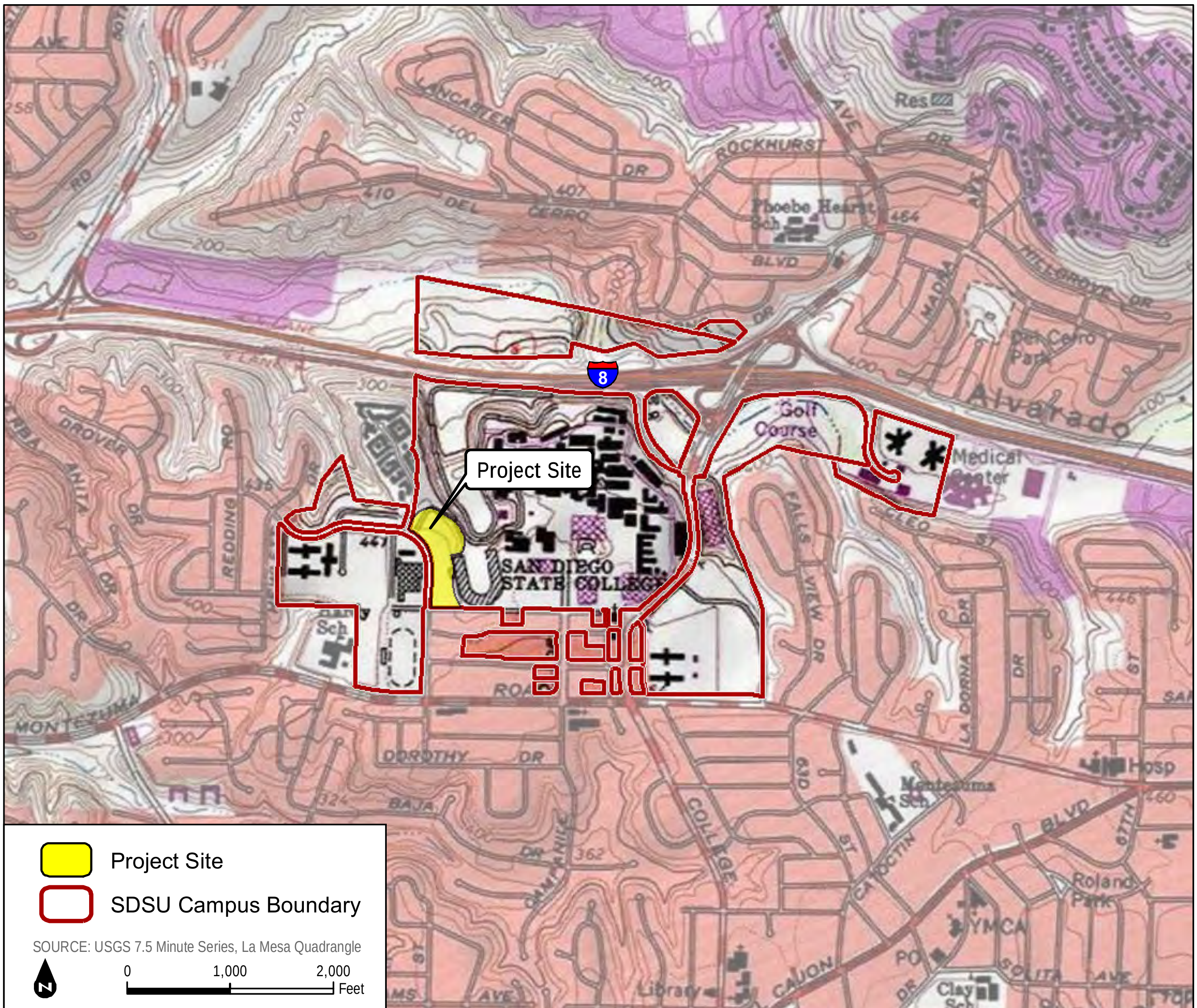
FIELD DATA REPORT

Recordings	
Record #	*5*
Site ID	*ST4*
Site Location Lat/Long	*32.770886, -117.079324*
Begin (Time)	*13:20:00*
End (Time)	*13:30:00*
Leq	*69.8*
Lmax	*80.6*
Lmin	*55.6*
Other Lx?	*L90, L50, L10*
L90	*59.7*
L50	*66.6*
L10	*73.8*
Other Lx (Specify Metric)	*L*
Primary Noise Source	*Traffic*
Other Noise Sources (Background)	*Distant Conversations / Yelling, Distant Traffic*
Is the same instrument and calibrator being used as previously noted?	*Yes*
Are the meteorological conditions the same as previously noted?	*Yes*

Source Info and Traffic Counts	
Number of Lanes	*5*
Lane Width (feet)	*10*
Roadway Width (feet)	*50*
Roadway Width (m)	*15.3*
Distance to Roadway (feet)	*15*
Distance to Roadway (m)	*4.6*
Estimated Vehicle Speed (MPH)	*40*

Traffic Counts	
Vehicle Count Summary	*A 210, MT 3, HT 1, B 6, MC 0*
Counting Both Directions?	*Yes*
Count Duration (minutes)	*0*
Vehicle Count Tally	
Select Method for Vehicle Counts	*Enter Manually*
Number of Vehicles - Autos	*210*
Number of Vehicles - Medium Trucks	*3*
Number of Vehicles - Heavy Trucks	*1*
Number of Vehicles - Buses	*6*
Number of Vehicles - Motorcyles	*0*





SDSU ARC Expansion Project

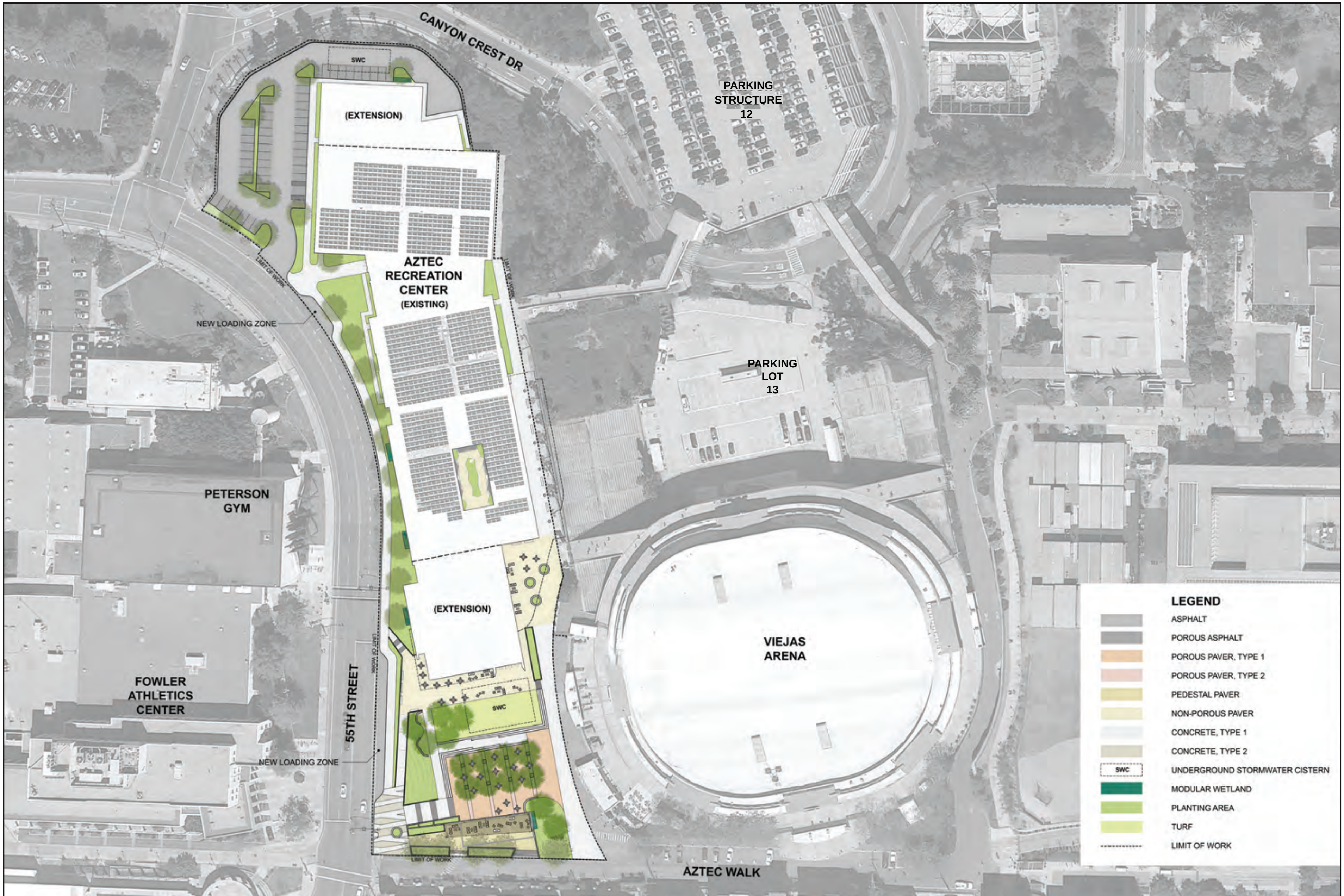
SAN DIEGO STATE UNIVERSITY

Figure 1
Project Location

SDSU ARC Expansion Project

San Diego State University

Figure 2
Project Site



SDSU ARC Expansion Project

San Diego State University

Figure 3

Site Plan

SOURCE: McCarthy / SmithGroupJJR 2018

SDSU ARC Expansion Project

SAN DIEGO STATE UNIVERSITY

Figure 5
Floor Plans

SDSU ARC Expansion Project

San Diego State University

Figure 6

Architectural Rendering – Southern Elevation

SDSU ARC Expansion Project

SAN DIEGO STATE UNIVERSITY

Figure 7
Noise Measurement and Modeling Locations

Appendix D
Air Quality Technical Memorandum

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MEMORANDUM

To:	Michael Haberkorn, Andrew Contreiras (Gatzke Dillon & Ballance)
From:	Adam Poll (Dudek)
Subject:	SDSU ARC Expansion Project – Air Quality Technical Memorandum
Date:	October 15, 2018
cc:	Sarah Lozano, Iulia Roman (Dudek)
Attachment(s):	Figures 1–6 A – CalEEMod Output Files B – CO Hotspot Analysis C – AERMOD and HARP2 Output Files

Dudek conducted an evaluation of potential impacts to air quality associated with the San Diego State University (SDSU) Aztec Recreation Center (ARC) Expansion (proposed project), located in the City of San Diego (City), California. This technical memorandum provides the results of the air quality evaluation.

The contents and organization of this technical memorandum are as follows: methodology, project location and setting, project description, existing conditions, impact analysis and conclusions, and references.

1 Methodology

1.1 Construction

The proposed project is located within the San Diego Air Basin (SDAB) and is within the jurisdictional boundaries of the San Diego County Air Pollution Control District (SDAPCD), which has jurisdiction over the County of San Diego (County), where the proposed project is located. The California Emissions Estimator Model (CalEEMod), Version 2016.3.2, was used to estimate emissions from construction of the proposed project (CAPCOA 2017). CalEEMod input parameters, including the land use type used to represent the proposed project and its size, construction schedule, and anticipated use of construction equipment, were based on information provided by SDAPCD or default model assumptions if project specifics were unavailable.

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. Criteria air pollutant emissions associated with construction of the proposed project were estimated for the following emission sources: operation of off-road construction equipment, paving, architectural coating, on-road hauling and vendor (material delivery) trucks, and worker vehicles. The detailed project construction assumptions are included in Attachment A.

Construction of the project components would result in a temporary addition of pollutants to the local airshed caused by soil disturbance, fugitive dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and for dust, the prevailing weather conditions. Fugitive dust (particulate matter less than or equal to 10 microns in diameter (coarse particulate matter; PM_{10}) and particulate matter less than or equal to 2.5 microns in diameter (fine particulate matter; $PM_{2.5}$)) emissions would primarily result from grading and site preparation activities. Oxides of nitrogen (NO_x) and carbon monoxide (CO) emissions would primarily result from the use of construction equipment and motor vehicles.

Emissions from the construction phase of project components were estimated using CalEEMod, Version 2016.3.2, which is available online (www.caleemod.com). The proposed project consists of three construction phases. For modeling, it was assumed that construction of project components would start in July 2019 and last approximately 16 months, ending in September 2020.[1] The estimated schedule for each construction phase of the proposed project is shown below:

- Demolition: July 2019–August 2019
- Site preparation: September 2019
- Grading: September 2019
- Building construction: July 2019–August 2020
- Architectural coating: August 2020
- Paving: August 2020–September 2020

The equipment mix and operating scenario for construction of the proposed project was provided by SDSU. For the analysis, daily equipment use was provided by SDSU and was assumed to operate 5 days per week. The default CalEEMod worker, vendor, and haul trips for each potential construction phase and trip distance for construction vehicles was assumed, which was a one-way distance of 10.8 miles for worker trips, 7.3 miles for vendor trips, and 20 miles for hauling trips. The estimated emissions were calculated based on the project schedule provided by SDSU.

Construction of project components would be subject to SDAPCD Rule 55, Fugitive Dust Control. This rule requires that construction of project components include steps to restrict visible emissions of fugitive dust beyond the property line (SDAPCD 2009). Compliance with Rule 55 would limit fugitive dust (PM_{10} and $PM_{2.5}$) that may be generated during grading and construction activities. Construction of project components would also be subject to SDAPCD Rule 67.0.1, Architectural Coatings. This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce volatile organic compound (VOC) emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories (SDAPCD 2015a). It was assumed that interior architectural coatings would have a VOC content of 50 grams per liter (g/L) and exterior coatings would have a VOC content of 100 g/L. The proposed construction equipment for each phase in the proposed project is shown in Table 1.

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1 The analysis assumes a construction start date of July 2019, which represents the earliest date construction would begin. Assuming the earliest start date for construction represents the worst-case scenario for criteria air pollutant emissions because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years.

Table 1. Construction Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
Phase Type	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Usage Hours per Day
Demolition	14	0	770	Concrete industrial saw	1	8
				Rubber-tired dozer	1	6
				Tractor/loader/backhoe	3	6
Site preparation	8	0	0	Grader	1	4
				Tractor/loader/backhoe	1	8
Grading	8	0	250	Concrete industrial saw	1	8
				Rubber-tired dozer	1	6
				Tractor/loader/backhoe	1	6
Building construction	80	12	0	Crane	1	4
				Forklift	1	2
				Tractor/loader/backhoe	1	4
				Welder	3	1
Architectural coatings	6	0	0	Air compressor	1	6
Paving	14	0	0	Cement and mortar mixer	1	8
				Paver	1	6
				Paving equipment	1	6
				Concrete pump	1	4
				Roller	1	6
				Tractor/loader/backhoe	1	6

Source: Attachment A.

Proposed construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment and soil disturbance) and off-site sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day depending on the level of activity, the specific type of operation, and, for particulate matter, the prevailing weather conditions. Therefore, such emission levels can be estimated only approximately.

The proposed project would be required to comply with SDAPCD Rule 55 to control dust emissions generated during any dust-generating activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active dust areas two times per day, with additional watering depending on weather conditions.

1.2 Operation

Mobile Sources (Motor Vehicles)

Mobile sources (vehicular traffic) generate VOC, NO_x, CO, sulfur oxide (SO_x), PM_{10}, and $PM_{2.5}$ emissions. The daily vehicle miles traveled was based on the traffic impact analysis conducted for the proposed project (LLG 2018). The proposed project is estimated to generate 604 daily trips. CalEEMod, Version 2016.3.2, was used to estimate daily emissions from proposed vehicular sources (refer to Attachment A). CalEEMod default data, including temperature, trip characteristics, variable start information, emissions factors, and trip distances, were conservatively used for the model inputs. A mixture of vehicles was assumed in accordance with the model outputs for traffic. Emission factors representing the vehicle mix and emissions for 2021 were conservatively used to estimate emissions associated with vehicular sources. The 2021 operational year represents the completion of the last phase of the proposed project and would represent maximum daily operational emissions.

Emergency Generator

In addition to operational emissions from vehicular sources, it was conservatively assumed that one natural gas–powered emergency generator would be installed for backup power for the proposed project. For a conservative analysis, it was assumed that the generator would be approximately 677 horsepower with a kilowatt rating of 400. The generator would be used only for emergency backup power in the event of power outages, except for routine testing and maintenance. Based on historical operations of emergency generators on the SDSU campus, it was assumed that the generator would run for 30 minutes every other week for a total of 50 hours per year. Emissions were calculated using CalEEMod.

Area Sources

CalEEMod was used to estimate operational emissions from area sources, including emissions from consumer product use, architectural coatings, and landscape maintenance equipment. Emissions associated with natural gas usage in space heating and water heating are calculated in the building energy use module of CalEEMod, as described in the following text.

Consumer products are chemically formulated products used by household and institutional consumers, including detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. Other paint products, furniture coatings, or architectural coatings are not considered consumer products (CAPCOA 2017). Consumer product VOC emissions are estimated in CalEEMod based on the floor area of buildings and on the default factor of pounds of VOC per building square foot per day. The CalEEMod default values for consumer products were assumed.

VOC off-gassing emissions result from evaporation of solvents contained in surface coatings such as paints and primers used during building maintenance. CalEEMod calculates the VOC evaporative emissions from application of surface coatings based on the VOC emission factor, building square footage, assumed fraction of surface area, and reapplication rate. The VOC emission factor is based on the VOC content of the surface coatings, and SDAPCD's Rule 67.0.1 (Architectural Coatings) governs the VOC content for interior and exterior coatings. The model default reapplication rate of 10% of area per year is assumed. Consistent with CalEEMod defaults, it is assumed that the surface area for painting equals 2.7 times the floor square footage, with 75% assumed for interior coating and 25% assumed for exterior surface coating (CAPCOA 2017). As a conservative measure, it was assumed that the reapplication of interior architectural coatings would have a VOC content of 50 g/L and exterior architectural coatings would have 100 g/L.

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chainsaws, and hedge trimmers. The emissions associated from landscape equipment use are estimated based on CalEEMod default values for emission factors (grams per square foot of nonresidential building space per day) and number of summer days (when landscape maintenance would generally be performed) and winter days. For the County, the average annual number of "summer" days is estimated to be 180 days (CAPCOA 2017). Emissions associated with potential landscape maintenance equipment were included to conservatively capture potential project operational emission sources.

2 Project Location and Setting

The project site is located in the western portion of the main SDSU campus within the existing Campus Master Plan boundary, approximately 8 miles east of downtown San Diego (Figure 1, Project Location). As shown on Figure 2, Project Site, the project site is bounded by 55th Street to the west, Aztec Circle Drive to the north, the remnants of the Aztec Bowl bleachers and a surface parking lot (Parking Lot 13) to the east, Viejas Arena to the south and southeast, and Aztec Walk to the south.

Additionally, land uses in the surrounding area include SDSU recreational facilities, a parking information center, and surface parking lots to the west; surface parking lots, the SDSU International Student Center, and multifamily residential uses to the north; surface and structure parking lots to the north and east; and fraternity row multifamily residential uses to the south. From the SDSU campus, the project site can be accessed via 55th Street. A sky bridge also provides pedestrian access to the site from Parking Structure 12, located northeast of the site.

3 Project Description

The proposed project is an expansion of the existing ARC—a single-story building consisting of approximately 74,000 square feet that includes a four-court gym and cardio fitness and weightlifting areas. The proposed project includes expanding the existing ARC by approximately 68,000 square feet. The expanded ARC building would consist of two stories, a proposed courtyard, and associated landscaping (Figure 3, Site Plan). Figure 5 (Floor Plans) and Figure 6 (Architectural Rendering – Southern Elevation) depict the floor plans and the basic design of the proposed project. In addition to newly renovated recreational spaces, the proposed project would also include solar panels on the roof of the proposed ARC (see Figure 2).

Currently, the ARC has a monthly membership level of approximately 16,000 individuals. Of this total, approximately 5%–6% are community members and the remainder are SDSU students, faculty, or staff. Currently, SDSU students have to pay to join the ARC; approximately 35% of the SDSU student body are members. Starting in fall 2021, the SDSU Student Body Center fee will increase; this fee increase will provide the financial resources to allow all students the ability to access the ARC. The expanded ARC will continue to be open to the public but will not be actively marketed to increase non-SDSU community membership. Implementation of the proposed project would result in an increase of up to 20 employees.

4 Existing Conditions

4.1 San Diego Air Basin Attainment Designation

An area is designated in attainment when it is in compliance with the National Ambient Air Quality Standards (NAAQS) and/or California Ambient Air Quality Standards (CAAQS). These standards are set by the U.S. Environmental Protection Agency (EPA) or California Air Resources Board (CARB) for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or the public welfare. The criteria pollutants include ozone (O_3), nitrogen dioxide (NO_2), CO, sulfur dioxide (SO_2), PM_{10}, and $PM_{2.5}$. Although there are no ambient standards for VOCs or NO_x, they are important as precursors to O_3.

Table 2 summarizes the SDAB's federal and state attainment designations for each of the criteria pollutants.

Table 2. San Diego Air Basin Attainment Classification

Pollutant	Federal Designation	State Designation
O_3 (1-hour)	Attainment (maintenance)[a]	Nonattainment
O_3 (8-hour – 1997) (8-hour – 2008)	Attainment (maintenance) nonattainment (moderate)	Nonattainment
CO	Unclassifiable/attainment[b]	Attainment
PM_{10}	Unclassifiable/attainment	Nonattainment
$PM_{2.5}$	Unclassifiable/attainment	Nonattainment
NO_2	Unclassifiable/attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen sulfide	(No federal standard)	Unclassified
Visibility-reducing particles	(No federal standard)	Unclassified

Sources: EPA 2018a (federal); CARB 2016a (state).
Notes: O_3 = ozone; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; NO_2 = nitrogen dioxide; SO_2 = sulfur dioxide.

[a] The federal 1-hour standard of 0.12 parts per million (ppm) was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in state implementation plans.

[b] The western and central portions of the SDAB are designated attainment, while the eastern portion is designated unclassifiable/attainment.

4.2 Air Quality Monitoring Data

SDAPCD operates a network of ambient air monitoring stations, which measure ambient concentrations of pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. SDAPCD monitors air quality conditions at 10 locations throughout the County. The nearest monitoring station to the proposed project for all pollutants except SO_2 is the Beardsley Street monitoring station. The Floyd Smith Drive monitoring station is the nearest station for SO_2. In addition, the Beardsley Street monitoring station did not have data for 2017. The next closest monitoring station was the First Street station in El Cajon. Ambient concentrations of pollutants from

2015 through 2017 are presented in Table 3. The number of days exceeding the ambient air quality standards are also shown in Table 3.

Table 3. Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
					2015	2016	2017	2015	2016	2017
O_3										
Beardsley Street (2015–2016); First Street (2017)	ppm	Maximum 1-hour concentration	State	0.09	0.089	0.072	0.096	0	0	1
	ppm	Maximum 8-hour concentration	State	0.070	0.067	0.061	0.082	0	0	9
			Federal	0.070	0.067	0.061	0.081	0	0	9
NO_2										
Beardsley Street (2015–2016); First Street (2017)	ppm	Maximum 1-hour concentration	State	0.18	0.062	0.073	0.045	0	0	0
			Federal	0.100	0.062	0.073	0.045	0	0	0
	ppm	Annual concentration	State	0.030	0.014	0.014	0.01	0	0	0
			Federal	0.053	0.014	0.014	0.01	0	0	0
CO										
Beardsley Street (2015–2016); First Street (2017)	ppm	Maximum 1-hour concentration	State	20	2.6	2.2	1.5	0	0	0
			Federal	35	2.6	2.2	1.5	0	0	0
	ppm	Maximum 8-hour concentration	State	9.0	1.9	1.7	1.4	0	0	0
			Federal	9	1.9	1.7	1.4	0	0	0
SO_2										
Floyd Smith Drive (2015); First Street (2016–2017)	ppm	Maximum 1-hour concentration	Federal	0.075	0.001	0.001	0.001	0	0	0
	ppm	Maximum 24-hour concentration	Federal	0.140	0.000	0.000	0.000	0	0	0
	ppm	Annual concentration	Federal	0.030	0.000	0.000	0.000	0	0	0

Table 3. Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
					2015	2016	2017	2015	2016	2017
***PM_{10}*[a]**										
Beardsley Street (2015–2016); First Street (2017)	$\mu g/m^3$	Maximum 24-hour concentration	State	50	54	51	49	5.7 (1)	— (1)	0.0 (0)
			Federal	150	53	49	50	0	0	0
	$\mu g/m^3$	Annual concentration	State	20	23.2	—	23	—	—	—
***$PM_{2.5}$*[a]**										
Beardsley Street (2015–2016); First Street (2017)	$\mu g/m^3$	Maximum 24-hour concentration	Federal	35	33.4	34.4	31.8	0	0	0
	$\mu g/m^3$	Annual concentration	State	12	10.2	—	9.6	—	—	—
			Federal	12.0	10.2	—	9.6	—	—	—

Sources: CARB 2016b; EPA 2018b.
Notes: O_3 = ozone; ppm = parts per million; NO_2 = nitrogen dioxide; CO = carbon monoxide; SO_2 = sulfur dioxide; PM_{10} = coarse particulate matter; $\mu g/m^3$ = micrograms per cubic meter; — = not available or applicable; $PM_{2.5}$ = fine particulate matter.
Data taken from CARB iADAM (http://www.arb.ca.gov/adam) and EPA AirData (http://www.epa.gov/airdata/) represent the highest concentrations experienced over a given year.
Exceedances of federal and state standards are only shown for O_3. Other criteria pollutants did not exceed federal or state standards during the years shown. There is no federal standard for 1-hour O_3, annual PM_{10}, or 24-hour SO_2 or a state 24-hour standard for $PM_{2.5}$.
Floyd Smith Drive (El Cajon) monitoring station is located at 10537 Floyd Smith Drive, El Cajon, California.
[a] Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and every 1 to 3 days, respectively. Number of days exceeding the standards is a mathematical estimate of the number of days concentrations would have been greater than the level of the standard had each day been monitored. The numbers in parentheses are the measured number of samples that exceeded the standard.

5 Impact Analysis and Conclusions

5.1 Thresholds of Significance

CEQA Guidelines

CEQA Guidelines, Section 15332, Exemptions for In-Fill Development Projects, would apply to the proposed project. With respect to air quality, the following condition of CEQA Guidelines, Section 15332, is relevant:

(d) Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.

To determine whether or not the proposed project would result in significant effects relating to air quality, the Appendix G thresholds from the CEQA Guidelines were used, as outlined below.

The State of California has developed guidelines to address the significance of air quality impacts based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), which provides guidance that a project would have a significant environmental impact if it would:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
4. Expose sensitive receptors to substantial pollutant concentrations.
5. Create objectionable odors affecting a substantial number of people.

SDAPCD

As part of its air quality permitting process, the SDAPCD has established thresholds in Rule 20.2 requiring the preparation of air quality impact assessments for permitted stationary sources. The SDAPCD sets forth quantitative emission thresholds below which a stationary source would not have a significant impact on ambient air quality. Project-related air quality impacts estimated in this environmental analysis would be considered significant if any of the applicable significance thresholds presented in Table 4 are exceeded.

For CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would or would not result in a significant impact to air quality.

Table 4. SDAPCD Air Quality Significance Thresholds

Construction Emissions			
Pollutant	Total Emissions (Pounds per Day)		
PM_{10}	100		
$PM_{2.5}$	55		
NO_x	250		
SO_x	250		
CO	550		
VOCs	137[a]		
Operational Emissions			
Pollutant	Total Emissions		
	Pounds per Hour	Pounds per Day	Tons per Year
PM_{10}	—	100	15
$PM_{2.5}$	—	55	10
NO_x	25	250	40
SO_x	25	250	40

Table 4. SDAPCD Air Quality Significance Thresholds

CO	100	550	100
Lead and lead compounds	—	3.2	0.6
VOCs	—	137[a]	13.7
TAC Thresholds			
TACs[b]	Maximum Incremental Cancer Risk ≥ 10 in 1 million Chronic Hazard Index ≥ 1.0		

Sources: City of San Diego 2016; SDAPCD 2016; SDAPCD 2015b.
Notes: SDAPCD = San Diego Air Pollution Control District; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; NO_x = oxides of nitrogen; SO_x = oxides of sulfur; CO = carbon monoxide; VOC = volatile organic compound; — = not available or applicable; TAC = toxic air contaminant.
a VOC threshold based on the significance thresholds recommended by the Monterey Bay Unified Air Pollution Control District for the North Central Coast Air Basin, which has similar federal and state attainment status as the SDAB for O_3.
b TACs include carcinogens and noncarcinogens.

The thresholds listed in Table 4 represent screening-level thresholds that can be used to evaluate whether project-related emissions would cause a significant impact on air quality. Emissions below the screening-level thresholds would not cause a significant impact. In the event that emissions exceed these thresholds, modeling would be required to demonstrate that the proposed project's total air quality impacts result in ground-level concentrations that are below the CAAQS and NAAQS, including appropriate background levels. For nonattainment pollutants, if emissions exceed the thresholds shown in Table 4, the proposed project could have the potential to result in a cumulatively considerable net increase in these pollutants and thus could have a significant impact on the ambient air quality.

SDAPCD Rule 51 (Public Nuisance) prohibits emission of any material that causes nuisance to a considerable number of persons or endangers the comfort, health, or safety of any person (SDAPCD 1976). A project that involves a use that would produce objectionable odors would be deemed to have a significant odor impact if it would affect a considerable number of off-site receptors.

City of San Diego

To determine the significance of the proposed project's emissions on the environment, the City's CEQA Significance Determination Thresholds (City of San Diego 2016) were used. The City's thresholds are consistent with the thresholds contained in Appendix G of CEQA Guidelines, with the addition of the following threshold (City of San Diego 2016):

f. Release substantial quantities of air contaminants beyond the boundaries of the premises upon which the stationary source emitting the contaminants is located.[2]

2 San Diego Municipal Code, Chapter 14, Article 2, Division 7, "Off-Site Development Impact Regulations" paragraph 142.0710, "Air Contaminant Regulations" [City of San Diego 2000].

The potential for the proposed project to release substantial quantities of air contaminants under the aforementioned threshold is addressed in the analysis of the project-generated criteria air pollutant emissions, TAC emissions, and odors, as appropriate, in Section 5.2, Impact Analysis.

The SDAPCD air quality significance thresholds shown in Table 4 were used to determine significance of project-generated construction and operational criteria air pollutants; specifically, the proposed project's potential to violate any air quality standard or contribute substantially to an existing or projected air quality violation (as assessed under Threshold 2). Regarding the analysis of potential impacts to sensitive receptors, the City recommends consideration of sensitive receptors in locations such as daycare centers, schools, retirement homes, and hospitals, or medical patients in residential homes close to major roadways or stationary sources, which could be impacted by air pollutants. The City also states that the significance of potential odor impacts should be determined based on what is known about the quantity of odor compounds that would result from the proposed project's proposed uses, the types of neighboring uses potentially affected, the distances between the proposed project's point sources and the neighboring uses such as sensitive receptors, and the resultant concentrations at the receptors.

The Air Quality section of the City's Significance Determination Thresholds recognizes attainment status designations for the SDAB and its nonattainment status for both O_3 and particulate matter. As such, the document recognizes that new projects should include measures, pursuant to CEQA, to reduce project-related O_3 and particulate matter emissions to ensure that new development does not contribute to the City's nonattainment status for these pollutants.

5.2 Impact Analysis

1. Would the project conflict with or obstruct implementation of the applicable air quality plan?

SDAPCD and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plans for attainment and maintenance of the ambient air quality standards in the SDAB—specifically, the State Implementation Plan (SIP) and Regional Air Quality Strategy (RAQS).[3] The federal Ozone Maintenance Plan, which is part of the SIP, was adopted in 2012 (SDAPCD 2012). The SIP includes a demonstration that current strategies and tactics will maintain acceptable air quality in the SDAB based on the NAAQS. The RAQS was initially adopted in 1991 and is updated on a triennial basis (most recently in 2009). The RAQS outlines SDAPCD's plans and control measures designed to attain the state air quality standards for O_3. The SIP and RAQS rely on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the County and the cities in the County, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile-source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by the County and the cities in the County as part of the development of their general plans.

If a project would result in growth that is greater than that anticipated in the local plan and SANDAG's growth projections, the project would have the potential to conflict with the SIP and RAQS and may contribute to a potentially significant cumulative impact on air quality. The proposed project is an expansion of an existing use,

[3] For this discussion, the relevant federal air quality plan is the Ozone Maintenance Plan (SDAPCD 2012). The RAQS is the applicable plan for purposes of state air quality planning. Both plans reflect growth projections in the SDAB.

would be developed within the existing parcel of the existing ARC, would be consistent with the existing zoning, and would result in an increase of only 20 employees.

The City's employment is projected to grow from 780,252 in 2010 to 867,641 in 2020, 933,938 in 2035, and 1,008,793 in 2050 (SANDAG 2013). The SANDAG projections assume an annual increase of 8,739 jobs between 2010 and 2020, 4,420 jobs between 2020 and 2035, and 4,990 jobs between 2035 and 2050. The additional 20 jobs in 2021 is within the projected annual increase of 4,420 jobs per year. Therefore, the proposed project would be consistent with the SANDAG projections.

The anticipated increase in local employment of 20 jobs and associated vehicle source emissions is not anticipated to result in air quality impacts that were not envisioned in the growth projections and RAQS. Because the proposed land uses and associated vehicle trips are anticipated in local air quality plans, the proposed project would be consistent at a regional level with the underlying growth forecasts in the RAQS. Impacts would not be significant.

2. ***Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?***

Construction Emissions

CalEEMod, Version 2016.3.2, was used to estimate emissions from construction of the proposed project. Internal combustion engines used by construction equipment, trucks, and worker vehicles would result in emissions of VOCs, NO_x, CO, PM_{10}, and $PM_{2.5}$. PM_{10} and $PM_{2.5}$ emissions would also be generated by entrained dust, which results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil. The proposed project would be required to comply with SDAPCD Rule 55 to control dust emissions generated during any dust-generating activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active dust areas two times per day, with additional watering depending on weather conditions. Table 5 presents the estimated maximum daily construction emissions generated during construction of the proposed project. Details of the emission calculations are provided in Attachment A.

Table 5. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
2019	1.50	30.53	21.24	0.08	4.66	2.17
2020	40.02	6.42	10.16	0.02	1.00	0.43
Maximum	*40.02*	*30.53*	*21.24*	*0.08*	*4.66*	*2.17*
SDAPCD threshold	*137*	*250*	*550*	*250*	*100*	*55*
Threshold exceeded?	No	No	No	No	No	No

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SDAPCD = San Diego Air Pollution Control District.
The values shown are the maximum summer or winter daily emissions results from CalEEMod. These emissions reflect CalEEMod "mitigated" output.
See Attachment A for complete results.

As shown in Table 5, the project construction would not exceed SDAPCD's daily thresholds. Therefore, construction impacts associated with criteria air pollutant emissions would not be significant.

Operational Impacts

Table 6 presents the maximum daily emissions associated with the operation of the proposed project after all phases of construction have been completed. Complete details of the emissions calculations are provided in Attachment A.

Emissions represent maximum of summer and winter. “Summer” emissions are representative of the conditions that may occur during the O_3 season (May 1 to October 31), and “winter” emissions are representative of the conditions that may occur during the balance of the year (November 1 to April 30).

Table 6. Estimated Maximum Daily Operational Criteria Air Pollutant Emissions

Emission Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Area	1.56	0.00	0.01	0.00	0.00	0.00
Mobile	0.96	3.68	9.37	0.03	2.24	0.62
Stationary	2.80	0.22	7.29	0.00	0.02	0.02
Total	**5.33**	**3.90**	**16.66**	**0.03**	**2.26**	**0.63**
SDAPCD threshold	*137*	*250*	*550*	*250*	*100*	*55*
Threshold exceeded?	No	No	No	No	No	No

Source: CAPCOA 2017. See Attachment A for complete results.
Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SDAPCD = San Diego Air Pollution Control District.
The values shown are the maximum summer or winter daily emissions results from CalEEMod. These emissions reflect CalEEMod “mitigated” output and operational year 2021.
The total values may not add up exactly due to rounding.

As shown in Table 6, the maximum daily operational emissions would not exceed the SDAPCD thresholds for VOC, CO, NO_x, SO_x, PM_{10}, or $PM_{2.5}$ during operation of the proposed project.

Table 7 shows the annual operational emissions estimated for the proposed project.

Table 7. Estimated Maximum Annual Operational Criteria Air Pollutant Emissions

Emission Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Tons per year					
Area	0.29	0.00	0.00	0.00	0.00	0.00
Mobile	0.15	0.62	1.54	0.01	0.37	0.10
Stationary	0.14	0.01	0.36	0.00	0.00	0.00
Total	**0.58**	**0.63**	**1.90**	**0.01**	**0.37**	**0.10**
SDAPCD threshold	*13.7*	*40*	*100*	*40*	*15*	*10*
Threshold exceeded?	No	No	No	No	No	No

Source: CAPCOA 2017. See Attachment A for complete results.
Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SDAPCD = San Diego Air Pollution Control District.
The values shown are the maximum summer or winter daily emissions results from CalEEMod. These emissions reflect CalEEMod “mitigated” output and operational year 2021.
The total values may not add up exactly due to rounding.

As shown in Table 7, the annual operations emissions for the proposed project do not exceed the SDAPCD's significance thresholds for VOC, CO, NO_x, SO_x, PM_{10}, or $PM_{2.5}$. Therefore, the proposed project would not have a significant impact.

3. ***Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?***

The proposed project would be considered to have a significant cumulative impact if its contribution accounts for a "cumulatively considerable contribution" to a cumulative air quality impact. Cumulative projects located in the San Diego region would have the potential to result in a cumulative impact to air quality if, in combination, they would conflict with or obstruct implementation of the RAQS. Similarly, individual projects that are inconsistent with the regional planning documents upon which the RAQS is based would have the potential to result in cumulative impacts if they represent development beyond regional projections.

The SDAB has been designated as a federal nonattainment area for O_3 and a state nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. Construction-related emissions of PM_{10} and $PM_{2.5}$ generally result in near-field impacts. The nonattainment status is the result of cumulative emissions from all sources of these air pollutants and their precursors within the SDAB. As previously discussed, the emissions of all criteria pollutants would be below the significance levels during construction and operation. Construction would be short term and temporary in nature. Additionally, construction activities required for the proposed expansion project are typical and do not require atypical construction practices that would include high-emitting activities. Once construction is completed, construction-related emissions would cease. As such, the proposed project would not result in significant impacts to air quality relative to operational emissions.

Regarding long-term cumulative operational emissions in relation to consistency with local air quality plans, the SIP and RAQS rely on SANDAG growth projections based on population, vehicle trends, and land use plans developed by the cities and by the County as part of the development of their general plans. Therefore, development that is consistent with the growth anticipated by local plans would be consistent with the SIP and RAQS and would not be considered to result in cumulatively considerable impacts from operational emissions. Implementation of the proposed project would not result in additional population growth or growth-inducing effects that exceed those included in the SIP and RAQS; thus, it would be consistent at a regional level with the underlying growth forecasts in the SIP and RAQS.

As a result, the proposed project would not result in a cumulatively considerable contribution to regional O_3 concentrations or other criteria pollutant emissions. Cumulative impacts would not be significant.

4. ***Would the project expose sensitive receptors to substantial pollutant concentrations?***

Carbon Monoxide Hotspots

Mobile-source emissions associated with traffic can result in the formation of CO hotspots. To verify that the proposed project would not cause or contribute to a violation of the CO standard, a screening evaluation of the potential for CO hotspots was conducted. The potential for CO hotspots was evaluated based on the Transportation Impact Analysis prepared for the proposed project (LLG 2018). The City's Significance Determination Thresholds CO hotspot screening guidance was followed to determine whether the proposed project would require a site-specific hotspot analysis (City of San Diego 2016). The City recommends a quantitative analysis of CO hotspots if a proposed development causes a six- or four-lane roadway to deteriorate to level of service (LOS) E or worse, causes a six-lane roadway to drop to LOS F, or is within 400 feet of a sensitive receptor and the LOS is D or worse. The Transportation Impact Analysis (LLG 2018) determined that one intersection impacted by the proposed project would operate at LOS D or worse and is within 400 feet of a sensitive receptor (55th Street and Montezuma Road (LOS E in AM and PM peak hours). Therefore, a quantitative CO hotspots analysis was performed.

Based on the CO hotspot screening evaluation (Attachment B), the highest volume (PM peak hour) was used in the analysis as the worst-case scenario. The potential impact of the proposed project on local CO levels was assessed at this intersection with the Caltrans CL4 interface based on the California LINE Source Dispersion Model (CALINE4), which allows microscale CO concentrations to be estimated along each roadway corridor or near intersections (Caltrans 1998a).

The emissions factor represents the weighted average emissions rate of the County vehicle fleet expressed in grams per mile per vehicle. Consistent with the traffic scenario, emissions factors for 2021 were used for the analysis. Emissions factors were predicted by EMFAC2017 based on an average speed of 5 miles per hour. The hourly traffic volume anticipated to travel on each link, in units of vehicles per hour, was based on information provided by the traffic consultant. Modeling assumptions are outlined in Attachment B.

Four receptor locations were modeled at 55th Street and Montezuma Road to determine CO ambient concentrations. A receptor was assumed on the sidewalk at each corner of the modeled intersections to represent the future possibility of extended outdoor exposure. CO concentrations were modeled at these locations to assess the maximum potential CO exposure that could occur in 2021. A receptor height of 5.9 feet (1.8 meters) was used in accordance with Caltrans recommendations for receptor locations (Caltrans 1998b).

The Caltrans guidance recommends using the highest 1-hour measurement in the last 3 years as the projected future 1-hour CO background concentration for the analysis. A CO concentration of 2.6 parts per million (ppm) was recorded in 2015 for the Beardsley Street monitoring station in San Diego and was assumed in the CALINE4 model for 2021 (CARB 2016c). To estimate an 8-hour average CO concentration, a persistence factor of 0.7 was applied to the output values of predicted concentrations in ppm at each of the receptor locations.

The results of the modeling are shown in Table 8. Model input and output data are provided in Attachment B.

Table 8. CALINE4 Predicted Carbon Monoxide Concentrations

Intersection	Maximum Modeled Impact (ppm)	
	1-Hour	8-Hour[a]
55th Street and Montezuma Road	3.0	2.1
CAAQS threshold	20.0	9.0
Threshold exceeded?	No	No

Source: Caltrans 1998a (CALINE4).
Notes: ppm = parts per million.
[a] The 8-hour concentrations were obtained by multiplying the 1-hour concentration by a persistence factor of 0.7 (Caltrans 2010).

As shown in Table 8, the maximum CO concentration predicted for the 1-hour averaging period at the studied intersections would be 3.0 ppm, which is below the 1-hour CO CAAQS of 20 ppm (CARB 2016c). The maximum predicted 8-hour CO concentration of 2.1 ppm at the studied intersections would be below the 8-hour CO CAAQS of 9.0 ppm (CARB 2016c). Neither the 1-hour nor the 8-hour CAAQS would be equaled or exceeded at any of the intersections studied. Accordingly, the proposed project would not cause or contribute to violations of the CAAQS and would not result in exposure of sensitive receptors to localized high concentrations of CO. As such, impacts to sensitive receptors with regard to potential CO hotspots resulting from project contribution to cumulative traffic-related air quality impacts would not be significant, and no mitigation is required.

Health Impacts of TACs

Project impacts may include emissions of pollutants identified by the state and federal government as TACs or hazardous air pollutants. The state has formally identified more than 200 substances as TACs, including the federal hazardous air pollutants, and is adopting appropriate control measures for sources of these TACs.

The greatest potential for TAC emissions during construction would be diesel particulate matter (DPM) emissions from heavy equipment operations and heavy-duty trucks. The closest sensitive receptors would be the existing residents south of Aztec Walk. Accordingly, a health risk assessment (HRA) was performed to evaluate the risk to sensitive receptors that could be posed by project-generated TAC emissions. The following paragraphs describe the HRA, and the detailed assessment is provided in Attachment C.

Health effects from carcinogenic air toxics are typically described in terms of cancer risk. SDAPCD recommends an incremental cancer risk threshold of 10 in a million. "Incremental cancer risk" is the likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 70-year lifetime will contract cancer based on the use of standard risk-assessment methodology. The Hotspots Analysis and Reporting Program, Version 2 (HARP2), was used to generate an isopleth, which is the zone of impact defined as the area within the 1 in 1 million cancer risk isopleth for a 70-year exposure. Cancer burden was conservatively estimated by using the distance of the furthest receptor within the 1 in 1 million isopleth as the radius of a zone of impact.

The Chronic Hazard Index is the sum of the individual substance chronic hazard indices for TACs affecting the same target organ system. The Chronic Hazard Index estimates for receptor types are based on the Office of Environmental Health Hazard Assessment (OEHHA) derived calculation method, which uses high-end exposure parameters for the inhalation and next top two exposure pathways and mean exposure parameters for the remaining pathways for non-cancer risk estimates. The Chronic Hazard Index is the sum of the individual substance chronic hazard indices for TACs affecting the same target organ system.[4] A hazard index less of than 1.0 means that adverse health effects are not expected. Within this analysis, noncarcinogenic exposures of less than 1.0 are considered not significant. The SDAPCD recommends a Chronic Hazard Index significance threshold of 1.0 (project increment).

The air dispersion modeling methodology was based on SDAPCD's generally accepted modeling practices (SDAPCD 2015b). Air dispersion modeling was performed using EPA's AERMOD (Version 18081) modeling system (computer software) with the Lakes Environmental Software implementation/user interface, AERMOD View Version 9.6.1. The

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4 The Chronic Hazard Index estimates for all receptor types used the OEHHA-derived calculation method (OEHHA 2015).

HRA followed OEHHA's 2015 guidelines (OEHHA 2015) and SDAPCD's Tier-1 techniques to calculate the health risk impacts at all receptors, including the nearby residential receptors, the nearest school, and off-site worker receptors, as further discussed below. The dispersion modeling included the use of standard regulatory default options. AERMOD parameters were selected consistent with the SDAPCD and EPA guidance and identified as representative of the project site and project activities. Principal parameters of this modeling are presented in Table 9.

Table 9. AERMOD Principal Parameters

Parameter	Details
Meteorological data	AERMOD-specific meteorological (met) data for the SDSU area (Kearny Villa Station) was used for the dispersion modeling. For the proposed project, a 3-year met data set from 2014 through 2016 was obtained from the SDAPCD in a preprocessed format suitable for use in AERMOD.
Urban versus rural option	Urban dispersion option was selected due to the developed nature of the project area and per SDAPCD guidelines.
Terrain characteristics	The terrain south of the project site is generally flat, with an elevation of the site of 446 feet amsl.
Elevation data	Digital elevation data were imported into AERMOD, and elevations were assigned to receptors, buildings, and emission sources as necessary. Digital elevation data were obtained through the AERMOD View WebGIS import feature in the U.S. Geological Survey NED 1/3 DEM data.
Source equipment operating scenarios	Air dispersion modeling of operational activities was conducted using the PM_{10} exhaust (representative of DPM) estimates provided by CalEEMod for construction of the proposed project.
Emission sources and release parameters	Eight volume sources were used to model the construction scenario, with each having a 25-meter side dimension.
Source release characterizations	*Construction:* An initial lateral and vertical dimension of 5.81 meters and release height of 5 meters was used for diesel equipment and truck exhaust. For on-road diesel trucks, the roundtrip length was assumed to be approximately 2,000 feet to capture pass-by exposure for individual receptors, with the PM_{10} exhaust from trucks summed with on-site equipment to estimate maximum total DPM exposure at proximate receptors.

Source: Attachment C.
Notes: SDSU = San Diego State University; SDAPCD = San Diego Air Pollution Control District; NED = National Elevation Dataset; DEM = Digital Elevation Model; amsl = above mean sea level; PM_{10} = coarse particulate matter; DPM = diesel particulate matter; CalEEMod = California Emissions Estimator Model.

The health risk calculations were performed using the HARP2 Risk Assessment Standalone Tool (Version 18159). AERMOD was run with sources (construction and operation) emitting unit emissions (1 gram per second) to obtain the necessary input values for HARP2. The dispersion factor values that were determined for each source using AERMOD were imported into HARP2 and used in conjunction with hourly and annual emissions to determine the ground-level concentrations for each pollutant. The ground level concentrations were then used to estimate the long-term cancer health risk to an individual, and the non-cancer chronic health index.

Discrete Cartesian receptors were used in the construction scenario to evaluate the locations of the maximally exposed residences. A series of receptors were placed along the residences just south of the proposed project. The grid network of receptors is used to establish the impact area and the area where the maximum impact would occur. Construction of project components would require use of heavy-duty construction equipment, which is subject to a

CARB airborne toxics control measure for in-use diesel construction equipment to reduce DPM emissions, and would involve use of diesel trucks, which are also subject to an airborne toxics control measure. Construction of project components would occur over a 16-month period and would be periodic and short term in nature. The results of the HRA during construction and operation are provided in Table 10.

Table 10. Summary of Maximum Cancer and Chronic Health Risks

Impact Parameter	Units	Project Impact	CEQA Threshold	Level of Significance
Off-Campus MEIR				
Cancer risk	Per million	0.31	10	Not significant
Chronic Hazard Index	Index value	0.0003	1.0	Not significant
On-Campus MEIR				
Cancer risk	Per million	7.01	10	Not significant
Chronic Hazard Index	Index value	0.006	1.0	Not significant

Source: SDAPCD 2015b.
Notes: CEQA = California Environmental Quality Act; MEIR = maximally exposed individual resident.

As shown in Table 10, the health risks resulting from project-generated TAC emissions would be below the levels of significance for construction. The TAC emissions from construction would be short term in nature and would cease after the construction period. The TAC emissions during operation from the emergency generator and natural gas combustion would be infrequent and would not pose a risk to nearby sensitive receptors. As such, impacts from exposure of sensitive receptors to project-related TAC emissions would not be significant.

Health Impacts of Criteria Air Pollutants

Construction and operation of the proposed project would not result in emissions that exceed the City's emission thresholds for any criteria air pollutants. Regarding VOCs, some VOCs would be associated with motor vehicles and construction equipment, while others are associated with architectural coatings, the emissions of which would not result in the exceedances of the City's thresholds. Generally, the VOCs in architectural coatings are of relatively low toxicity. Additionally, SDAPCD Rule 67.0.1 restricts the VOC content of coatings for both construction and operational applications.

In addition, VOCs and NO_x are precursors to O_3, for which the SDAB is designated as nonattainment with respect to the NAAQS and CAAQS (the SDAB is designated by EPA as an attainment area for the 1-hour O_3 NAAQS standard and 1997 8-hour NAAQS standard). The health effects associated with O_3 are generally associated with reduced lung function. The contribution of VOCs and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SDAB due to O_3 precursor emissions tend to be found downwind from the source location to allow time for the photochemical reactions to occur. However, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the VOC emissions would occur because exceedances of the O_3 ambient air quality standards tend to occur between April and October, when solar radiation is highest.

The holistic effect of a single project's emissions of O_3 precursors is speculative due to the lack of quantitative methods to assess this impact. Nonetheless, the VOC and NO_x emissions associated with project construction could minimally contribute to regional O_3 concentrations and the associated health impacts. Due to the minimal contribution during construction and operation, as well as the existing good air quality in coastal San Diego areas, health impacts would not be considered significant.

Similar to O_3, construction of the proposed project would not exceed thresholds for PM_{10} or $PM_{2.5}$ and would not contribute to exceedances of the NAAQS and CAAQS for particulate matter. The proposed project would also not result in substantial DPM emissions during construction and operation and therefore would not result in significant health effects related to DPM exposure. Due to the minimal contribution of particulate matter during construction and operation, health impacts would not be considered significant.

Construction of the proposed project would not contribute to exceedances of the NAAQS and CAAQS for NO_2 and would be required to comply with SDAPCD Rule 55, which limits the amount of fugitive dust generated during construction. Additionally, construction would be relatively short term, and off-road construction equipment would be operating in various portions of the site; there would be no concentration in one portion of the site at any one time. Construction of the proposed project would not require the use of any non-typical equipment or any stationary emission sources that would create substantial, localized NO_x impacts. Therefore, health impacts would not be considered significant.

As shown in Table 2, the existing NO_2 concentrations in the area are well below the NAAQS and CAAQS standards. Therefore, the proposed project's operational NO_x emissions would not be expected to result in exceedances of the NO_2 standards or contribute to the associated health effects. The impacts related to the associated CO hotspots were discussed previously as not significant. Thus, the proposed project's CO emissions would not contribute to significant health effects associated with this pollutant. PM_{10} and $PM_{2.5}$ would not contribute to potential exceedances of the NAAQS and CAAQS for particulate matter, obstruct the SDAB from coming into attainment for these pollutants, or contribute to significant health effects associated with particulates. Therefore, health impacts associated with criteria air pollutants would not be considered significant.

5. Would the project create objectionable odors affecting a substantial number of people?

Odors would be generated from vehicles and equipment exhaust emissions during construction of the project facilities. Odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment and architectural coatings. Such odors are temporary and, for the types of construction activities anticipated for project components, would occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would not be considered significant.

Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, there are no quantitative or formulaic methodologies to determine whether potential odors would have a significant impact. Examples of land uses and industrial operations that are commonly associated with odor complaints include agricultural uses, wastewater treatment plants, food-processing facilities, chemical plants, composting operations, refineries, landfills, dairies, and fiberglass molding facilities. In addition to the odor source, the distance between the sensitive receptor(s) and the odor source, as well as the local meteorological conditions, are considerations in the potential for a project to frequently expose the public to objectionable odors. Although localized air quality impacts are focused on potential impacts to sensitive receptors, such as residences and schools, other land uses where people may congregate (e.g., workplaces) or uses with the intent to attract people (e.g., restaurants and visitor-serving accommodations) should also be considered in the evaluation of potential odor nuisance impacts.

The proposed project is an expansion of an existing use, it would not include any land use types that generate odors as described previously, and its construction would involve only typical equipment that would not result in excessive odors; therefore, impacts related to odor caused by the proposed project would not be significant.

5.3 Conclusions

The following discussion provides a synopsis of the conclusions reached in each of the above impact analyses and the level of impact that would occur after mitigation measures are implemented, where applicable.

Conformance with the Regional Air Quality Strategy

The proposed project is considered accounted for in the RAQS. As such, the proposed project would not conflict with or obstruct implementation of local air quality plans. Impacts would not be significant.

Conformance to Federal and State Ambient Air Quality Standards

Construction

Maximum daily project construction emissions would not exceed the construction thresholds for VOCs, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$. Thus, impacts for these pollutants would not be significant.

Operation

Maximum daily project operational emissions would not exceed the operational thresholds for VOCs, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$. Thus, impacts for these pollutants would not be significant.

Cumulative Impacts

Construction

Maximum daily construction emissions of VOCs, NO_x, CO, SO_X, PM_{10}, and $PM_{2.5}$ generated by the proposed project would not exceed significance thresholds. Thus, cumulative impacts would not be significant.

Operation

Maximum daily operational emissions of VOCs, NO_x, CO, SO_X, PM_{10}, and $PM_{2.5}$ generated by the proposed project would not exceed significance thresholds. Thus, cumulative impacts would not be significant.

Impacts to Sensitive Receptors

Construction

Carbon Monoxide Hotspots

Construction traffic in 2019 and 2020, which represent the highest level of construction-related traffic, would not result in traffic volumes that would cause a CO hotspot; therefore, impacts related to CO near sensitive receptors during construction would not be significant.

Toxic Air Contaminants

Impacts related to cancer risk and the Chronic Hazard Index from DPM emissions, which is a TAC, would be less than SDAPCD's thresholds for cancer risk during construction activities; therefore, impacts would not be significant.

Operation

Carbon Monoxide Hotspots

Operation of the proposed project would not expose sensitive receptors to localized high concentrations of CO or contribute traffic volumes to intersections that would cause a CO hotspot. Because neither the 1-hour nor the 8-hour CO CAAQS would be equaled or exceeded at any of the studied intersections, potential operational CO hotspot impacts would not be significant.

Toxic Air Contaminants

The proposed project does not propose any major operational sources of TAC emissions. Additionally, the proposed project would not be located next to a major source of TAC or a high-volume roadway. As such, the proposed project would not result in substantial TAC emissions that may affect nearby receptors. Impacts would not be significant.

Odor Impacts

Construction

Construction odor impacts would not be significant.

Operation

Operational odor impacts would not be significant.

As such, the proposed project would not result in significant impacts to air quality. Thus, the proposed project would qualify for CEQA Guidelines, Section 15332, Exemptions for In-Fill Development Projects, with respect to air quality.

Sincerely,

Adam Poll, QEP, LEED AP BD+C
Senior Air Quality Specialist

6 References

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Attachment A

CalEEMod Output Files

SDSU ARC Expansion

San Diego County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Health Club	68.00	1000sqft	1.56	68,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2021
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Trips and VMT - Based on applicant provided information.

On-road Fugitive Dust - CalEEMod defaults.

Demolition - Based on applicant provided information.

Grading - Based on applicant provided information.

Architectural Coating - In accordance with SDAPCD Rule 67.0.1.

Vehicle Trips - Based on trip rates from LLG Traffic Report.

Consumer Products - CalEEMod defaults.

Area Coating - CalEEMod defaults. In accordance with SDAPCD Rule 67.0.1.

Landscape Equipment - CalEEMod defaults.

Energy Use - CalEEMod defaults for electricity. No natural gas used onsite.

Water And Wastewater - CalEEMod defaults.

Solid Waste - CalEEMod defaults.

Construction Off-road Equipment Mitigation - Water twice daily in accordance with SDAPCD Rule 55.

Mobile Land Use Mitigation -

Area Mitigation - Architectural coatings in accordance with SDAPCD Rule 67.0.1.

Energy Mitigation - Onsite PV, no impact on air quality. 50% improvement over Title 24.

Water Mitigation - Low flow fixtures installed.

Waste Mitigation - In accordance with AB 939.

Stationary Sources - Emergency Generators and Fire Pumps - 400 kW natural gas emergency generator.

Fleet Mix -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	100
tblAreaCoating	Area_EF_Nonresidential_Interior	250	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	27.00
tblConstructionPhase	NumDays	200.00	285.00
tblEnergyUse	NT24NG	7.25	0.00
tblEnergyUse	T24NG	4.31	0.00
tblGrading	AcresOfGrading	0.00	1.50
tblGrading	AcresOfGrading	0.50	1.00
tblGrading	MaterialExported	0.00	1,000.00
tblGrading	MaterialImported	0.00	1,000.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00

tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblTripsAndVMT	HaulingTripNumber	114.00	770.00
tblTripsAndVMT	VendorTripNumber	11.00	12.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	29.00	80.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	15.00	14.00
tblVehicleTrips	ST_TR	20.87	5.63
tblVehicleTrips	SU_TR	26.73	7.21
tblVehicleTrips	WD_TR	32.93	8.88

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0863	0.8256	0.5672	1.6100e-003	0.0745	0.0325	0.1070	0.0209	0.0304	0.0513	0.0000	149.0767	149.0767	0.0211	0.0000	149.6040
2020	0.2745	0.5856	0.5403	1.4100e-003	0.0625	0.0239	0.0864	0.0168	0.0224	0.0391	0.0000	126.9634	126.9634	0.0179	0.0000	127.4113
Maximum	**0.2745**	**0.8256**	**0.5672**	**1.6100e-003**	**0.0745**	**0.0325**	**0.1070**	**0.0209**	**0.0304**	**0.0513**	**0.0000**	**149.0767**	**149.0767**	**0.0211**	**0.0000**	**149.6040**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0421	0.5591	0.5909	1.6100e-003	0.0619	0.0127	0.0746	0.0170	0.0127	0.0297	0.0000	149.0766	149.0766	0.0211	0.0000	149.6039
2020	0.2416	0.4222	0.5790	1.4100e-003	0.0625	0.0122	0.0747	0.0168	0.0122	0.0289	0.0000	126.9633	126.9633	0.0179	0.0000	127.4113
Maximum	**0.2416**	**0.5591**	**0.5909**	**1.6100e-003**	**0.0625**	**0.0127**	**0.0747**	**0.0170**	**0.0127**	**0.0297**	**0.0000**	**149.0766**	**149.0766**	**0.0211**	**0.0000**	**149.6039**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**21.37**	**30.46**	**-5.63**	**0.00**	**9.22**	**55.79**	**22.81**	**10.25**	**52.95**	**35.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
4	5-24-2019	8-23-2019	0.3902	0.2508
5	8-24-2019	11-23-2019	0.4104	0.2760
6	11-24-2019	2-23-2020	0.2435	0.1671
7	2-24-2020	5-23-2020	0.2274	0.1597
8	5-24-2020	8-23-2020	0.3940	0.3228
9	8-24-2020	9-30-2020	0.0994	0.0829
		Highest	0.4104	0.3228

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2853	1.0000e-005	6.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2200e-003	1.2200e-003	0.0000	0.0000	1.3000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	184.6731	184.6731	7.4300e-003	1.5400e-003	185.3172
Mobile	0.1410	0.5765	1.4306	4.3800e-003	0.3621	3.8400e-003	0.3660	0.0970	3.5900e-003	0.1006	0.0000	403.5780	403.5780	0.0233	0.0000	404.1607
Stationary	0.1399	0.0108	0.3643	5.0000e-005		7.7000e-004	7.7000e-004		7.7000e-004	7.7000e-004	0.0000	8.1080	8.1080	0.0170	0.0000	8.5318
Waste						0.0000	0.0000		0.0000	0.0000	78.6793	0.0000	78.6793	4.6498	0.0000	194.9246
Water						0.0000	0.0000		0.0000	0.0000	1.2759	26.0638	27.3397	0.1321	3.3100e-003	31.6289
Total	**0.5662**	**0.5873**	**1.7956**	**4.4300e-003**	**0.3621**	**4.6100e-003**	**0.3667**	**0.0970**	**4.3600e-003**	**0.1013**	**79.9552**	**622.4241**	**702.3793**	**4.8296**	**4.8500e-003**	**824.5646**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2853	1.0000e-005	6.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2200e-003	1.2200e-003	0.0000	0.0000	1.3000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	171.2282	171.2282	6.8900e-003	1.4300e-003	171.8254
Mobile	0.1410	0.5765	1.4306	4.3800e-003	0.3621	3.8400e-003	0.3660	0.0970	3.5900e-003	0.1006	0.0000	403.5780	403.5780	0.0233	0.0000	404.1607
Stationary	0.1399	0.0108	0.3643	5.0000e-005		7.7000e-004	7.7000e-004		7.7000e-004	7.7000e-004	0.0000	8.1080	8.1080	0.0170	0.0000	8.5318
Waste						0.0000	0.0000		0.0000	0.0000	19.6698	0.0000	19.6698	1.1625	0.0000	48.7312
Water						0.0000	0.0000		0.0000	0.0000	1.0207	22.6410	23.6617	0.1058	2.6600e-003	27.0993
Total	**0.5662**	**0.5873**	**1.7956**	**4.4300e-003**	**0.3621**	**4.6100e-003**	**0.3667**	**0.0970**	**4.3600e-003**	**0.1013**	**20.6906**	**605.5564**	**626.2469**	**1.3154**	**4.0900e-003**	**660.3497**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**74.12**	**2.71**	**10.84**	**72.76**	**15.67**	**19.92**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/25/2019	8/30/2019	5	27	
2	Building Construction	Building Construction	7/25/2019	8/26/2020	5	285	
3	Site Preparation	Site Preparation	9/1/2019	9/3/2019	5	2	
4	Grading	Grading	9/4/2019	9/9/2019	5	4	
5	Architectural Coating	Architectural Coating	8/13/2020	8/26/2020	5	10	
6	Paving	Paving	8/27/2020	9/9/2020	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 102,000; Non-Residential Outdoor: 34,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

SDSU ARC Expansion - San Diego County APCD Air District, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	6.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	1	2.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Building Construction	Welders	3	1.00	46	0.45
Site Preparation	Graders	1	4.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	6.00	132	0.36
Paving	Pumps	1	3.00	84	0.74
Paving	Rollers	1	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	14.00	0.00	770.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	80.00	12.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	250.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0125	0.0000	0.0125	1.8900e-003	0.0000	1.8900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0248	0.2417	0.1633	2.7000e-004		0.0138	0.0138		0.0129	0.0129	0.0000	23.4984	23.4984	5.6500e-003	0.0000	23.6396
Total	**0.0248**	**0.2417**	**0.1633**	**2.7000e-004**	**0.0125**	**0.0138**	**0.0263**	**1.8900e-003**	**0.0129**	**0.0148**	**0.0000**	**23.4984**	**23.4984**	**5.6500e-003**	**0.0000**	**23.6396**

3.2 Demolition - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.3800e-003	0.1180	0.0257	3.0000e-004	6.5900e-003	4.4000e-004	7.0300e-003	1.8100e-003	4.2000e-004	2.2300e-003	0.0000	30.0144	30.0144	2.7200e-003	0.0000	30.0823
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.5000e-004	5.7000e-004	5.5300e-003	2.0000e-005	1.5200e-003	1.0000e-005	1.5300e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.4147	1.4147	5.0000e-005	0.0000	1.4158
Total	**4.1300e-003**	**0.1186**	**0.0313**	**3.2000e-004**	**8.1100e-003**	**4.5000e-004**	**8.5600e-003**	**2.2100e-003**	**4.3000e-004**	**2.6400e-003**	**0.0000**	**31.4291**	**31.4291**	**2.7700e-003**	**0.0000**	**31.4981**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.6100e-003	0.0000	5.6100e-003	8.5000e-004	0.0000	8.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9200e-003	0.1207	0.1691	2.7000e-004		4.4100e-003	4.4100e-003		4.4100e-003	4.4100e-003	0.0000	23.4984	23.4984	5.6500e-003	0.0000	23.6396
Total	**5.9200e-003**	**0.1207**	**0.1691**	**2.7000e-004**	**5.6100e-003**	**4.4100e-003**	**0.0100**	**8.5000e-004**	**4.4100e-003**	**5.2600e-003**	**0.0000**	**23.4984**	**23.4984**	**5.6500e-003**	**0.0000**	**23.6396**

3.2 Demolition - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.3800e-003	0.1180	0.0257	3.0000e-004	6.5900e-003	4.4000e-004	7.0300e-003	1.8100e-003	4.2000e-004	2.2300e-003	0.0000	30.0144	30.0144	2.7200e-003	0.0000	30.0823
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.5000e-004	5.7000e-004	5.5300e-003	2.0000e-005	1.5200e-003	1.0000e-005	1.5300e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.4147	1.4147	5.0000e-005	0.0000	1.4158
Total	**4.1300e-003**	**0.1186**	**0.0313**	**3.2000e-004**	**8.1100e-003**	**4.5000e-004**	**8.5600e-003**	**2.2100e-003**	**4.3000e-004**	**2.6400e-003**	**0.0000**	**31.4291**	**31.4291**	**2.7700e-003**	**0.0000**	**31.4981**

3.3 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0315	0.2929	0.1866	3.3000e-004		0.0154	0.0154		0.0144	0.0144	0.0000	28.6993	28.6993	8.4800e-003	0.0000	28.9113
Total	**0.0315**	**0.2929**	**0.1866**	**3.3000e-004**		**0.0154**	**0.0154**		**0.0144**	**0.0144**	**0.0000**	**28.6993**	**28.6993**	**8.4800e-003**	**0.0000**	**28.9113**

3.3 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.2000e-003	0.0859	0.0231	1.9000e-004	4.5400e-003	5.9000e-004	5.1300e-003	1.3100e-003	5.7000e-004	1.8800e-003	0.0000	18.1724	18.1724	1.4600e-003	0.0000	18.2088
Worker	0.0180	0.0138	0.1334	3.8000e-004	0.0366	2.7000e-004	0.0368	9.7200e-003	2.5000e-004	9.9600e-003	0.0000	34.1314	34.1314	1.1000e-003	0.0000	34.1589
Total	**0.0212**	**0.0997**	**0.1565**	**5.7000e-004**	**0.0411**	**8.6000e-004**	**0.0420**	**0.0110**	**8.2000e-004**	**0.0118**	**0.0000**	**52.3038**	**52.3038**	**2.5600e-003**	**0.0000**	**52.3677**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.8300e-003	0.1651	0.2029	3.3000e-004		6.1500e-003	6.1500e-003		6.1500e-003	6.1500e-003	0.0000	28.6993	28.6993	8.4800e-003	0.0000	28.9113
Total	**8.8300e-003**	**0.1651**	**0.2029**	**3.3000e-004**		**6.1500e-003**	**6.1500e-003**		**6.1500e-003**	**6.1500e-003**	**0.0000**	**28.6993**	**28.6993**	**8.4800e-003**	**0.0000**	**28.9113**

3.3 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.2000e-003	0.0859	0.0231	1.9000e-004	4.5400e-003	5.9000e-004	5.1300e-003	1.3100e-003	5.7000e-004	1.8800e-003	0.0000	18.1724	18.1724	1.4600e-003	0.0000	18.2088
Worker	0.0180	0.0138	0.1334	3.8000e-004	0.0366	2.7000e-004	0.0368	9.7200e-003	2.5000e-004	9.9600e-003	0.0000	34.1314	34.1314	1.1000e-003	0.0000	34.1589
Total	**0.0212**	**0.0997**	**0.1565**	**5.7000e-004**	**0.0411**	**8.6000e-004**	**0.0420**	**0.0110**	**8.2000e-004**	**0.0118**	**0.0000**	**52.3038**	**52.3038**	**2.5600e-003**	**0.0000**	**52.3677**

3.3 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0424	0.3986	0.2698	4.9000e-004		0.0201	0.0201		0.0187	0.0187	0.0000	42.2408	42.2408	0.0126	0.0000	42.5559
Total	**0.0424**	**0.3986**	**0.2698**	**4.9000e-004**		**0.0201**	**0.0201**		**0.0187**	**0.0187**	**0.0000**	**42.2408**	**42.2408**	**0.0126**	**0.0000**	**42.5559**

3.3 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9100e-003	0.1170	0.0311	2.8000e-004	6.8100e-003	5.7000e-004	7.3800e-003	1.9700e-003	5.5000e-004	2.5100e-003	0.0000	27.0722	27.0722	2.0800e-003	0.0000	27.1241
Worker	0.0252	0.0187	0.1830	5.5000e-004	0.0549	3.9000e-004	0.0553	0.0146	3.6000e-004	0.0149	0.0000	49.5815	49.5815	1.4900e-003	0.0000	49.6187
Total	**0.0291**	**0.1356**	**0.2141**	**8.3000e-004**	**0.0617**	**9.6000e-004**	**0.0626**	**0.0166**	**9.1000e-004**	**0.0175**	**0.0000**	**76.6537**	**76.6537**	**3.5700e-003**	**0.0000**	**76.7428**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0132	0.2477	0.3043	4.9000e-004		9.2300e-003	9.2300e-003		9.2300e-003	9.2300e-003	0.0000	42.2408	42.2408	0.0126	0.0000	42.5558
Total	**0.0132**	**0.2477**	**0.3043**	**4.9000e-004**		**9.2300e-003**	**9.2300e-003**		**9.2300e-003**	**9.2300e-003**	**0.0000**	**42.2408**	**42.2408**	**0.0126**	**0.0000**	**42.5558**

3.3 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9100e-003	0.1170	0.0311	2.8000e-004	6.8100e-003	5.7000e-004	7.3800e-003	1.9700e-003	5.5000e-004	2.5100e-003	0.0000	27.0722	27.0722	2.0800e-003	0.0000	27.1241
Worker	0.0252	0.0187	0.1830	5.5000e-004	0.0549	3.9000e-004	0.0553	0.0146	3.6000e-004	0.0149	0.0000	49.5815	49.5815	1.4900e-003	0.0000	49.6187
Total	**0.0291**	**0.1356**	**0.2141**	**8.3000e-004**	**0.0617**	**9.6000e-004**	**0.0626**	**0.0166**	**9.1000e-004**	**0.0175**	**0.0000**	**76.6537**	**76.6537**	**3.5700e-003**	**0.0000**	**76.7428**

3.4 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.3000e-004	0.0000	5.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8000e-004	5.6300e-003	3.2200e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.4000e-004	2.4000e-004	0.0000	0.5773	0.5773	1.8000e-004	0.0000	0.5819
Total	**4.8000e-004**	**5.6300e-003**	**3.2200e-003**	**1.0000e-005**	**5.3000e-004**	**2.6000e-004**	**7.9000e-004**	**6.0000e-005**	**2.4000e-004**	**3.0000e-004**	**0.0000**	**0.5773**	**0.5773**	**1.8000e-004**	**0.0000**	**0.5819**

3.4 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0599	0.0599	0.0000	0.0000	0.0599
Total	**3.0000e-005**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0599**	**0.0599**	**0.0000**	**0.0000**	**0.0599**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.4000e-004	0.0000	2.4000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-004	2.9200e-003	4.1000e-003	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.5773	0.5773	1.8000e-004	0.0000	0.5819
Total	**1.5000e-004**	**2.9200e-003**	**4.1000e-003**	**1.0000e-005**	**2.4000e-004**	**6.0000e-005**	**3.0000e-004**	**3.0000e-005**	**6.0000e-005**	**9.0000e-005**	**0.0000**	**0.5773**	**0.5773**	**1.8000e-004**	**0.0000**	**0.5819**

3.4 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0599	0.0599	0.0000	0.0000	0.0599
Total	**3.0000e-005**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0599**	**0.0599**	**0.0000**	**0.0000**	**0.0599**

3.5 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.9700e-003	0.0000	9.9700e-003	5.0700e-003	0.0000	5.0700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9800e-003	0.0288	0.0173	3.0000e-005		1.5800e-003	1.5800e-003		1.4900e-003	1.4900e-003	0.0000	2.6443	2.6443	5.7000e-004	0.0000	2.6586
Total	**2.9800e-003**	**0.0288**	**0.0173**	**3.0000e-005**	**9.9700e-003**	**1.5800e-003**	**0.0116**	**5.0700e-003**	**1.4900e-003**	**6.5600e-003**	**0.0000**	**2.6443**	**2.6443**	**5.7000e-004**	**0.0000**	**2.6586**

3.5 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1000e-003	0.0383	8.3600e-003	1.0000e-004	2.1400e-003	1.4000e-004	2.2800e-003	5.9000e-004	1.4000e-004	7.2000e-004	0.0000	9.7449	9.7449	8.8000e-004	0.0000	9.7670
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	5.0000e-005	4.7000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1198	0.1198	0.0000	0.0000	0.1199
Total	**1.1600e-003**	**0.0384**	**8.8300e-003**	**1.0000e-004**	**2.2700e-003**	**1.4000e-004**	**2.4100e-003**	**6.2000e-004**	**1.4000e-004**	**7.5000e-004**	**0.0000**	**9.8647**	**9.8647**	**8.8000e-004**	**0.0000**	**9.8869**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.4900e-003	0.0000	4.4900e-003	2.2800e-003	0.0000	2.2800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7000e-004	0.0138	0.0180	3.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	2.6443	2.6443	5.7000e-004	0.0000	2.6586
Total	**6.7000e-004**	**0.0138**	**0.0180**	**3.0000e-005**	**4.4900e-003**	**6.4000e-004**	**5.1300e-003**	**2.2800e-003**	**6.4000e-004**	**2.9200e-003**	**0.0000**	**2.6443**	**2.6443**	**5.7000e-004**	**0.0000**	**2.6586**

3.5 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1000e-003	0.0383	8.3600e-003	1.0000e-004	2.1400e-003	1.4000e-004	2.2800e-003	5.9000e-004	1.4000e-004	7.2000e-004	0.0000	9.7449	9.7449	8.8000e-004	0.0000	9.7670
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	5.0000e-005	4.7000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1198	0.1198	0.0000	0.0000	0.1199
Total	**1.1600e-003**	**0.0384**	**8.8300e-003**	**1.0000e-004**	**2.2700e-003**	**1.4000e-004**	**2.4100e-003**	**6.2000e-004**	**1.4000e-004**	**7.5000e-004**	**0.0000**	**9.8647**	**9.8647**	**8.8000e-004**	**0.0000**	**9.8869**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1970					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.1982**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	8.0000e-005	8.0000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2175	0.2175	1.0000e-005	0.0000	0.2176
Total	**1.1000e-004**	**8.0000e-005**	**8.0000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2175**	**0.2175**	**1.0000e-005**	**0.0000**	**0.2176**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1970					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0000e-004	6.7800e-003	9.1600e-003	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.1973**	**6.7800e-003**	**9.1600e-003**	**1.0000e-005**		**4.8000e-004**	**4.8000e-004**		**4.8000e-004**	**4.8000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	8.0000e-005	8.0000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2175	0.2175	1.0000e-005	0.0000	0.2176
Total	**1.1000e-004**	**8.0000e-005**	**8.0000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2175**	**0.2175**	**1.0000e-005**	**0.0000**	**0.2176**

3.7 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.4200e-003	0.0427	0.0446	7.0000e-005		2.3700e-003	2.3700e-003		2.2200e-003	2.2200e-003	0.0000	6.0674	6.0674	1.6300e-003	0.0000	6.1082
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.4200e-003**	**0.0427**	**0.0446**	**7.0000e-005**		**2.3700e-003**	**2.3700e-003**		**2.2200e-003**	**2.2200e-003**	**0.0000**	**6.0674**	**6.0674**	**1.6300e-003**	**0.0000**	**6.1082**

3.7 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.9000e-004	1.8700e-003	1.0000e-005	5.6000e-004	0.0000	5.7000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5074	0.5074	2.0000e-005	0.0000	0.5078
Total	**2.6000e-004**	**1.9000e-004**	**1.8700e-003**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**5.7000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5074**	**0.5074**	**2.0000e-005**	**0.0000**	**0.5078**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.5600e-003	0.0319	0.0488	7.0000e-005		1.5600e-003	1.5600e-003		1.5600e-003	1.5600e-003	0.0000	6.0674	6.0674	1.6300e-003	0.0000	6.1082
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.5600e-003**	**0.0319**	**0.0488**	**7.0000e-005**		**1.5600e-003**	**1.5600e-003**		**1.5600e-003**	**1.5600e-003**	**0.0000**	**6.0674**	**6.0674**	**1.6300e-003**	**0.0000**	**6.1082**

3.7 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.9000e-004	1.8700e-003	1.0000e-005	5.6000e-004	0.0000	5.7000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5074	0.5074	2.0000e-005	0.0000	0.5078
Total	**2.6000e-004**	**1.9000e-004**	**1.8700e-003**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**5.7000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5074**	**0.5074**	**2.0000e-005**	**0.0000**	**0.5078**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1410	0.5765	1.4306	4.3800e-003	0.3621	3.8400e-003	0.3660	0.0970	3.5900e-003	0.1006	0.0000	403.5780	403.5780	0.0233	0.0000	404.1607
Unmitigated	0.1410	0.5765	1.4306	4.3800e-003	0.3621	3.8400e-003	0.3660	0.0970	3.5900e-003	0.1006	0.0000	403.5780	403.5780	0.0233	0.0000	404.1607

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Health Club	604.00	382.80	490.28	960,848	960,848
Total	604.00	382.80	490.28	960,848	960,848

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Health Club	9.50	7.30	7.30	16.90	64.10	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Health Club	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	171.2282	171.2282	6.8900e-003	1.4300e-003	171.8254
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	184.6731	184.6731	7.4300e-003	1.5400e-003	185.3172
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Health Club	565080	184.6731	7.4300e-003	1.5400e-003	185.3172
Total		**184.6731**	**7.4300e-003**	**1.5400e-003**	**185.3172**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Health Club	523940	171.2282	6.8900e-003	1.4300e-003	171.8254
Total		**171.2282**	**6.8900e-003**	**1.4300e-003**	**171.8254**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2853	1.0000e-005	6.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2200e-003	1.2200e-003	0.0000	0.0000	1.3000e-003
Unmitigated	0.2853	1.0000e-005	6.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2200e-003	1.2200e-003	0.0000	0.0000	1.3000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0197					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2656					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	6.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2200e-003	1.2200e-003	0.0000	0.0000	1.3000e-003
Total	**0.2853**	**1.0000e-005**	**6.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.2200e-003**	**1.2200e-003**	**0.0000**	**0.0000**	**1.3000e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0197					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2656					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	6.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2200e-003	1.2200e-003	0.0000	0.0000	1.3000e-003
Total	**0.2853**	**1.0000e-005**	**6.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.2200e-003**	**1.2200e-003**	**0.0000**	**0.0000**	**1.3000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	23.6617	0.1058	2.6600e-003	27.0993
Unmitigated	27.3397	0.1321	3.3100e-003	31.6289

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Health Club	4.02173 / 2.46493	27.3397	0.1321	3.3100e-003	31.6289
Total		**27.3397**	**0.1321**	**3.3100e-003**	**31.6289**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Health Club	3.21739 / 2.46493	23.6617	0.1058	2.6600e-003	27.0993
Total		**23.6617**	**0.1058**	**2.6600e-003**	**27.0993**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	19.6698	1.1625	0.0000	48.7312
Unmitigated	78.6793	4.6498	0.0000	194.9246

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Health Club	387.6	78.6793	4.6498	0.0000	194.9246
Total		**78.6793**	**4.6498**	**0.0000**	**194.9246**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Health Club	96.9	19.6698	1.1625	0.0000	48.7312
Total		**19.6698**	**1.1625**	**0.0000**	**48.7312**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0.5	50	636	0.73	CNG

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Emergency Generator - CNG (500 - 9999 HP)	0.1399	0.0108	0.3643	5.0000e-005		7.7000e-004	7.7000e-004		7.7000e-004	7.7000e-004	0.0000	8.1080	8.1080	0.0170	0.0000	8.5318
Total	**0.1399**	**0.0108**	**0.3643**	**5.0000e-005**		**7.7000e-004**	**7.7000e-004**		**7.7000e-004**	**7.7000e-004**	**0.0000**	**8.1080**	**8.1080**	**0.0170**	**0.0000**	**8.5318**

11.0 Vegetation

SDSU ARC Expansion

San Diego County APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Health Club	68.00	1000sqft	1.56	68,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2021
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Trips and VMT - Based on applicant provided information.

On-road Fugitive Dust - CalEEMod defaults.

Demolition - Based on applicant provided information.

Grading - Based on applicant provided information.

Architectural Coating - In accordance with SDAPCD Rule 67.0.1.

Vehicle Trips - Based on trip rates from LLG Traffic Report.

Consumer Products - CalEEMod defaults.

Area Coating - CalEEMod defaults. In accordance with SDAPCD Rule 67.0.1.

Landscape Equipment - CalEEMod defaults.

Energy Use - CalEEMod defaults for electricity. No natural gas used onsite.

Water And Wastewater - CalEEMod defaults.

Solid Waste - CalEEMod defaults.

Construction Off-road Equipment Mitigation - Water twice daily in accordance with SDAPCD Rule 55.

Mobile Land Use Mitigation -

Area Mitigation - Architectural coatings in accordance with SDAPCD Rule 67.0.1.

Energy Mitigation - Onsite PV, no impact on air quality. 50% improvement over Title 24.

Water Mitigation - Low flow fixtures installed.

Waste Mitigation - In accordance with AB 939.

Stationary Sources - Emergency Generators and Fire Pumps - 400 kW natural gas emergency generator.

Fleet Mix -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	100
tblAreaCoating	Area_EF_Nonresidential_Interior	250	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblConstructionPhase	NumDays	20.00	27.00
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tblEnergyUse	NT24NG	7.25	0.00
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tblGrading	AcresOfGrading	0.00	1.50
tblGrading	AcresOfGrading	0.50	1.00
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tblGrading	MaterialImported	0.00	1,000.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
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tblOffRoadEquipment	UsageHours	7.00	8.00

tblOffRoadEquipment	UsageHours	6.00	4.00
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tblTripsAndVMT	HaulingTripNumber	114.00	770.00
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tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	29.00	80.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	15.00	14.00
tblVehicleTrips	ST_TR	20.87	5.63
tblVehicleTrips	SU_TR	26.73	7.21
tblVehicleTrips	WD_TR	32.93	8.88

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	3.0615	40.0380	20.5121	0.0814	6.8808	1.3406	8.0255	3.0507	1.2563	4.1282	0.0000	8,542.6040	8,542.6040	1.0099	0.0000	8,567.8506
2020	40.4958	8.5796	9.3206	0.0193	0.7877	0.4750	1.1447	0.2108	0.4443	0.5509	0.0000	1,903.6495	1,903.6495	0.3635	0.0000	1,909.4478
Maximum	**40.4958**	**40.0380**	**20.5121**	**0.0814**	**6.8808**	**1.3406**	**8.0255**	**3.0507**	**1.2563**	**4.1282**	**0.0000**	**8,542.6040**	**8,542.6040**	**1.0099**	**0.0000**	**8,567.8506**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	1.4323	30.3045	21.2267	0.0814	4.1393	0.5133	4.6526	1.6558	0.5094	2.1651	0.0000	8,542.6040	8,542.6040	1.0099	0.0000	8,567.8506
2020	39.9722	6.4127	10.1604	0.0193	0.7877	0.3120	1.0023	0.2108	0.3120	0.4247	0.0000	1,903.6495	1,903.6495	0.3635	0.0000	1,909.4478
Maximum	**39.9722**	**30.3045**	**21.2267**	**0.0814**	**4.1393**	**0.5133**	**4.6526**	**1.6558**	**0.5094**	**2.1651**	**0.0000**	**8,542.6040**	**8,542.6040**	**1.0099**	**0.0000**	**8,567.8506**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**4.94**	**24.48**	**-5.21**	**0.00**	**35.75**	**54.54**	**38.33**	**42.77**	**51.70**	**44.65**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.5638	6.0000e-005	6.9700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0149	0.0149	4.0000e-005		0.0159
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.8939	3.3579	8.5849	0.0273	2.2127	0.0228	2.2355	0.5914	0.0213	0.6127		2,772.5362	2,772.5362	0.1530		2,776.3608
Stationary	2.7978	0.2155	7.2867	9.8000e-004		0.0154	0.0154		0.0154	0.0154		178.7508	178.7508	0.3738		188.0946
Total	**5.2555**	**3.5735**	**15.8786**	**0.0283**	**2.2127**	**0.0383**	**2.2510**	**0.5914**	**0.0368**	**0.6282**		**2,951.3019**	**2,951.3019**	**0.5268**	**0.0000**	**2,964.4713**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.5638	6.0000e-005	6.9700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0149	0.0149	4.0000e-005		0.0159
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.8939	3.3579	8.5849	0.0273	2.2127	0.0228	2.2355	0.5914	0.0213	0.6127		2,772.5362	2,772.5362	0.1530		2,776.3608
Stationary	2.7978	0.2155	7.2867	9.8000e-004		0.0154	0.0154		0.0154	0.0154		178.7508	178.7508	0.3738		188.0946
Total	**5.2555**	**3.5735**	**15.8786**	**0.0283**	**2.2127**	**0.0383**	**2.2510**	**0.5914**	**0.0368**	**0.6282**		**2,951.3019**	**2,951.3019**	**0.5268**	**0.0000**	**2,964.4713**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/25/2019	8/30/2019	5	27	
2	Building Construction	Building Construction	7/25/2019	8/26/2020	5	285	
3	Site Preparation	Site Preparation	9/1/2019	9/3/2019	5	2	
4	Grading	Grading	9/4/2019	9/9/2019	5	4	
5	Architectural Coating	Architectural Coating	8/13/2020	8/26/2020	5	10	
6	Paving	Paving	8/27/2020	9/9/2020	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 102,000; Non-Residential Outdoor: 34,000; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	6.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	1	2.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Building Construction	Welders	3	1.00	46	0.45
Site Preparation	Graders	1	4.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	6.00	132	0.36
Paving	Pumps	1	3.00	84	0.74
Paving	Rollers	1	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	14.00	0.00	770.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	80.00	12.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	250.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9228	0.0000	0.9228	0.1398	0.0000	0.1398			0.0000			0.0000
Off-Road	1.8368	17.9034	12.0963	0.0196		1.0221	1.0221		0.9587	0.9587		1,918.7062	1,918.7062	0.4613		1,930.2377
Total	**1.8368**	**17.9034**	**12.0963**	**0.0196**	**0.9228**	**1.0221**	**1.9449**	**0.1398**	**0.9587**	**1.0984**		**1,918.7062**	**1,918.7062**	**0.4613**		**1,930.2377**

3.2 Demolition - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2475	8.5662	1.8491	0.0226	0.4983	0.0323	0.5307	0.1366	0.0309	0.1675		2,468.2000	2,468.2000	0.2184		2,473.6606
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0550	0.0384	0.4332	1.2200e-003	0.1150	8.2000e-004	0.1158	0.0305	7.6000e-004	0.0313		121.8280	121.8280	3.8900e-003		121.9252
Total	**0.3025**	**8.6046**	**2.2823**	**0.0239**	**0.6133**	**0.0332**	**0.6465**	**0.1671**	**0.0317**	**0.1988**		**2,590.0279**	**2,590.0279**	**0.2223**		**2,595.5858**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4153	0.0000	0.4153	0.0629	0.0000	0.0629			0.0000			0.0000
Off-Road	0.4386	8.9373	12.5262	0.0196		0.3266	0.3266		0.3266	0.3266	0.0000	1,918.7062	1,918.7062	0.4613		1,930.2377
Total	**0.4386**	**8.9373**	**12.5262**	**0.0196**	**0.4153**	**0.3266**	**0.7419**	**0.0629**	**0.3266**	**0.3895**	**0.0000**	**1,918.7062**	**1,918.7062**	**0.4613**		**1,930.2377**

3.2 Demolition - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2475	8.5662	1.8491	0.0226	0.4983	0.0323	0.5307	0.1366	0.0309	0.1675		2,468.2000	2,468.2000	0.2184		2,473.6606
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0550	0.0384	0.4332	1.2200e-003	0.1150	8.2000e-004	0.1158	0.0305	7.6000e-004	0.0313		121.8280	121.8280	3.8900e-003		121.9252
Total	**0.3025**	**8.6046**	**2.2823**	**0.0239**	**0.6133**	**0.0332**	**0.6465**	**0.1671**	**0.0317**	**0.1988**		**2,590.0279**	**2,590.0279**	**0.2223**		**2,595.5858**

3.3 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5528	5.1384	3.2741	5.7800e-003		0.2704	0.2704		0.2517	0.2517		555.0105	555.0105	0.1640		559.1102
Total	**0.5528**	**5.1384**	**3.2741**	**5.7800e-003**		**0.2704**	**0.2704**		**0.2517**	**0.2517**		**555.0105**	**555.0105**	**0.1640**		**559.1102**

3.3 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0552	1.4879	0.3841	3.3100e-003	0.0812	0.0104	0.0916	0.0234	9.9000e-003	0.0333		355.2200	355.2200	0.0274		355.9056
Worker	0.3141	0.2192	2.4753	6.9900e-003	0.6572	4.6800e-003	0.6619	0.1743	4.3200e-003	0.1786		696.1597	696.1597	0.0222		696.7155
Total	**0.3694**	**1.7071**	**2.8594**	**0.0103**	**0.7384**	**0.0150**	**0.7535**	**0.1977**	**0.0142**	**0.2119**		**1,051.3797**	**1,051.3797**	**0.0497**		**1,052.6210**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1548	2.8968	3.5587	5.7800e-003		0.1079	0.1079		0.1079	0.1079	0.0000	555.0105	555.0105	0.1640		559.1102
Total	**0.1548**	**2.8968**	**3.5587**	**5.7800e-003**		**0.1079**	**0.1079**		**0.1079**	**0.1079**	**0.0000**	**555.0105**	**555.0105**	**0.1640**		**559.1102**

3.3 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0552	1.4879	0.3841	3.3100e-003	0.0812	0.0104	0.0916	0.0234	9.9000e-003	0.0333		355.2200	355.2200	0.0274		355.9056
Worker	0.3141	0.2192	2.4753	6.9900e-003	0.6572	4.6800e-003	0.6619	0.1743	4.3200e-003	0.1786		696.1597	696.1597	0.0222		696.7155
Total	**0.3694**	**1.7071**	**2.8594**	**0.0103**	**0.7384**	**0.0150**	**0.7535**	**0.1977**	**0.0142**	**0.2119**		**1,051.3797**	**1,051.3797**	**0.0497**		**1,052.6210**

3.3 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4957	4.6620	3.1552	5.7800e-003		0.2345	0.2345		0.2183	0.2183		544.5909	544.5909	0.1625		548.6526
Total	**0.4957**	**4.6620**	**3.1552**	**5.7800e-003**		**0.2345**	**0.2345**		**0.2183**	**0.2183**		**544.5909**	**544.5909**	**0.1625**		**548.6526**

3.3 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0448	1.3531	0.3447	3.2900e-003	0.0812	6.6200e-003	0.0879	0.0234	6.3300e-003	0.0297		352.8481	352.8481	0.0260		353.4988
Worker	0.2936	0.1978	2.2677	6.7700e-003	0.6572	4.6100e-003	0.6618	0.1743	4.2500e-003	0.1786		674.1976	674.1976	0.0201		674.7009
Total	**0.3384**	**1.5509**	**2.6124**	**0.0101**	**0.7384**	**0.0112**	**0.7497**	**0.1977**	**0.0106**	**0.2083**		**1,027.0457**	**1,027.0457**	**0.0462**		**1,028.1998**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1548	2.8968	3.5587	5.7800e-003		0.1079	0.1079		0.1079	0.1079	0.0000	544.5909	544.5909	0.1625		548.6526
Total	**0.1548**	**2.8968**	**3.5587**	**5.7800e-003**		**0.1079**	**0.1079**		**0.1079**	**0.1079**	**0.0000**	**544.5909**	**544.5909**	**0.1625**		**548.6526**

3.3 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0448	1.3531	0.3447	3.2900e-003	0.0812	6.6200e-003	0.0879	0.0234	6.3300e-003	0.0297		352.8481	352.8481	0.0260		353.4988
Worker	0.2936	0.1978	2.2677	6.7700e-003	0.6572	4.6100e-003	0.6618	0.1743	4.2500e-003	0.1786		674.1976	674.1976	0.0201		674.7009
Total	**0.3384**	**1.5509**	**2.6124**	**0.0101**	**0.7384**	**0.0112**	**0.7497**	**0.1977**	**0.0106**	**0.2083**		**1,027.0457**	**1,027.0457**	**0.0462**		**1,028.1998**

3.4 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.4762	5.6272	3.2217	6.4300e-003		0.2616	0.2616		0.2407	0.2407		636.3554	636.3554	0.2013		641.3888
Total	**0.4762**	**5.6272**	**3.2217**	**6.4300e-003**	**0.5303**	**0.2616**	**0.7919**	**0.0573**	**0.2407**	**0.2979**		**636.3554**	**636.3554**	**0.2013**		**641.3888**

3.4 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0314	0.0219	0.2475	7.0000e-004	0.0657	4.7000e-004	0.0662	0.0174	4.3000e-004	0.0179		69.6160	69.6160	2.2200e-003		69.6716
Total	**0.0314**	**0.0219**	**0.2475**	**7.0000e-004**	**0.0657**	**4.7000e-004**	**0.0662**	**0.0174**	**4.3000e-004**	**0.0179**		**69.6160**	**69.6160**	**2.2200e-003**		**69.6716**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.1508	2.9232	4.1000	6.4300e-003		0.0646	0.0646		0.0646	0.0646	0.0000	636.3554	636.3554	0.2013		641.3888
Total	**0.1508**	**2.9232**	**4.1000**	**6.4300e-003**	**0.2386**	**0.0646**	**0.3032**	**0.0258**	**0.0646**	**0.0903**	**0.0000**	**636.3554**	**636.3554**	**0.2013**		**641.3888**

3.4 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0314	0.0219	0.2475	7.0000e-004	0.0657	4.7000e-004	0.0662	0.0174	4.3000e-004	0.0179		69.6160	69.6160	2.2200e-003		69.6716
Total	**0.0314**	**0.0219**	**0.2475**	**7.0000e-004**	**0.0657**	**4.7000e-004**	**0.0662**	**0.0174**	**4.3000e-004**	**0.0179**		**69.6160**	**69.6160**	**2.2200e-003**		**69.6716**

3.5 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9845	0.0000	4.9845	2.5363	0.0000	2.5363			0.0000			0.0000
Off-Road	1.4875	14.3974	8.6423	0.0150		0.7880	0.7880		0.7433	0.7433		1,457.3934	1,457.3934	0.3153		1,465.2761
Total	**1.4875**	**14.3974**	**8.6423**	**0.0150**	**4.9845**	**0.7880**	**5.7725**	**2.5363**	**0.7433**	**3.2796**		**1,457.3934**	**1,457.3934**	**0.3153**		**1,465.2761**

3.5 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.5425	18.7733	4.0525	0.0496	1.0921	0.0709	1.1630	0.2993	0.0678	0.3671		5,409.2045	5,409.2045	0.4787		5,421.1717
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0314	0.0219	0.2475	7.0000e-004	0.0657	4.7000e-004	0.0662	0.0174	4.3000e-004	0.0179		69.6160	69.6160	2.2200e-003		69.6716
Total	**0.5739**	**18.7952**	**4.3000**	**0.0503**	**1.1578**	**0.0713**	**1.2292**	**0.3167**	**0.0682**	**0.3849**		**5,478.8204**	**5,478.8204**	**0.4809**		**5,490.8433**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2430	0.0000	2.2430	1.1413	0.0000	1.1413			0.0000			0.0000
Off-Road	0.3342	6.9054	9.0131	0.0150		0.3190	0.3190		0.3190	0.3190	0.0000	1,457.3934	1,457.3934	0.3153		1,465.2761
Total	**0.3342**	**6.9054**	**9.0131**	**0.0150**	**2.2430**	**0.3190**	**2.5621**	**1.1413**	**0.3190**	**1.4604**	**0.0000**	**1,457.3934**	**1,457.3934**	**0.3153**		**1,465.2761**

3.5 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.5425	18.7733	4.0525	0.0496	1.0921	0.0709	1.1630	0.2993	0.0678	0.3671		5,409.2045	5,409.2045	0.4787		5,421.1717
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0314	0.0219	0.2475	7.0000e-004	0.0657	4.7000e-004	0.0662	0.0174	4.3000e-004	0.0179		69.6160	69.6160	2.2200e-003		69.6716
Total	**0.5739**	**18.7952**	**4.3000**	**0.0503**	**1.1578**	**0.0713**	**1.2292**	**0.3167**	**0.0682**	**0.3849**		**5,478.8204**	**5,478.8204**	**0.4809**		**5,490.8433**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	39.3975					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**39.6397**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0220	0.0148	0.1701	5.1000e-004	0.0493	3.5000e-004	0.0496	0.0131	3.2000e-004	0.0134		50.5648	50.5648	1.5100e-003		50.6026
Total	**0.0220**	**0.0148**	**0.1701**	**5.1000e-004**	**0.0493**	**3.5000e-004**	**0.0496**	**0.0131**	**3.2000e-004**	**0.0134**		**50.5648**	**50.5648**	**1.5100e-003**		**50.6026**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	39.3975					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0594	1.3570	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**39.4569**	**1.3570**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0220	0.0148	0.1701	5.1000e-004	0.0493	3.5000e-004	0.0496	0.0131	3.2000e-004	0.0134		50.5648	50.5648	1.5100e-003		50.6026
Total	**0.0220**	**0.0148**	**0.1701**	**5.1000e-004**	**0.0493**	**3.5000e-004**	**0.0496**	**0.0131**	**3.2000e-004**	**0.0134**		**50.5648**	**50.5648**	**1.5100e-003**		**50.6026**

3.7 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8833	8.5450	8.9237	0.0141		0.4742	0.4742		0.4436	0.4436		1,337.6307	1,337.6307	0.3599		1,346.6292
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8833**	**8.5450**	**8.9237**	**0.0141**		**0.4742**	**0.4742**		**0.4436**	**0.4436**		**1,337.6307**	**1,337.6307**	**0.3599**		**1,346.6292**

3.7 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0514	0.0346	0.3968	1.1800e-003	0.1150	8.1000e-004	0.1158	0.0305	7.4000e-004	0.0313		117.9846	117.9846	3.5200e-003		118.0727
Total	**0.0514**	**0.0346**	**0.3968**	**1.1800e-003**	**0.1150**	**8.1000e-004**	**0.1158**	**0.0305**	**7.4000e-004**	**0.0313**		**117.9846**	**117.9846**	**3.5200e-003**		**118.0727**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3119	6.3781	9.7636	0.0141		0.3112	0.3112		0.3112	0.3112	0.0000	1,337.6307	1,337.6307	0.3599		1,346.6292
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3119**	**6.3781**	**9.7636**	**0.0141**		**0.3112**	**0.3112**		**0.3112**	**0.3112**	**0.0000**	**1,337.6307**	**1,337.6307**	**0.3599**		**1,346.6292**

3.7 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0514	0.0346	0.3968	1.1800e-003	0.1150	8.1000e-004	0.1158	0.0305	7.4000e-004	0.0313		117.9846	117.9846	3.5200e-003		118.0727
Total	**0.0514**	**0.0346**	**0.3968**	**1.1800e-003**	**0.1150**	**8.1000e-004**	**0.1158**	**0.0305**	**7.4000e-004**	**0.0313**		**117.9846**	**117.9846**	**3.5200e-003**		**118.0727**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Mitigated	0.8939	3.3579	8.5849	0.0273	2.2127	0.0228	2.2355	0.5914	0.0213	0.6127		2,772.536 2	2,772.536 2	0.1530		2,776.360 8
Unmitigated	0.8939	3.3579	8.5849	0.0273	2.2127	0.0228	2.2355	0.5914	0.0213	0.6127		2,772.536 2	2,772.536 2	0.1530		2,776.360 8

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Health Club	604.00	382.80	490.28	960,848	960,848
Total	604.00	382.80	490.28	960,848	960,848

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Health Club	9.50	7.30	7.30	16.90	64.10	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Health Club	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.5638	6.0000e-005	6.9700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0149	0.0149	4.0000e-005		0.0159
Unmitigated	1.5638	6.0000e-005	6.9700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0149	0.0149	4.0000e-005		0.0159

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1079					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.4552					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.5000e-004	6.0000e-005	6.9700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0149	0.0149	4.0000e-005		0.0159
Total	**1.5638**	**6.0000e-005**	**6.9700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0149**	**0.0149**	**4.0000e-005**		**0.0159**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1079					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.4552					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.5000e-004	6.0000e-005	6.9700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0149	0.0149	4.0000e-005		0.0159
Total	**1.5638**	**6.0000e-005**	**6.9700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0149**	**0.0149**	**4.0000e-005**		**0.0159**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0.5	50	636	0.73	CNG

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Emergency Generator - CNG (500 - 9999 HP)	2.7978	0.2155	7.2867	9.8000e-004		0.0154	0.0154		0.0154	0.0154		178.7508	178.7508	0.3738		188.0946
Total	**2.7978**	**0.2155**	**7.2867**	**9.8000e-004**		**0.0154**	**0.0154**		**0.0154**	**0.0154**		**178.7508**	**178.7508**	**0.3738**		**188.0946**

11.0 Vegetation

SDSU ARC Expansion

San Diego County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Health Club	68.00	1000sqft	1.56	68,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2021
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Trips and VMT - Based on applicant provided information.

On-road Fugitive Dust - CalEEMod defaults.

Demolition - Based on applicant provided information.

Grading - Based on applicant provided information.

Architectural Coating - In accordance with SDAPCD Rule 67.0.1.

Vehicle Trips - Based on trip rates from LLG Traffic Report.

Consumer Products - CalEEMod defaults.

Area Coating - CalEEMod defaults. In accordance with SDAPCD Rule 67.0.1.

Landscape Equipment - CalEEMod defaults.

Energy Use - CalEEMod defaults for electricity. No natural gas used onsite.

Water And Wastewater - CalEEMod defaults.

Solid Waste - CalEEMod defaults.

Construction Off-road Equipment Mitigation - Water twice daily in accordance with SDAPCD Rule 55.

Mobile Land Use Mitigation -

Area Mitigation - Architectural coatings in accordance with SDAPCD Rule 67.0.1.

Energy Mitigation - Onsite PV, no impact on air quality. 50% improvement over Title 24.

Water Mitigation - Low flow fixtures installed.

Waste Mitigation - In accordance with AB 939.

Stationary Sources - Emergency Generators and Fire Pumps - 400 kW natural gas emergency generator.

Fleet Mix -

Vehicle Emission Factors -

Vehicle Emission Factors -

SDSU ARC Expansion - San Diego County APCD Air District, Winter

Vehicle Emission Factors -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	100
tblAreaCoating	Area_EF_Nonresidential_Interior	250	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	27.00
tblConstructionPhase	NumDays	200.00	285.00
tblEnergyUse	NT24NG	7.25	0.00
tblEnergyUse	T24NG	4.31	0.00
tblGrading	AcresOfGrading	0.00	1.50
tblGrading	AcresOfGrading	0.50	1.00
tblGrading	MaterialExported	0.00	1,000.00
tblGrading	MaterialImported	0.00	1,000.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00

tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblTripsAndVMT	HaulingTripNumber	114.00	770.00
tblTripsAndVMT	VendorTripNumber	11.00	12.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	29.00	80.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	15.00	14.00
tblVehicleTrips	ST_TR	20.87	5.63
tblVehicleTrips	SU_TR	26.73	7.21
tblVehicleTrips	WD_TR	32.93	8.88

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	3.1192	40.2613	20.5264	0.0800	6.8808	1.3416	8.0274	3.0507	1.2572	4.1299	0.0000	8,395.6686	8,395.6686	1.0277	0.0000	8,421.3607
2020	40.5398	8.5839	9.2979	0.0188	0.7877	0.4750	1.1448	0.2108	0.4443	0.5510	0.0000	1,850.1671	1,850.1671	0.3633	0.0000	1,855.9772
Maximum	**40.5398**	**40.2613**	**20.5264**	**0.0800**	**6.8808**	**1.3416**	**8.0274**	**3.0507**	**1.2572**	**4.1299**	**0.0000**	**8,395.6686**	**8,395.6686**	**1.0277**	**0.0000**	**8,421.3607**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	1.4952	30.5278	21.2410	0.0800	4.1393	0.5152	4.6545	1.6558	0.5112	2.1669	0.0000	8,395.6686	8,395.6686	1.0277	0.0000	8,421.3607
2020	40.0161	6.4170	10.1377	0.0188	0.7877	0.3120	1.0024	0.2108	0.3120	0.4248	0.0000	1,850.1671	1,850.1671	0.3633	0.0000	1,855.9772
Maximum	**40.0161**	**30.5278**	**21.2410**	**0.0800**	**4.1393**	**0.5152**	**4.6545**	**1.6558**	**0.5112**	**2.1669**	**0.0000**	**8,395.6686**	**8,395.6686**	**1.0277**	**0.0000**	**8,421.3607**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**4.92**	**24.36**	**-5.21**	**0.00**	**35.75**	**54.46**	**38.33**	**42.77**	**51.62**	**44.63**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.5638	6.0000e-005	6.9700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0149	0.0149	4.0000e-005		0.0159
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.8665	3.4236	8.7026	0.0258	2.2127	0.0231	2.2358	0.5914	0.0216	0.6130		2,626.2393	2,626.2393	0.1558		2,630.1350
Stationary	2.7978	0.2155	7.2867	9.8000e-004		0.0154	0.0154		0.0154	0.0154		178.7508	178.7508	0.3738		188.0946
Total	**5.2281**	**3.6392**	**15.9963**	**0.0268**	**2.2127**	**0.0385**	**2.2512**	**0.5914**	**0.0370**	**0.6284**		**2,805.0050**	**2,805.0050**	**0.5296**	**0.0000**	**2,818.2455**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.5638	6.0000e-005	6.9700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0149	0.0149	4.0000e-005		0.0159
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.8665	3.4236	8.7026	0.0258	2.2127	0.0231	2.2358	0.5914	0.0216	0.6130		2,626.2393	2,626.2393	0.1558		2,630.1350
Stationary	2.7978	0.2155	7.2867	9.8000e-004		0.0154	0.0154		0.0154	0.0154		178.7508	178.7508	0.3738		188.0946
Total	**5.2281**	**3.6392**	**15.9963**	**0.0268**	**2.2127**	**0.0385**	**2.2512**	**0.5914**	**0.0370**	**0.6284**		**2,805.0050**	**2,805.0050**	**0.5296**	**0.0000**	**2,818.2455**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/25/2019	8/30/2019	5	27	
2	Building Construction	Building Construction	7/25/2019	8/26/2020	5	285	
3	Site Preparation	Site Preparation	9/1/2019	9/3/2019	5	2	
4	Grading	Grading	9/4/2019	9/9/2019	5	4	
5	Architectural Coating	Architectural Coating	8/13/2020	8/26/2020	5	10	
6	Paving	Paving	8/27/2020	9/9/2020	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 102,000; Non-Residential Outdoor: 34,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	6.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	1	2.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Building Construction	Welders	3	1.00	46	0.45
Site Preparation	Graders	1	4.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	6.00	132	0.36
Paving	Pumps	1	3.00	84	0.74
Paving	Rollers	1	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	14.00	0.00	770.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	80.00	12.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	250.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9228	0.0000	0.9228	0.1398	0.0000	0.1398			0.0000			0.0000
Off-Road	1.8368	17.9034	12.0963	0.0196		1.0221	1.0221		0.9587	0.9587		1,918.7062	1,918.7062	0.4613		1,930.2377
Total	**1.8368**	**17.9034**	**12.0963**	**0.0196**	**0.9228**	**1.0221**	**1.9449**	**0.1398**	**0.9587**	**1.0984**		**1,918.7062**	**1,918.7062**	**0.4613**		**1,930.2377**

3.2 Demolition - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2545	8.6540	1.9817	0.0223	0.4983	0.0331	0.5314	0.1366	0.0317	0.1682		2,426.666 0	2,426.666 0	0.2263		2,432.324 3
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0622	0.0431	0.4094	1.1500e-003	0.1150	8.2000e-004	0.1158	0.0305	7.6000e-004	0.0313		114.3679	114.3679	3.6900e-003		114.4602
Total	**0.3167**	**8.6971**	**2.3910**	**0.0234**	**0.6133**	**0.0339**	**0.6472**	**0.1671**	**0.0324**	**0.1995**		**2,541.033 9**	**2,541.033 9**	**0.2300**		**2,546.784 4**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4153	0.0000	0.4153	0.0629	0.0000	0.0629			0.0000			0.0000
Off-Road	0.4386	8.9373	12.5262	0.0196		0.3266	0.3266		0.3266	0.3266	0.0000	1,918.706 2	1,918.706 2	0.4613		1,930.237 7
Total	**0.4386**	**8.9373**	**12.5262**	**0.0196**	**0.4153**	**0.3266**	**0.7419**	**0.0629**	**0.3266**	**0.3895**	**0.0000**	**1,918.706 2**	**1,918.706 2**	**0.4613**		**1,930.237 7**

3.2 Demolition - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2545	8.6540	1.9817	0.0223	0.4983	0.0331	0.5314	0.1366	0.0317	0.1682		2,426.666 0	2,426.666 0	0.2263		2,432.324 3
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0622	0.0431	0.4094	1.1500e-003	0.1150	8.2000e-004	0.1158	0.0305	7.6000e-004	0.0313		114.3679	114.3679	3.6900e-003		114.4602
Total	**0.3167**	**8.6971**	**2.3910**	**0.0234**	**0.6133**	**0.0339**	**0.6472**	**0.1671**	**0.0324**	**0.1995**		**2,541.033 9**	**2,541.033 9**	**0.2300**		**2,546.784 4**

3.3 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5528	5.1384	3.2741	5.7800e-003		0.2704	0.2704		0.2517	0.2517		555.0105	555.0105	0.1640		559.1102
Total	**0.5528**	**5.1384**	**3.2741**	**5.7800e-003**		**0.2704**	**0.2704**		**0.2517**	**0.2517**		**555.0105**	**555.0105**	**0.1640**		**559.1102**

3.3 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0576	1.4891	0.4259	3.2300e-003	0.0812	0.0105	0.0918	0.0234	0.0101	0.0335		346.2003	346.2003	0.0292		346.9297
Worker	0.3553	0.2462	2.3392	6.5600e-003	0.6572	4.6800e-003	0.6619	0.1743	4.3200e-003	0.1786		653.5310	653.5310	0.0211		654.0582
Total	**0.4129**	**1.7353**	**2.7650**	**9.7900e-003**	**0.7384**	**0.0152**	**0.7536**	**0.1977**	**0.0144**	**0.2121**		**999.7313**	**999.7313**	**0.0503**		**1,000.9879**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1548	2.8968	3.5587	5.7800e-003		0.1079	0.1079		0.1079	0.1079	0.0000	555.0105	555.0105	0.1640		559.1102
Total	**0.1548**	**2.8968**	**3.5587**	**5.7800e-003**		**0.1079**	**0.1079**		**0.1079**	**0.1079**	**0.0000**	**555.0105**	**555.0105**	**0.1640**		**559.1102**

3.3 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0576	1.4891	0.4259	3.2300e-003	0.0812	0.0105	0.0918	0.0234	0.0101	0.0335		346.2003	346.2003	0.0292		346.9297
Worker	0.3553	0.2462	2.3392	6.5600e-003	0.6572	4.6800e-003	0.6619	0.1743	4.3200e-003	0.1786		653.5310	653.5310	0.0211		654.0582
Total	**0.4129**	**1.7353**	**2.7650**	**9.7900e-003**	**0.7384**	**0.0152**	**0.7536**	**0.1977**	**0.0144**	**0.2121**		**999.7313**	**999.7313**	**0.0503**		**1,000.9879**

3.3 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4957	4.6620	3.1552	5.7800e-003		0.2345	0.2345		0.2183	0.2183		544.5909	544.5909	0.1625		548.6526
Total	**0.4957**	**4.6620**	**3.1552**	**5.7800e-003**		**0.2345**	**0.2345**		**0.2183**	**0.2183**		**544.5909**	**544.5909**	**0.1625**		**548.6526**

3.3 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0470	1.3520	0.3826	3.2000e-003	0.0812	6.7500e-003	0.0880	0.0234	6.4500e-003	0.0298		343.7547	343.7547	0.0277		344.4462
Worker	0.3325	0.2221	2.1380	6.3500e-003	0.6572	4.6100e-003	0.6618	0.1743	4.2500e-003	0.1786		632.9056	632.9056	0.0191		633.3819
Total	**0.3794**	**1.5741**	**2.5205**	**9.5500e-003**	**0.7384**	**0.0114**	**0.7498**	**0.1977**	**0.0107**	**0.2084**		**976.6602**	**976.6602**	**0.0467**		**977.8281**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1548	2.8968	3.5587	5.7800e-003		0.1079	0.1079		0.1079	0.1079	0.0000	544.5909	544.5909	0.1625		548.6526
Total	**0.1548**	**2.8968**	**3.5587**	**5.7800e-003**		**0.1079**	**0.1079**		**0.1079**	**0.1079**	**0.0000**	**544.5909**	**544.5909**	**0.1625**		**548.6526**

3.3 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0470	1.3520	0.3826	3.2000e-003	0.0812	6.7500e-003	0.0880	0.0234	6.4500e-003	0.0298		343.7547	343.7547	0.0277		344.4462
Worker	0.3325	0.2221	2.1380	6.3500e-003	0.6572	4.6100e-003	0.6618	0.1743	4.2500e-003	0.1786		632.9056	632.9056	0.0191		633.3819
Total	**0.3794**	**1.5741**	**2.5205**	**9.5500e-003**	**0.7384**	**0.0114**	**0.7498**	**0.1977**	**0.0107**	**0.2084**		**976.6602**	**976.6602**	**0.0467**		**977.8281**

3.4 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.4762	5.6272	3.2217	6.4300e-003		0.2616	0.2616		0.2407	0.2407		636.3554	636.3554	0.2013		641.3888
Total	**0.4762**	**5.6272**	**3.2217**	**6.4300e-003**	**0.5303**	**0.2616**	**0.7919**	**0.0573**	**0.2407**	**0.2979**		**636.3554**	**636.3554**	**0.2013**		**641.3888**

3.4 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0355	0.0246	0.2339	6.6000e-004	0.0657	4.7000e-004	0.0662	0.0174	4.3000e-004	0.0179		65.3531	65.3531	2.1100e-003		65.4058
Total	**0.0355**	**0.0246**	**0.2339**	**6.6000e-004**	**0.0657**	**4.7000e-004**	**0.0662**	**0.0174**	**4.3000e-004**	**0.0179**		**65.3531**	**65.3531**	**2.1100e-003**		**65.4058**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.1508	2.9232	4.1000	6.4300e-003		0.0646	0.0646		0.0646	0.0646	0.0000	636.3554	636.3554	0.2013		641.3888
Total	**0.1508**	**2.9232**	**4.1000**	**6.4300e-003**	**0.2386**	**0.0646**	**0.3032**	**0.0258**	**0.0646**	**0.0903**	**0.0000**	**636.3554**	**636.3554**	**0.2013**		**641.3888**

3.4 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0355	0.0246	0.2339	6.6000e-004	0.0657	4.7000e-004	0.0662	0.0174	4.3000e-004	0.0179		65.3531	65.3531	2.1100e-003		65.4058
Total	**0.0355**	**0.0246**	**0.2339**	**6.6000e-004**	**0.0657**	**4.7000e-004**	**0.0662**	**0.0174**	**4.3000e-004**	**0.0179**		**65.3531**	**65.3531**	**2.1100e-003**		**65.4058**

3.5 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9845	0.0000	4.9845	2.5363	0.0000	2.5363			0.0000			0.0000
Off-Road	1.4875	14.3974	8.6423	0.0150		0.7880	0.7880		0.7433	0.7433		1,457.3934	1,457.3934	0.3153		1,465.2761
Total	**1.4875**	**14.3974**	**8.6423**	**0.0150**	**4.9845**	**0.7880**	**5.7725**	**2.5363**	**0.7433**	**3.2796**		**1,457.3934**	**1,457.3934**	**0.3153**		**1,465.2761**

3.5 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.5578	18.9657	4.3429	0.0488	1.0921	0.0725	1.1646	0.2993	0.0694	0.3687		5,318.180 3	5,318.180 3	0.4960		5,330.580 8
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0355	0.0246	0.2339	6.6000e-004	0.0657	4.7000e-004	0.0662	0.0174	4.3000e-004	0.0179		65.3531	65.3531	2.1100e-003		65.4058
Total	**0.5933**	**18.9903**	**4.5768**	**0.0494**	**1.1578**	**0.0730**	**1.2308**	**0.3167**	**0.0698**	**0.3865**		**5,383.533 4**	**5,383.533 4**	**0.4981**		**5,395.986 6**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2430	0.0000	2.2430	1.1413	0.0000	1.1413			0.0000			0.0000
Off-Road	0.3342	6.9054	9.0131	0.0150		0.3190	0.3190		0.3190	0.3190	0.0000	1,457.393 4	1,457.393 4	0.3153		1,465.276 1
Total	**0.3342**	**6.9054**	**9.0131**	**0.0150**	**2.2430**	**0.3190**	**2.5621**	**1.1413**	**0.3190**	**1.4604**	**0.0000**	**1,457.393 4**	**1,457.393 4**	**0.3153**		**1,465.276 1**

3.5 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.5578	18.9657	4.3429	0.0488	1.0921	0.0725	1.1646	0.2993	0.0694	0.3687		5,318.180 3	5,318.180 3	0.4960		5,330.580 8
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0355	0.0246	0.2339	6.6000e-004	0.0657	4.7000e-004	0.0662	0.0174	4.3000e-004	0.0179		65.3531	65.3531	2.1100e-003		65.4058
Total	**0.5933**	**18.9903**	**4.5768**	**0.0494**	**1.1578**	**0.0730**	**1.2308**	**0.3167**	**0.0698**	**0.3865**		**5,383.533 4**	**5,383.533 4**	**0.4981**		**5,395.986 6**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	39.3975					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**39.6397**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0249	0.0167	0.1604	4.8000e-004	0.0493	3.5000e-004	0.0496	0.0131	3.2000e-004	0.0134		47.4679	47.4679	1.4300e-003		47.5037
Total	**0.0249**	**0.0167**	**0.1604**	**4.8000e-004**	**0.0493**	**3.5000e-004**	**0.0496**	**0.0131**	**3.2000e-004**	**0.0134**		**47.4679**	**47.4679**	**1.4300e-003**		**47.5037**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	39.3975					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0594	1.3570	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**39.4569**	**1.3570**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0249	0.0167	0.1604	4.8000e-004	0.0493	3.5000e-004	0.0496	0.0131	3.2000e-004	0.0134		47.4679	47.4679	1.4300e-003		47.5037
Total	**0.0249**	**0.0167**	**0.1604**	**4.8000e-004**	**0.0493**	**3.5000e-004**	**0.0496**	**0.0131**	**3.2000e-004**	**0.0134**		**47.4679**	**47.4679**	**1.4300e-003**		**47.5037**

3.7 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8833	8.5450	8.9237	0.0141		0.4742	0.4742		0.4436	0.4436		1,337.6307	1,337.6307	0.3599		1,346.6292
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8833**	**8.5450**	**8.9237**	**0.0141**		**0.4742**	**0.4742**		**0.4436**	**0.4436**		**1,337.6307**	**1,337.6307**	**0.3599**		**1,346.6292**

3.7 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0582	0.0389	0.3742	1.1100e-003	0.1150	8.1000e-004	0.1158	0.0305	7.4000e-004	0.0313		110.7585	110.7585	3.3300e-003		110.8418
Total	**0.0582**	**0.0389**	**0.3742**	**1.1100e-003**	**0.1150**	**8.1000e-004**	**0.1158**	**0.0305**	**7.4000e-004**	**0.0313**		**110.7585**	**110.7585**	**3.3300e-003**		**110.8418**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3119	6.3781	9.7636	0.0141		0.3112	0.3112		0.3112	0.3112	0.0000	1,337.6307	1,337.6307	0.3599		1,346.6292
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3119**	**6.3781**	**9.7636**	**0.0141**		**0.3112**	**0.3112**		**0.3112**	**0.3112**	**0.0000**	**1,337.6307**	**1,337.6307**	**0.3599**		**1,346.6292**

3.7 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0582	0.0389	0.3742	1.1100e-003	0.1150	8.1000e-004	0.1158	0.0305	7.4000e-004	0.0313		110.7585	110.7585	3.3300e-003		110.8418
Total	**0.0582**	**0.0389**	**0.3742**	**1.1100e-003**	**0.1150**	**8.1000e-004**	**0.1158**	**0.0305**	**7.4000e-004**	**0.0313**		**110.7585**	**110.7585**	**3.3300e-003**		**110.8418**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.8665	3.4236	8.7026	0.0258	2.2127	0.0231	2.2358	0.5914	0.0216	0.6130		2,626.2393	2,626.2393	0.1558		2,630.1350
Unmitigated	0.8665	3.4236	8.7026	0.0258	2.2127	0.0231	2.2358	0.5914	0.0216	0.6130		2,626.2393	2,626.2393	0.1558		2,630.1350

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Health Club	604.00	382.80	490.28	960,848	960,848
Total	604.00	382.80	490.28	960,848	960,848

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Health Club	9.50	7.30	7.30	16.90	64.10	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Health Club	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.5638	6.0000e-005	6.9700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0149	0.0149	4.0000e-005		0.0159
Unmitigated	1.5638	6.0000e-005	6.9700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0149	0.0149	4.0000e-005		0.0159

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1079					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.4552					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.5000e-004	6.0000e-005	6.9700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0149	0.0149	4.0000e-005		0.0159
Total	**1.5638**	**6.0000e-005**	**6.9700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0149**	**0.0149**	**4.0000e-005**		**0.0159**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1079					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.4552					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.5000e-004	6.0000e-005	6.9700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0149	0.0149	4.0000e-005		0.0159
Total	**1.5638**	**6.0000e-005**	**6.9700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0149**	**0.0149**	**4.0000e-005**		**0.0159**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0.5	50	636	0.73	CNG

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Emergency Generator - CNG (500 - 9999 HP)	2.7978	0.2155	7.2867	9.8000e-004		0.0154	0.0154		0.0154	0.0154		178.7508	178.7508	0.3738		188.0946
Total	**2.7978**	**0.2155**	**7.2867**	**9.8000e-004**		**0.0154**	**0.0154**		**0.0154**	**0.0154**		**178.7508**	**178.7508**	**0.3738**		**188.0946**

11.0 Vegetation

Attachment B

CO Hotspots Analysis

CO Hotspots Screening Evaluation

To verify that the project would not cause or contribute to a violation of the CO standards, a screening evaluation of the potential for CO hotspots was conducted. The California Department of Transportation (Caltrans) and the U.C. Davis Institute of Transportation Studies *Transportation Project-Level Carbon Monoxide Protocol* (CO Protocol) (Caltrans 1997), and the SCAQMD *CEQA Air Quality Handbook* (SCAQMD 1993) were followed. The City of San Diego recommends that a quantitative analysis of CO hotspots be performed if a proposed development causes a six- or four-lane roadway to deteriorate to a level of service (LOS) E or worse, causes a six-lane roadway to drop to LOS F, or if a proposed development is within 400 feet of a sensitive receptor and the LOS is D or worse.

For each scenario (existing plus cumulative projects plus total project and horizon year plus total project), the screening evaluation presents LOS with project improvements (mitigation), whether the recommended improvements (mitigation measures) are feasible, and whether a quantitative CO hotspots analysis may be required. According to the CO Protocol, there is a cap on the number of intersections that need to be analyzed for any one project. For a single project with multiple intersections, only the three intersections representing the worst LOS ratings of the project, and, to the extent they are different intersections, the three intersections representing the highest traffic volumes, need be analyzed. For each intersection failing a screening test as described in this protocol, an additional intersection should be analyzed (Caltrans 1997).

Table 1 shows a summary of the Project's LOS for all 6 intersections evaluated for existing year 2021.

Table 1
SDSU ARC Intersection Analysis

Intersection	Control Type	Peak Hour	Existing + Cumulative Projects	Existing + Cumulative Projects + Project
			LOS	LOS
1. 55th Street / Remington Road	Signal	AM PM	A B	A B
2. 55th Street / Peterson Gym	Signal	AM PM	A A	A A
3. 55th St / Aztec Walk	Signal	AM PM	A A	A A
4. 55th St / Hardy Ave	Signal	AM PM	C C	C B
5. Montezuma Road / Yerba Santa Drive	Signal	AM PM	B B	B B
6. 55th St / Montezuma Rd	Signal	AM PM	**E** **E**	**E** **E**

Notes: LOS – Level of service.
Bold indicates an LOS of D or worse.
Source: LLG 2018.

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Montezuma&55th2021
RUN: STANDARD RUN (WORST CASE ANGLE)
POLLUTANT: CO

I. SITE VARIABLES

U=	1.0 M/S	Z0=	100. CM	ALT=	140.2 (M)
BRG=	WORST CASE	VD=	0.0 CM/S		
CLAS=	7 (G)	VS=	0.0 CM/S		
MIXH=	1000. M	AMB=	2.6 PPM		
SIGTH=	10. DEGREES	TEMP=	9.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)
A. Montezuma Rd	500	36	30	36	AG	442	2.8	0.0	33.0
B. Montezuma Rd	500	18	-30	18	AG	945	2.8	0.0	33.0
C. Montezuma Rd	500	-12	-18	-12	AG	81	2.8	0.0	33.0
D. Montezuma Rd	-30	18	-500	18	AG	1270	2.8	0.0	33.0
E. Montezuma Rd	-500	-12	30	-12	AG	26	2.8	0.0	33.0
F. Montezuma Rd	-500	-36	0	-36	AG	634	2.8	0.0	33.0
G. Montezuma Rd	-500	-54	-18	-54	AG	235	2.8	0.0	33.0
H. Montezuma Rd	0	-36	500	-36	AG	1211	2.8	0.0	33.0
I. 55th St NBLA	12	-500	12	18	AG	53	2.8	0.0	33.0
J. 55th St NBTA	30	-500	30	-12	AG	13	2.8	0.0	33.0
K. 55th St NBRA	42	-500	42	-36	AG	12	2.8	0.0	33.0
L. 55th St NBD	30	-12	30	500	AG	690	2.8	0.0	33.0
M. 55th St SBLA	0	500	0	-36	AG	313	2.8	0.0	33.0
N. 55th St SBTA	-18	500	-18	-12	AG	26	2.8	0.0	33.0
O. 55th St SBRA	-30	500	-30	18	AG	524	2.8	0.0	33.0
P. 55th St SBD	-18	-12	-18	-500	AG	133	2.8	0.0	33.0

LINK COORDINATES (FT) apply to X1, Y1, X2, Y2.

III. RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. SR1	-60	50	5.9
2. SR2	60	70	5.9
3. SR3	-50	-80	5.9
4. SR4	70	-70	5.9

COORDINATES (FT)

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Montezuma&55th2021
RUN: STANDARD RUN (WORST CASE ANGLE)
POLLUTANT: CO

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SR1	104.	3.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1
2. SR2	251.	2.9	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
3. SR3	11.	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4. SR4	344.	3.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. SR1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2. SR2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
3. SR3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
4. SR4	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0

Attachment C

AERMOD and HARP2 Output Files

*** MODEL SETUP OPTIONS SUMMARY ***

- -

**Model Is Setup For Calculation of Average CONCentration Values.

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses URBAN Dispersion Algorithm for the SBL for 6 Source(s),
for Total of 1 Urban Area(s):
Urban Population = 1407000.0 ; Urban Roughness Length = 1.000 m

**Model Uses Regulatory DEFAULT Options:
1. Stack-tip Downwash.
2. Model Accounts for ELEVated Terrain Effects.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.
6. Urban Roughness Length of 1.0 Meter Assumed.

**Other Options Specified:
ADJ_U* - Use ADJ_U* option for SBL in AERMET
TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: PM_10

**Model Calculates 1 Short Term Average(s) of: 1-HR
and Calculates PERIOD Averages

**This Run Includes: 8 Source(s); 1 Source Group(s); and 68 Receptor(s)

with: 0 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 8 VOLUME source(s)
and: 0 AREA type source(s)
and: 0 LINE source(s)
and: 0 OPENPIT source(s)
and: 0 BUOYANT LINE source(s) with 0 line(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 18081

**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 132.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.5 MB of RAM.

**Input Runstream File: aermod.inp
**Output Print File: aermod.out

**Detailed Error/Message File: SDSU ARC.err
**File for Summary of Results: SDSU ARC.sum

*** MODELOPTs: RegDFAULT CONC ELEV Urb&Rur ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: KVR_2014_2016_18081.SFC Met Version: 18081
Profile file: KVR_2014_2016_18081.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 93107 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN
Year: 2014 Year: 2014

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
14	01	01	1	01	-7.0	0.121	-9.000	-9.000	-999.	101.	22.4	0.41	1.30	1.00	1.00	38.	10.0	282.9	10.0
14	01	01	1	02	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.47	1.30	1.00	0.00	0.	10.0	281.5	10.0
14	01	01	1	03	-12.1	0.160	-9.000	-9.000	-999.	154.	30.1	0.41	1.30	1.00	1.30	41.	10.0	281.5	10.0
14	01	01	1	04	-23.8	0.240	-9.000	-9.000	-999.	283.	63.6	0.41	1.30	1.00	1.90	52.	10.0	282.1	10.0
14	01	01	1	05	-24.4	0.245	-9.000	-9.000	-999.	291.	66.1	0.48	1.30	1.00	1.80	63.	10.0	281.2	10.0
14	01	01	1	06	-3.6	0.089	-9.000	-9.000	-999.	89.	17.3	0.41	1.30	1.00	0.70	52.	10.0	281.2	10.0
14	01	01	1	07	-21.1	0.214	-9.000	-9.000	-999.	237.	50.2	0.41	1.30	1.00	1.70	56.	10.0	281.6	10.0
14	01	01	1	08	-14.1	0.216	-9.000	-9.000	-999.	241.	63.8	0.41	1.30	0.50	1.70	40.	10.0	282.4	10.0
14	01	01	1	09	46.5	0.122	0.485	0.018	87.	106.	-3.5	0.51	1.30	0.30	0.50	129.	10.0	286.4	10.0
14	01	01	1	10	112.5	0.221	0.866	0.012	206.	250.	-8.6	0.50	1.30	0.23	1.10	302.	10.0	289.4	10.0
14	01	01	1	11	155.9	0.437	1.096	0.009	302.	693.	-47.8	0.50	1.30	0.21	2.80	302.	10.0	291.4	10.0
14	01	01	1	12	175.8	0.366	1.266	0.007	412.	536.	-24.9	0.38	1.30	0.20	2.40	343.	10.0	292.2	10.0
14	01	01	1	13	172.1	0.355	1.402	0.008	571.	508.	-23.1	0.38	1.30	0.20	2.30	338.	10.0	293.9	10.0
14	01	01	1	14	146.0	0.448	1.439	0.009	727.	719.	-54.8	0.38	1.30	0.21	3.20	334.	10.0	294.9	10.0
14	01	01	1	15	95.5	0.493	1.293	0.009	806.	831.	-111.9	0.50	1.30	0.24	3.40	319.	10.0	294.2	10.0
14	01	01	1	16	28.6	0.407	0.872	0.009	826.	629.	-209.9	0.50	1.30	0.33	2.90	319.	10.0	293.4	10.0
14	01	01	1	17	-25.1	0.293	-9.000	-9.000	-999.	389.	94.3	0.50	1.30	0.61	2.10	312.	10.0	291.4	10.0
14	01	01	1	18	-12.9	0.167	-9.000	-9.000	-999.	174.	32.4	0.53	1.30	1.00	1.20	277.	10.0	288.9	10.0
14	01	01	1	19	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.47	1.30	1.00	0.00	0.	10.0	287.6	10.0
14	01	01	1	20	-6.6	0.117	-9.000	-9.000	-999.	96.	21.7	0.38	1.30	1.00	1.00	357.	10.0	286.5	10.0
14	01	01	1	21	-4.4	0.097	-9.000	-9.000	-999.	73.	18.6	0.53	1.30	1.00	0.70	291.	10.0	285.0	10.0
14	01	01	1	22	-21.3	0.216	-9.000	-9.000	-999.	241.	51.4	0.32	1.30	1.00	1.90	8.	10.0	283.6	10.0
14	01	01	1	23	-4.3	0.095	-9.000	-9.000	-999.	81.	18.0	0.38	1.30	1.00	0.80	357.	10.0	282.4	10.0
14	01	01	1	24	-11.4	0.155	-9.000	-9.000	-999.	146.	29.0	0.38	1.30	1.00	1.30	354.	10.0	282.2	10.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
14	01	01	01	10.0	1	38.	1.00	282.9	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

*** THE SUMMARY OF MAXIMUM PERIOD (26304 HRS) RESULTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

NETWORK
GROUP ID AVERAGE CONC RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID
- -

ALL 1ST HIGHEST VALUE IS 75.02163 AT (492921.82, 3626124.23, 137.17, 137.17, 0.00) DC
2ND HIGHEST VALUE IS 73.63845 AT (492941.54, 3626124.85, 137.24, 137.24, 0.00) DC
3RD HIGHEST VALUE IS 64.22230 AT (492898.40, 3626121.77, 137.10, 137.10, 0.00) DC
4TH HIGHEST VALUE IS 61.32937 AT (492981.72, 3626131.44, 134.33, 139.26, 0.00) DC
5TH HIGHEST VALUE IS 53.69735 AT (492943.38, 3626113.14, 137.31, 137.31, 0.00) DC
6TH HIGHEST VALUE IS 53.57916 AT (492999.14, 3626136.14, 133.60, 139.34, 0.00) DC
7TH HIGHEST VALUE IS 53.24337 AT (492922.43, 3626112.52, 137.23, 137.23, 0.00) DC
8TH HIGHEST VALUE IS 47.25968 AT (492982.53, 3626116.04, 134.72, 139.26, 0.00) DC
9TH HIGHEST VALUE IS 46.16151 AT (492899.02, 3626110.06, 137.15, 137.15, 0.00) DC
10TH HIGHEST VALUE IS 45.10117 AT (492999.14, 3626122.19, 135.39, 139.34, 0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

DATE NETWORK
GROUP ID AVERAGE CONC (YYMMDDHH) RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID
- -

ALL HIGH 1ST HIGH VALUE IS 2167.84988 ON 15012708: AT (492921.82, 3626124.23, 137.17, 137.17, 0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** MODELOPTs: RegDFAULT CONC ELEV Urb&Rur ADJ_U*

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of   0 Fatal Error Message(s)
A Total of   1 Warning Message(s)
A Total of   903 Informational Message(s)

A Total of   26304 Hours Were Processed

A Total of   788 Calm Hours Identified

A Total of   115 Missing Hours Identified (0.44 Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
ME W187   209   MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

HARP2 - HRACalc (dated 17023) 9/25/2018 4:24:49 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: All
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 1.25

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 1.25
2<9 Years Bin: 0
2<16 Years Bin: 0
16<30 Years Bin: 0
16 to 70 Years Bin: 0

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: ON

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.05
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating cancer risk
Cancer risk breakdown by pollutant and receptor saved to: C:\Users\Public\Desktop\Lakes Environmental\SDSU\SDSU ARC\SDSU ARC\hra\Res-onsite-1CancerRisk.csv
Cancer risk total by receptor saved to: C:\Users\Public\Desktop\Lakes Environmental\SDSU\SDSU ARC\SDSU ARC\hra\Res-onsite-1CancerRiskSumByRec.csv
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: C:\Users\Public\Desktop\Lakes Environmental\SDSU\SDSU ARC\SDSU ARC\hra\Res-onsite-1NCChronicRisk.csv
Chronic risk total by receptor saved to: C:\Users\Public\Desktop\Lakes Environmental\SDSU\SDSU ARC\SDSU ARC\hra\Res-onsite-1NCChronicRiskSumByRec.csv
Calculating acute risk
Acute risk breakdown by pollutant and receptor saved to: C:\Users\Public\Desktop\Lakes Environmental\SDSU\SDSU ARC\SDSU ARC\hra\Res-onsite-1NCAcuteRisk.csv
Acute risk total by receptor saved to: C:\Users\Public\Desktop\Lakes Environmental\SDSU\SDSU ARC\SDSU ARC\hra\Res-onsite-1NCAcuteRiskSumByRec.csv
HRA ran successfully

SDSU ARC Expansion

San Diego County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Health Club	68.00	1000sqft	1.56	68,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Off-road Equipment - Based on applicant provided information.

Trips and VMT - Based on applicant provided information.

On-road Fugitive Dust - CalEEMod defaults.

Demolition - Based on applicant provided information.

Grading - Based on applicant provided information.

Architectural Coating - In accordance with SDAPCD Rule 67.0.1.

Vehicle Trips - Based on trip rates from LLG Traffic Report.

Consumer Products - CalEEMod defaults.

Area Coating - CalEEMod defaults. In accordance with SDAPCD Rule 67.0.1.

Landscape Equipment - CalEEMod defaults.

Energy Use - CalEEMod defaults for electricity. No natural gas used onsite.

Water And Wastewater - CalEEMod defaults.

Solid Waste - CalEEMod defaults.

Construction Off-road Equipment Mitigation - Water twice daily in accordance with SDAPCD Rule 55.

Mobile Land Use Mitigation -

Area Mitigation - Architectural coatings in accordance with SDAPCD Rule 67.0.1.

Energy Mitigation - Onsite PV, no impact on air quality. 50% improvement over Title 24.

Water Mitigation - Low flow fixtures installed.

Waste Mitigation - In accordance with AB 939.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00

tblAreaCoating	Area_EF_Nonresidential_Exterior	250	100
tblAreaCoating	Area_EF_Nonresidential_Interior	250	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	200.00	285.00
tblConstructionPhase	NumDays	20.00	27.00
tblEnergyUse	NT24NG	7.25	0.00
tblEnergyUse	T24NG	4.31	0.00
tblGrading	AcresOfGrading	0.00	1.50
tblGrading	AcresOfGrading	0.50	1.00
tblGrading	MaterialExported	0.00	1,000.00
tblGrading	MaterialImported	0.00	1,000.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Paving
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	4.00

tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	0.19
tblTripsAndVMT	HaulingTripLength	20.00	0.19
tblTripsAndVMT	HaulingTripLength	20.00	0.19
tblTripsAndVMT	HaulingTripLength	20.00	0.19
tblTripsAndVMT	HaulingTripLength	20.00	0.19
tblTripsAndVMT	HaulingTripLength	20.00	0.19
tblTripsAndVMT	HaulingTripNumber	114.00	770.00
tblTripsAndVMT	VendorTripLength	7.30	0.19
tblTripsAndVMT	VendorTripLength	7.30	0.19
tblTripsAndVMT	VendorTripLength	7.30	0.19
tblTripsAndVMT	VendorTripLength	7.30	0.19
tblTripsAndVMT	VendorTripLength	7.30	0.19
tblTripsAndVMT	VendorTripLength	7.30	0.19
tblTripsAndVMT	VendorTripNumber	11.00	12.00
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
tblTripsAndVMT	WorkerTripNumber	29.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	6.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblVehicleTrips	ST_TR	20.87	3.66
tblVehicleTrips	SU_TR	26.73	4.69
tblVehicleTrips	WD_TR	32.93	5.78

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0621	0.6648	0.3908	7.3000e-004	0.0232	0.0312	0.0543	7.0800e-003	0.0291	0.0362	0.0000	64.7343	64.7343	0.0167	0.0000	65.1526
2020	0.2466	0.5140	0.3401	6.4000e-004	2.0000e-004	0.0230	0.0232	6.0000e-005	0.0215	0.0216	0.0000	55.5530	55.5530	0.0154	0.0000	55.9383
Maximum	**0.2466**	**0.6648**	**0.3908**	**7.3000e-004**	**0.0232**	**0.0312**	**0.0543**	**7.0800e-003**	**0.0291**	**0.0362**	**0.0000**	**64.7343**	**64.7343**	**0.0167**	**0.0000**	**65.1526**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0179	0.3983	0.4144	7.3000e-004	0.0106	0.0114	0.0219	3.2200e-003	0.0114	0.0146	0.0000	64.7343	64.7343	0.0167	0.0000	65.1526
2020	0.2137	0.3506	0.3788	6.4000e-004	2.0000e-004	0.0113	0.0115	6.0000e-005	0.0113	0.0114	0.0000	55.5529	55.5529	0.0154	0.0000	55.9382
Maximum	**0.2137**	**0.3983**	**0.4144**	**7.3000e-004**	**0.0106**	**0.0114**	**0.0219**	**3.2200e-003**	**0.0114**	**0.0146**	**0.0000**	**64.7343**	**64.7343**	**0.0167**	**0.0000**	**65.1526**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**24.99**	**36.47**	**-8.53**	**0.00**	**54.00**	**58.14**	**56.88**	**54.06**	**55.21**	**55.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
4	**5-24-2019**	**8-23-2019**	0.3130	0.1737
5	**8-24-2019**	**11-23-2019**	0.3245	0.1901
6	**11-24-2019**	**2-23-2020**	0.2020	0.1256
7	**2-24-2020**	**5-23-2020**	0.1905	0.1228
8	**5-24-2020**	**8-23-2020**	0.3574	0.2862
9	**8-24-2020**	**9-30-2020**	0.0978	0.0813
		Highest	0.3574	0.2862

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2853	1.0000e-005	6.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2200e-003	1.2200e-003	0.0000	0.0000	1.3000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	184.6731	184.6731	7.4300e-003	1.5400e-003	185.3172
Mobile	0.0991	0.4034	1.0011	2.9300e-003	0.2356	3.0200e-003	0.2386	0.0631	2.8300e-003	0.0659	0.0000	270.1609	270.1609	0.0160	0.0000	270.5613
Waste						0.0000	0.0000		0.0000	0.0000	78.6793	0.0000	78.6793	4.6498	0.0000	194.9246
Water						0.0000	0.0000		0.0000	0.0000	1.2759	26.0638	27.3397	0.1321	3.3100e-003	31.6289
Total	**0.3844**	**0.4034**	**1.0017**	**2.9300e-003**	**0.2356**	**3.0200e-003**	**0.2386**	**0.0631**	**2.8300e-003**	**0.0659**	**79.9552**	**480.8990**	**560.8542**	**4.8054**	**4.8500e-003**	**682.4334**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2853	1.0000e-005	6.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2200e-003	1.2200e-003	0.0000	0.0000	1.3000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	171.2282	171.2282	6.8900e-003	1.4300e-003	171.8254
Mobile	0.0991	0.4034	1.0011	2.9300e-003	0.2356	3.0200e-003	0.2386	0.0631	2.8300e-003	0.0659	0.0000	270.1609	270.1609	0.0160	0.0000	270.5613
Waste						0.0000	0.0000		0.0000	0.0000	19.6698	0.0000	19.6698	1.1625	0.0000	48.7312
Water						0.0000	0.0000		0.0000	0.0000	1.0207	22.6410	23.6617	0.1058	2.6600e-003	27.0993
Total	**0.3844**	**0.4034**	**1.0017**	**2.9300e-003**	**0.2356**	**3.0200e-003**	**0.2386**	**0.0631**	**2.8300e-003**	**0.0659**	**20.6906**	**464.0313**	**484.7218**	**1.2911**	**4.0900e-003**	**518.2185**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**74.12**	**3.51**	**13.57**	**73.13**	**15.67**	**24.06**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/25/2019	8/30/2019	5	27	
2	Building Construction	Building Construction	7/25/2019	8/26/2020	5	285	
3	Site Preparation	Site Preparation	9/1/2019	9/3/2019	5	2	
4	Grading	Grading	9/4/2019	9/9/2019	5	4	
5	Architectural Coating	Architectural Coating	8/13/2020	8/26/2020	5	10	
6	Paving	Paving	8/27/2020	9/9/2020	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 102,000; Non-Residential Outdoor: 34,000; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	6.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	1	2.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Building Construction	Welders	3	1.00	46	0.45
Site Preparation	Graders	1	4.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	6.00	132	0.36
Paving	Pumps	1	3.00	84	0.74
Paving	Rollers	1	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	0.00	0.00	770.00	10.80	0.19	0.19	LD_Mix	HDT_Mix	HHDT
Building Construction	6	0.00	12.00	0.00	10.80	0.19	0.19	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	0.00	0.00	0.00	10.80	0.19	0.19	LD_Mix	HDT_Mix	HHDT
Grading	3	0.00	0.00	250.00	10.80	0.19	0.19	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	0.19	0.19	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.80	0.19	0.19	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0125	0.0000	0.0125	1.8900e-003	0.0000	1.8900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0248	0.2417	0.1633	2.7000e-004		0.0138	0.0138		0.0129	0.0129	0.0000	23.4984	23.4984	5.6500e-003	0.0000	23.6396
Total	**0.0248**	**0.2417**	**0.1633**	**2.7000e-004**	**0.0125**	**0.0138**	**0.0263**	**1.8900e-003**	**0.0129**	**0.0148**	**0.0000**	**23.4984**	**23.4984**	**5.6500e-003**	**0.0000**	**23.6396**

3.2 Demolition - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.2000e-004	0.0387	6.2100e-003	4.0000e-005	7.0000e-005	4.0000e-005	1.1000e-004	2.0000e-005	4.0000e-005	6.0000e-005	0.0000	4.0354	4.0354	8.1000e-004	0.0000	4.0556
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.2000e-004**	**0.0387**	**6.2100e-003**	**4.0000e-005**	**7.0000e-005**	**4.0000e-005**	**1.1000e-004**	**2.0000e-005**	**4.0000e-005**	**6.0000e-005**	**0.0000**	**4.0354**	**4.0354**	**8.1000e-004**	**0.0000**	**4.0556**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.6100e-003	0.0000	5.6100e-003	8.5000e-004	0.0000	8.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9200e-003	0.1207	0.1691	2.7000e-004		4.4100e-003	4.4100e-003		4.4100e-003	4.4100e-003	0.0000	23.4984	23.4984	5.6500e-003	0.0000	23.6396
Total	**5.9200e-003**	**0.1207**	**0.1691**	**2.7000e-004**	**5.6100e-003**	**4.4100e-003**	**0.0100**	**8.5000e-004**	**4.4100e-003**	**5.2600e-003**	**0.0000**	**23.4984**	**23.4984**	**5.6500e-003**	**0.0000**	**23.6396**

3.2 Demolition - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.2000e-004	0.0387	6.2100e-003	4.0000e-005	7.0000e-005	4.0000e-005	1.1000e-004	2.0000e-005	4.0000e-005	6.0000e-005	0.0000	4.0354	4.0354	8.1000e-004	0.0000	4.0556
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.2000e-004**	**0.0387**	**6.2100e-003**	**4.0000e-005**	**7.0000e-005**	**4.0000e-005**	**1.1000e-004**	**2.0000e-005**	**4.0000e-005**	**6.0000e-005**	**0.0000**	**4.0354**	**4.0354**	**8.1000e-004**	**0.0000**	**4.0556**

3.3 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0315	0.2929	0.1866	3.3000e-004		0.0154	0.0154		0.0144	0.0144	0.0000	28.6993	28.6993	8.4800e-003	0.0000	28.9113
Total	**0.0315**	**0.2929**	**0.1866**	**3.3000e-004**		**0.0154**	**0.0154**		**0.0144**	**0.0144**	**0.0000**	**28.6993**	**28.6993**	**8.4800e-003**	**0.0000**	**28.9113**

3.3 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2100e-003	0.0444	0.0121	4.0000e-005	1.4000e-004	6.0000e-005	1.9000e-004	4.0000e-005	5.0000e-005	9.0000e-005	0.0000	3.9695	3.9695	7.8000e-004	0.0000	3.9890
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.2100e-003**	**0.0444**	**0.0121**	**4.0000e-005**	**1.4000e-004**	**6.0000e-005**	**1.9000e-004**	**4.0000e-005**	**5.0000e-005**	**9.0000e-005**	**0.0000**	**3.9695**	**3.9695**	**7.8000e-004**	**0.0000**	**3.9890**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.8300e-003	0.1651	0.2029	3.3000e-004		6.1500e-003	6.1500e-003		6.1500e-003	6.1500e-003	0.0000	28.6993	28.6993	8.4800e-003	0.0000	28.9113
Total	**8.8300e-003**	**0.1651**	**0.2029**	**3.3000e-004**		**6.1500e-003**	**6.1500e-003**		**6.1500e-003**	**6.1500e-003**	**0.0000**	**28.6993**	**28.6993**	**8.4800e-003**	**0.0000**	**28.9113**

3.3 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2100e-003	0.0444	0.0121	4.0000e-005	1.4000e-004	6.0000e-005	1.9000e-004	4.0000e-005	5.0000e-005	9.0000e-005	0.0000	3.9695	3.9695	7.8000e-004	0.0000	3.9890
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.2100e-003**	**0.0444**	**0.0121**	**4.0000e-005**	**1.4000e-004**	**6.0000e-005**	**1.9000e-004**	**4.0000e-005**	**5.0000e-005**	**9.0000e-005**	**0.0000**	**3.9695**	**3.9695**	**7.8000e-004**	**0.0000**	**3.9890**

3.3 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0424	0.3986	0.2698	4.9000e-004		0.0201	0.0201		0.0187	0.0187	0.0000	42.2408	42.2408	0.0126	0.0000	42.5559
Total	**0.0424**	**0.3986**	**0.2698**	**4.9000e-004**		**0.0201**	**0.0201**		**0.0187**	**0.0187**	**0.0000**	**42.2408**	**42.2408**	**0.0126**	**0.0000**	**42.5559**

3.3 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6000e-003	0.0643	0.0166	6.0000e-005	2.0000e-004	5.0000e-005	2.6000e-004	6.0000e-005	5.0000e-005	1.1000e-004	0.0000	5.9682	5.9682	1.0800e-003	0.0000	5.9951
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.6000e-003**	**0.0643**	**0.0166**	**6.0000e-005**	**2.0000e-004**	**5.0000e-005**	**2.6000e-004**	**6.0000e-005**	**5.0000e-005**	**1.1000e-004**	**0.0000**	**5.9682**	**5.9682**	**1.0800e-003**	**0.0000**	**5.9951**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0132	0.2477	0.3043	4.9000e-004		9.2300e-003	9.2300e-003		9.2300e-003	9.2300e-003	0.0000	42.2408	42.2408	0.0126	0.0000	42.5558
Total	**0.0132**	**0.2477**	**0.3043**	**4.9000e-004**		**9.2300e-003**	**9.2300e-003**		**9.2300e-003**	**9.2300e-003**	**0.0000**	**42.2408**	**42.2408**	**0.0126**	**0.0000**	**42.5558**

3.3 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6000e-003	0.0643	0.0166	6.0000e-005	2.0000e-004	5.0000e-005	2.6000e-004	6.0000e-005	5.0000e-005	1.1000e-004	0.0000	5.9682	5.9682	1.0800e-003	0.0000	5.9951
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.6000e-003**	**0.0643**	**0.0166**	**6.0000e-005**	**2.0000e-004**	**5.0000e-005**	**2.6000e-004**	**6.0000e-005**	**5.0000e-005**	**1.1000e-004**	**0.0000**	**5.9682**	**5.9682**	**1.0800e-003**	**0.0000**	**5.9951**

3.4 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.3000e-004	0.0000	5.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8000e-004	5.6300e-003	3.2200e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.4000e-004	2.4000e-004	0.0000	0.5773	0.5773	1.8000e-004	0.0000	0.5819
Total	**4.8000e-004**	**5.6300e-003**	**3.2200e-003**	**1.0000e-005**	**5.3000e-004**	**2.6000e-004**	**7.9000e-004**	**6.0000e-005**	**2.4000e-004**	**3.0000e-004**	**0.0000**	**0.5773**	**0.5773**	**1.8000e-004**	**0.0000**	**0.5819**

3.4 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.4000e-004	0.0000	2.4000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-004	2.9200e-003	4.1000e-003	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.5773	0.5773	1.8000e-004	0.0000	0.5819
Total	**1.5000e-004**	**2.9200e-003**	**4.1000e-003**	**1.0000e-005**	**2.4000e-004**	**6.0000e-005**	**3.0000e-004**	**3.0000e-005**	**6.0000e-005**	**9.0000e-005**	**0.0000**	**0.5773**	**0.5773**	**1.8000e-004**	**0.0000**	**0.5819**

3.4 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.9700e-003	0.0000	9.9700e-003	5.0700e-003	0.0000	5.0700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9800e-003	0.0288	0.0173	3.0000e-005		1.5800e-003	1.5800e-003		1.4900e-003	1.4900e-003	0.0000	2.6443	2.6443	5.7000e-004	0.0000	2.6586
Total	**2.9800e-003**	**0.0288**	**0.0173**	**3.0000e-005**	**9.9700e-003**	**1.5800e-003**	**0.0116**	**5.0700e-003**	**1.4900e-003**	**6.5600e-003**	**0.0000**	**2.6443**	**2.6443**	**5.7000e-004**	**0.0000**	**2.6586**

3.5 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7000e-004	0.0126	2.0200e-003	1.0000e-005	2.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	1.3102	1.3102	2.6000e-004	0.0000	1.3167
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.7000e-004**	**0.0126**	**2.0200e-003**	**1.0000e-005**	**2.0000e-005**	**1.0000e-005**	**4.0000e-005**	**1.0000e-005**	**1.0000e-005**	**2.0000e-005**	**0.0000**	**1.3102**	**1.3102**	**2.6000e-004**	**0.0000**	**1.3167**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.4900e-003	0.0000	4.4900e-003	2.2800e-003	0.0000	2.2800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7000e-004	0.0138	0.0180	3.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	2.6443	2.6443	5.7000e-004	0.0000	2.6586
Total	**6.7000e-004**	**0.0138**	**0.0180**	**3.0000e-005**	**4.4900e-003**	**6.4000e-004**	**5.1300e-003**	**2.2800e-003**	**6.4000e-004**	**2.9200e-003**	**0.0000**	**2.6443**	**2.6443**	**5.7000e-004**	**0.0000**	**2.6586**

3.5 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7000e-004	0.0126	2.0200e-003	1.0000e-005	2.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	1.3102	1.3102	2.6000e-004	0.0000	1.3167
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.7000e-004**	**0.0126**	**2.0200e-003**	**1.0000e-005**	**2.0000e-005**	**1.0000e-005**	**4.0000e-005**	**1.0000e-005**	**1.0000e-005**	**2.0000e-005**	**0.0000**	**1.3102**	**1.3102**	**2.6000e-004**	**0.0000**	**1.3167**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1970					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.1982**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1970					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0000e-004	6.7800e-003	9.1600e-003	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.1973**	**6.7800e-003**	**9.1600e-003**	**1.0000e-005**		**4.8000e-004**	**4.8000e-004**		**4.8000e-004**	**4.8000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.4200e-003	0.0427	0.0446	7.0000e-005		2.3700e-003	2.3700e-003		2.2200e-003	2.2200e-003	0.0000	6.0674	6.0674	1.6300e-003	0.0000	6.1082
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.4200e-003**	**0.0427**	**0.0446**	**7.0000e-005**		**2.3700e-003**	**2.3700e-003**		**2.2200e-003**	**2.2200e-003**	**0.0000**	**6.0674**	**6.0674**	**1.6300e-003**	**0.0000**	**6.1082**

3.7 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.5600e-003	0.0319	0.0488	7.0000e-005		1.5600e-003	1.5600e-003		1.5600e-003	1.5600e-003	0.0000	6.0674	6.0674	1.6300e-003	0.0000	6.1082
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.5600e-003**	**0.0319**	**0.0488**	**7.0000e-005**		**1.5600e-003**	**1.5600e-003**		**1.5600e-003**	**1.5600e-003**	**0.0000**	**6.0674**	**6.0674**	**1.6300e-003**	**0.0000**	**6.1082**

3.7 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0991	0.4034	1.0011	2.9300e-003	0.2356	3.0200e-003	0.2386	0.0631	2.8300e-003	0.0659	0.0000	270.1609	270.1609	0.0160	0.0000	270.5613
Unmitigated	0.0991	0.4034	1.0011	2.9300e-003	0.2356	3.0200e-003	0.2386	0.0631	2.8300e-003	0.0659	0.0000	270.1609	270.1609	0.0160	0.0000	270.5613

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Health Club	393.04	248.88	318.92	625,168	625,168
Total	393.04	248.88	318.92	625,168	625,168

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Health Club	9.50	7.30	7.30	16.90	64.10	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Health Club	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	171.2282	171.2282	6.8900e-003	1.4300e-003	171.8254
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	184.6731	184.6731	7.4300e-003	1.5400e-003	185.3172
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Health Club	565080	184.6731	7.4300e-003	1.5400e-003	185.3172
Total		**184.6731**	**7.4300e-003**	**1.5400e-003**	**185.3172**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Health Club	523940	171.2282	6.8900e-003	1.4300e-003	171.8254
Total		**171.2282**	**6.8900e-003**	**1.4300e-003**	**171.8254**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2853	1.0000e-005	6.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2200e-003	1.2200e-003	0.0000	0.0000	1.3000e-003
Unmitigated	0.2853	1.0000e-005	6.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2200e-003	1.2200e-003	0.0000	0.0000	1.3000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0197					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2656					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	6.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2200e-003	1.2200e-003	0.0000	0.0000	1.3000e-003
Total	**0.2853**	**1.0000e-005**	**6.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.2200e-003**	**1.2200e-003**	**0.0000**	**0.0000**	**1.3000e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0197					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2656					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	6.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2200e-003	1.2200e-003	0.0000	0.0000	1.3000e-003
Total	**0.2853**	**1.0000e-005**	**6.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.2200e-003**	**1.2200e-003**	**0.0000**	**0.0000**	**1.3000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	23.6617	0.1058	2.6600e-003	27.0993
Unmitigated	27.3397	0.1321	3.3100e-003	31.6289

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Health Club	4.02173 / 2.46493	27.3397	0.1321	3.3100e-003	31.6289
Total		**27.3397**	**0.1321**	**3.3100e-003**	**31.6289**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Health Club	3.21739 / 2.46493	23.6617	0.1058	2.6600e-003	27.0993
Total		**23.6617**	**0.1058**	**2.6600e-003**	**27.0993**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	19.6698	1.1625	0.0000	48.7312
Unmitigated	78.6793	4.6498	0.0000	194.9246

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Health Club	387.6	78.6793	4.6498	0.0000	194.9246
Total		**78.6793**	**4.6498**	**0.0000**	**194.9246**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Health Club	96.9	19.6698	1.1625	0.0000	48.7312
Total		**19.6698**	**1.1625**	**0.0000**	**48.7312**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

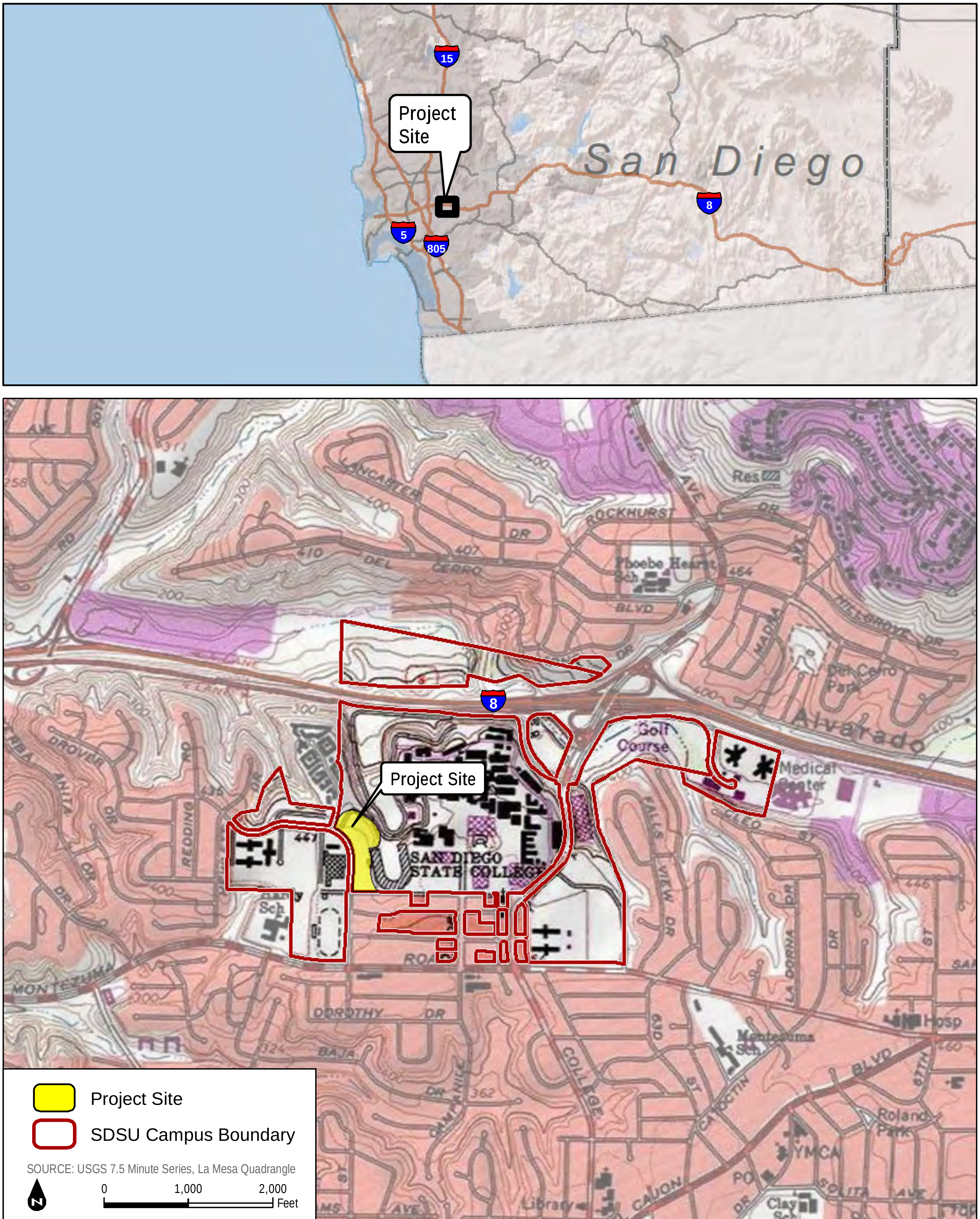
Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation



SDSU ARC Expansion Project

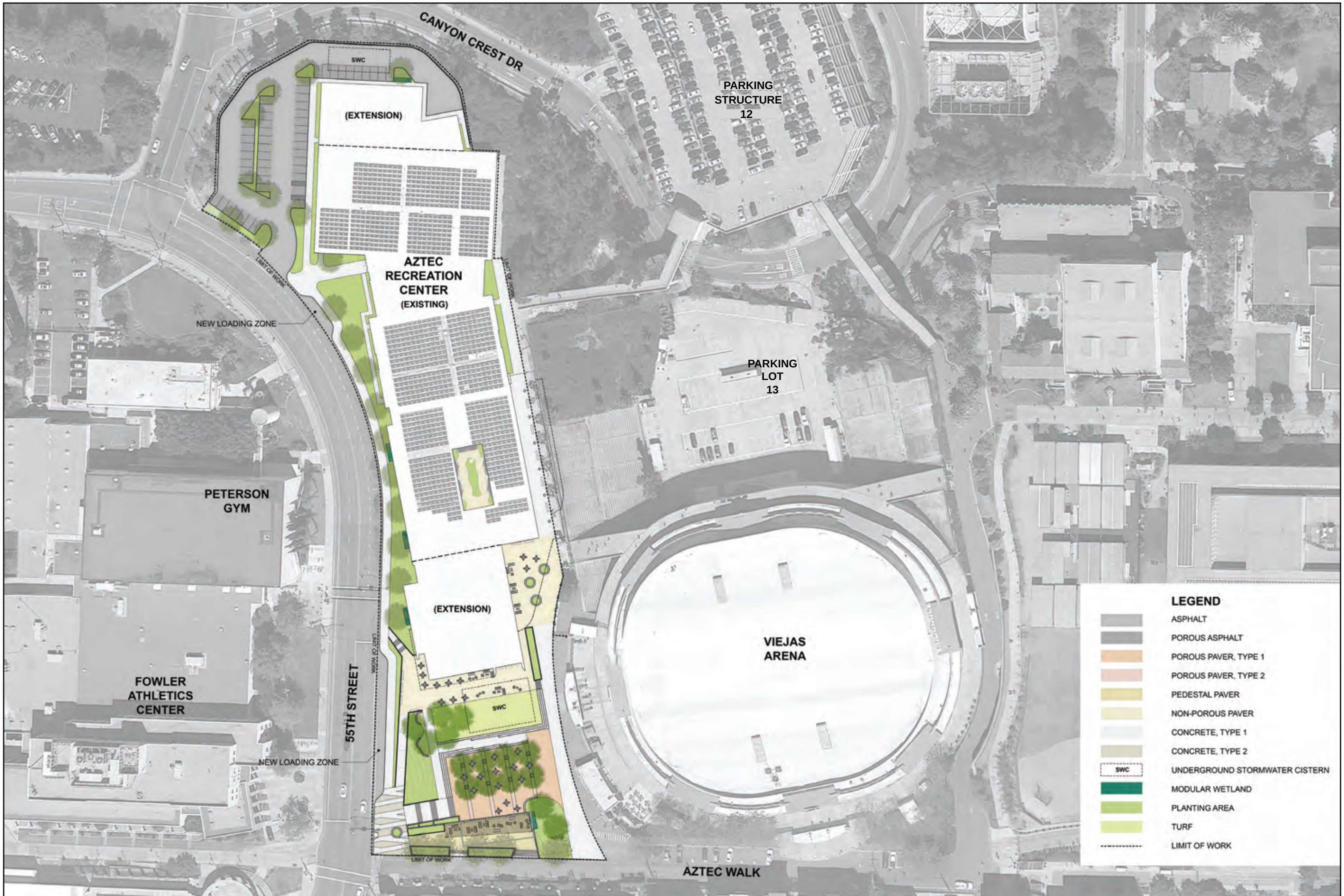
SAN DIEGO STATE UNIVERSITY

Figure 1
Project Location

SDSU ARC Expansion Project

SAN DIEGO STATE UNIVERSITY

Figure 2
Project Site

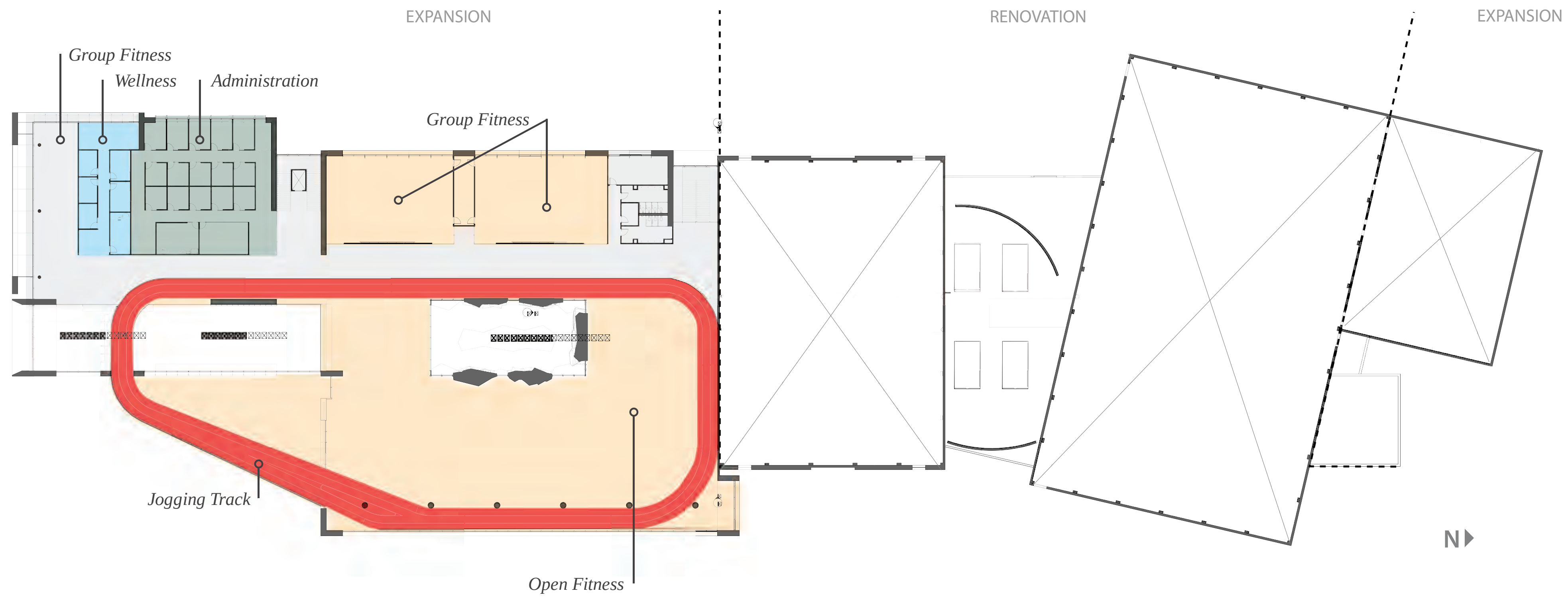


SDSU ARC Expansion Project

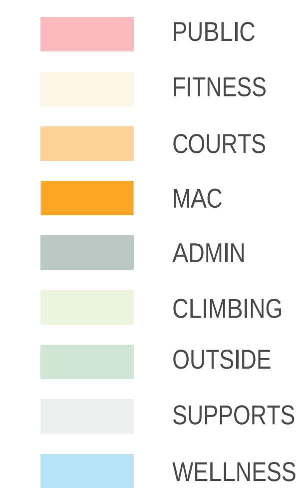
San Diego State University

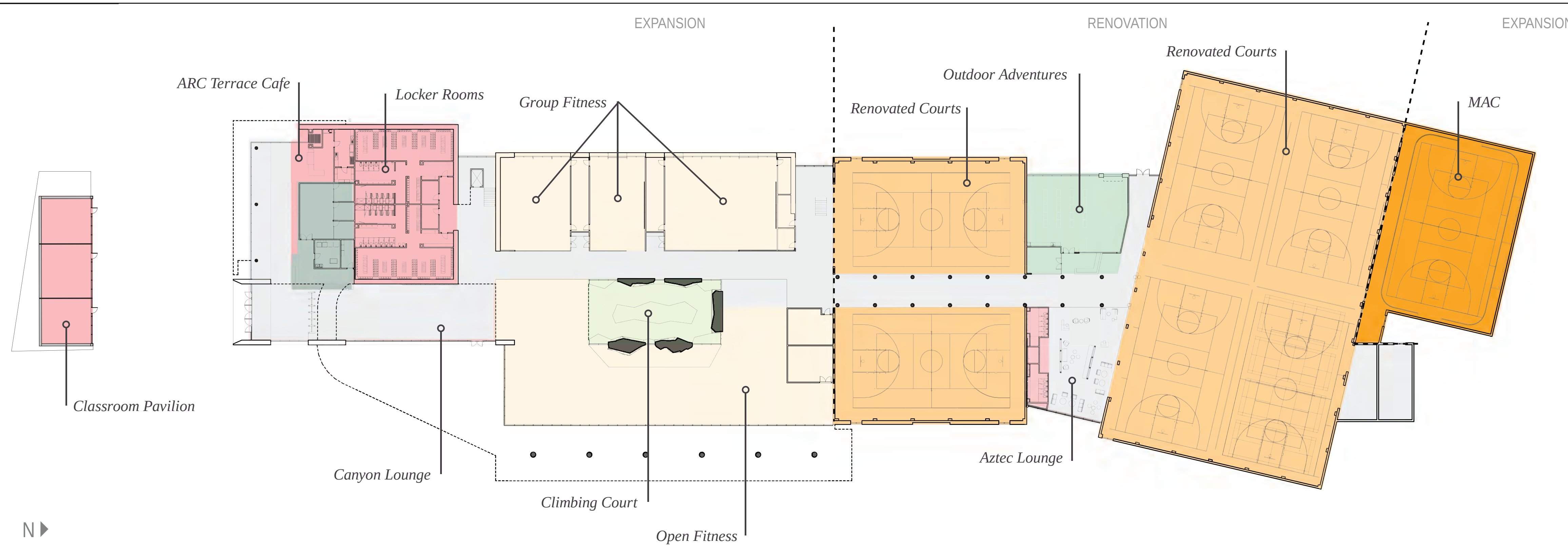
Figure 3

Site Plan



LEVEL 2 FLOOR PLAN





SOURCE: McCarthy / SmithGroupJJR 2018

LEVEL 1 FLOOR PLAN

SDSU ARC Expansion Project

SAN DIEGO STATE UNIVERSITY

Figure 5
Floor Plans

SDSU ARC Expansion Project

SAN DIEGO STATE UNIVERSITY

Figure 6

Architectural Rendering – Southern Elevation

Appendix E
Water Quality Technical Memorandum

605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 760.942.5147 F 760.632.0164

MEMORANDUM

To:	Michael Haberkorn, Andrew Contreiras (Gatzke Dillon & Ballance)
From:	Perry Russell (Dudek)
Subject:	SDSU ARC Expansion Project – Water Quality Technical Memorandum
Date:	November 20, 2018
cc:	Sarah Lozano, Iulia Roman (Dudek)
Attachment(s):	Figures 1–9

Dudek has conducted an evaluation of potential impacts related to water quality associated with the San Diego State University (SDSU) Aztec Recreation Center (ARC) Expansion (proposed project), located within the SDSU campus in the City of San Diego (City), California. This technical memorandum provides the results of the water quality assessment.

1 Methodology

The analysis is based on the proportional nature of the proposed project's design and the likely severity of environmental impacts that could occur. Because detailed civil engineering plans have yet to be developed, this technical memorandum focuses on identifying the type and effectiveness of water quality best management practices (BMPs) and low-impact design measures that would be implemented to meet water quality goals and objectives. As the final engineering and design details emerge, the project engineer would perform the calculations necessary to refine the location, design, and size of stormwater and water quality features.

2 Project Location and Setting

The SDSU campus is situated along Interstate 8, approximately 8 miles from downtown San Diego (see Figure 1, Project Location). The campus is part of the College Area Community of the City. The project site is located in the western portion of the main SDSU campus in the athletics district on the site of the existing ARC. The project site is bounded by 55th Street to the west, Aztec Circle Drive to the north, the remnants of the Aztec Bowl bleachers and a surface parking lot (Parking Lot 13) to the east, Viejas Arena to the southeast, and Aztec Walk to the south (Figure 2, Project Site). In addition, a construction staging area would be located immediately east of the adjoining Viejas Arena. The land on which the proposed project would be developed is owned by SDSU and is located within the existing campus boundary.

3 Project Description

The proposed project is an expansion of the existing ARC—a single-story building consisting of approximately 74,000 square feet that includes a four-court gym and cardio fitness and weightlifting areas. The proposed project would expand existing ARC by approximately 68,000 square feet and would include detention basins on site. The expanded ARC building would consist of two stories, a proposed courtyard, and associated landscaping (Figure 3, Site Plan). Figure 5 (Floor Plans) and Figure 6 (Architectural Rendering – Southern Elevation) depict the floor plans and the basic design of the proposed project. In addition to newly renovated recreational spaces, the proposed project would also include solar panels on the roof of the proposed ARC (see Figure 2).

Currently, the ARC has a monthly membership level of approximately 16,000 individuals. Of this total, approximately 5%–6% are members of the public not affiliated with SDSU; the remainder are SDSU students, faculty, or staff. Currently, SDSU students must pay to join the ARC; approximately 35% of the SDSU student body are members. Starting in fall 2021, the SDSU Student Body Center fee will increase; this fee increase will provide the financial resources to allow all students the ability to have access to the ARC. The expanded ARC will continue to be open to the public but will not be actively marketed to increase non-SDSU community membership.

Landscaping

The proposed project would incorporate biophilic design elements to balance green space and hardscape. An outdoor courtyard and plaza space is proposed on the southern portion of the site, extending from the ARC to Aztec Walk. Existing palm trees within the plaza would be removed and replaced with larger canopy trees, including deciduous and evergreen trees, which provide better shade than the existing palms. Additionally, a 5,000-square-foot terrace and garden rooms that account for 2,800 square feet are proposed within the plaza. New street trees would also be planted along 55th Street and Aztec Walk. Landscaping elements would include drought-tolerant plants and design that reduces heat islands and manages stormwater on site.

Stormwater Runoff

Existing stormwater runoff is approximately 25.85 cubic feet per second (cfs) and flows to Alvarado Creek through two existing stormwater systems that run north and northwest along the SDSU campus. The proposed ARC expansion includes on-site detention basins and replacement of some existing pipes. After construction of the project, the expanded site would generate 6.58 cfs of stormwater discharge. The change in footprint of pervious and impervious areas within the site would modify on-site stormwater systems, but stormwater would be discharged at the same outfall locations. Thus, the proposed project would result in a reduction of runoff by 19.27 cfs compared to existing conditions.

Sustainable Design Features

The proposed project would achieve Leadership in Energy and Environmental Design (LEED) Platinum certification by implementing sustainable and environmentally friendly design features, techniques, and materials. These features include the following:

- Rainwater from roofs would be captured and stored on site for reuse in irrigation systems and process uses.
- Very low-water-consumption plumbing fixtures and features, such as graywater capture from showers, would be installed for outdoor and indoor water use reduction.
- Water submeters would be provided for monitoring and management of building water uses.

Construction

The first phase of construction would involve demolition of approximately 25,000 square feet of the existing ARC. A total volume of 6,167 cubic yards of debris would be removed. The second phase of construction would consist of site preparation, such as clearing and grubbing. Stormwater pollution prevention plan (SWPPP)-directed controls would also be installed. The third phase of construction would include grading; the fourth phase of construction would consist of building construction; the fifth phase of construction activities would include paving; and the sixth and final phase of construction would include application of architectural coatings, such as stucco and paint. The proposed equipment staging area would be provided off site to the east of Viejas Arena, at the corner of Aztec Bowl and an unnamed access road (Figure 2). The proposed project would incorporate BMPs during construction to minimize stormwater runoff, in compliance with the State Water Resources Control Board (SWRCB) Construction General Permit.

Discretionary Approvals Required

The California State University Board of Trustees is the lead agency for the proposed project. San Diego Regional Water Quality Control Board approval may be required related to water quality (National Pollutant Discharge Elimination System permits, as necessary).

4 Existing Conditions

This section describes the existing conditions in the project area.

Existing Environmental Setting

The SDSU campus is located atop a mesa terrace intersected by canyon drainages on its eastern and western sides, each of which drains into the Alvarado Creek Canyon that makes up the northern border of the campus. Alvarado Creek is approximately 2,000 feet northeast of the project site and is a natural-bottom tributary to the San Diego River, which eventually discharges into the Pacific Ocean immediately south of Mission Bay. The vicinity is heavily developed with buildings, roads, and utility infrastructure, which has resulted in topography and soils that have been greatly altered from their natural state. There are no natural water bodies within the project footprint.

The surrounding region is a broad, urbanized coastal plain bounded by the Pacific Ocean to the west and by foothills and mountains to the east. Prior to development of the campus and surrounding area, the topography was characterized by deeply incised drainage canyons dissecting the relatively level mesa, which is commonly called "Montezuma Mesa" at the location of the main SDSU campus. Many of the smaller canyons/ravines and the heads of some of the larger canyons were filled in to create level, buildable sites.

Climate

The climate of San Diego County is characterized by warm, dry summers and mild, wet winters. The average rainfall is approximately 10 to 13 inches per year, most of which falls between November and March. The average mean temperature for the area is approximately 65°F in the coastal zone and 57°F in the surrounding foothills (San Diego RWQCB 2016).

Site Topography and Drainage

The project site elevation varies from approximately 380 feet above mean sea level (amsl) along the northeastern boundary to approximately 445 feet amsl in the southwestern corner of the site. The project site is relatively flat to gently sloping. In the southern portion of the site, the land slopes moderately to the east. In the northern and northeastern portions of the site, it slopes moderately to steeply to the northeast and east, toward Canyon Crest Drive. The western two-thirds of the site drains west on 2% to 9% slopes. Most of the eastern one-third of the project site is on 9% to 30% slopes. In addition, a small area in the northeastern portion of the site is on 30% to 50% slopes.

The site includes an existing recreation center with concrete walkways and landscaped areas, totaling approximately 3.8 acres of impervious surfaces and 0.9 acres of pervious surfaces. A private storm drain system collects stormwater runoff. All stormwater runoff in the proposed project's drainage area is collected and eventually discharged to a 42-inch corrugated metal pipe storm drain that flows north beneath Canyon Crest Road toward Alvarado Creek (SDSU 2011). The total 100-year peak discharge from the site is 25.85 cfs (Snipes-Dye Associates 2018; SDSU 2011).

Site Soil Types

The soil unit underlying the project site is mapped as Olivenhain–Urban land complex. The parent materials in this soil unit typically consist of gravelly alluvium derived from mixed sources that are well-drained, not typically ponded or flooded, and do not typically have zones of water saturation within a depth of 72 inches. However, the soil type has a very high runoff rating (i.e., Hydrologic Group D) because certain layers within the soil can have a very low percolation rate, depending on depth and location (USDA 2018). Descriptions from soil surveys are based on regional representative soil profiles and may not match exact site conditions.

Some fill soils were likely placed during previous grading to construct level building pads for the existing ARC and associated improvements. Fill also exists as backfill behind retaining walls and in existing underground utility trenches in the proposed project area. The fill soils in the proposed project area are likely composed of locally derived materials, which consists primarily of cobbly loam. Some fill areas may include boulder-sized rock fragments, concrete/asphalt chunks, and debris.

Watershed Hydrology

The U.S. Geological Survey Watershed Boundary Dataset delineates watersheds according to hydrologic units, which are identified by name and by hydrologic unit code (HUC). Hydrologic units consist of large regions and sub-regions draining to a common outlet. The proposed project is within the Murray Reservoir subwatershed (HUC 180703040704), a subregion of the 11,100-square-mile Southern California Coastal Subregion (HUC 1807), which captures the areas that eventually drain to the Pacific Ocean (Table 1) (see also Figure 7, San Diego Watershed Map).

SWRCB and the local co-permittees classify watersheds using a similar system but with somewhat different watershed names and boundaries.[1] These geographic boundaries are watershed based but are typically referred to as “hydrologic basins,” around which many surface water quality problems and goals/objectives are generally defined. The proposed project is within the Mission San Diego hydrologic subarea (Basin No. 9.07.1.1), which is one of the many subareas within the San Diego Basin (Table 1).

Table 1. Watershed Designations by Agency/Source

Agency/Source	HUC/Basin No.	Watershed Name	Size (sq km)
USGS Watershed Boundary Dataset	180703	Laguna–San Diego Coastal Accounting Unit	14,142
	18070304	San Diego Cataloguing Unit	4,022
	1807030407	Lower San Diego River Watershed	419
	180703040704	Murray Reservoir Subwatershed	43
San Diego RWQCB and “Project Clean Water” Co-Permittees	9	San Diego Region	10,102
	9.07	San Diego Hydrologic Unit	1,140
	9.07.1	Lower San Diego Hydrologic Area	449
	9.07.1.1	Mission San Diego Hydrologic Subarea	150

Sources: USGS 2018; San Diego RWQCB 2016.
Notes: HUC = hydrologic unit code; sq km = square kilometers; USGS = U.S. Geological Survey; RWQCB = Regional Water Quality Control Board.

Groundwater

A groundwater basin is a hydrogeologic unit containing one large aquifer and several connected and interrelated aquifers. Major watersheds in the San Diego Region contain groundwater basins. The nearest groundwater basin is the Mission Valley Groundwater Basin, located approximately 1 mile northwest of the site (Figure 8, Mission Valley Groundwater Basin). However, the project site is located outside the groundwater basin footprint, as defined by the San Diego County Water Authority. Drained by the San Diego River, this basin underlies an east–west-trending valley and is bounded by lower-permeable San Diego, Poway, and Lindavista Formations. The aquifers within the Mission Valley Groundwater Aquifer, located within the Mission Valley Groundwater Basin, are summarized in Table 2.

Table 2. Mission Valley Groundwater Aquifer

Aquifer	Description	Thickness (Feet)
Shallow alluvium	Quaternary-age medium- to coarse-grained sand and gravel	Approximately 80–100
San Diego Formation	Thick accumulation of older, semi-consolidated alluvial sediments	Generally less than 100

Source: DWR 2004.

1 The stormwater co-permittees are the owners of municipal separate storm sewer systems (MS4s) through which urban runoff discharges into waters of the United States within the San Diego Region. Together, the co-permittees (which include 18 cities, the County of San Diego, the Port of San Diego, and the Regional Airport Authority) implement the National Pollutant Discharge Elimination System Permit.

Flood Hazards

The proposed project is not located within a 100- or 500-year floodplain (FEMA 2012) (see Figure 9, Hydrologic Features Map). Furthermore, the proposed project, due to its elevation of over 385 feet amsl and its location 10 miles inland, is not subject to dam inundation or tsunami hazards.

Water Quality

Runoff conveyed and discharged by municipal stormwater systems has been identified by local, regional, and national research programs as one of the principal causes of water quality problems in urban areas, such as the City. This runoff potentially contains a host of pollutants including trash, debris, bacteria, viruses, oil, grease, sediments, nutrients, metals, and toxic chemicals. These contaminants can adversely affect the beneficial uses of receiving creeks, coastal waters, associated wildlife habitat, and public health. Urban runoff pollution is a problem during rainy seasons and throughout the year due to urban water uses that discharge non-stormwater runoff through dry-weather flows to the stormwater conveyance system (City of San Diego 2018).

Land development and construction activities introduce the following water quality concerns:

- Contribution of pollutants to receiving waters based on the creation of new impervious surfaces and the permanent "use" of the project site
- Contribution of pollutants to receiving waters based on the removal or change of vegetation during construction
- Contribution of pollutant-based sediment transport caused by increased impervious cover and the resultant increased erosive force
- Significant alteration of drainage patterns

When residential, industrial, office, or recreational areas are developed, new impervious areas are created (e.g., roads, parking lots, structures). Since the natural landscape's ability to infiltrate and cleanse urban runoff is "capped" by the impervious surfaces, rainfall that would have normally percolated into the soil is instead converted to runoff that flows directly to downstream creeks, bays, and beaches. This phenomenon is especially pronounced during high-intensity rainfall events. Historic increases in impervious cover have increased the frequency and intensity of stormwater flows that occur within the region's watercourses (City of San Diego 2018).

The Clean Water Act, Section 303(d), requires states to develop a list of waters that do not meet water quality standards. These waters are called "water quality limited segments." This list classifies seven segments within the San Diego Hydrologic Unit as impaired water bodies. Two of these water bodies are located downstream of the proposed project, including Alvarado Creek and the San Diego River (Lower). The pollutants/stressors and potential sources for these impaired water bodies are identified in Table 3 (SWRCB 2018).

Table 3. 2014 and 2016 Section 303(d) List of Water Quality Limited Segments

Location	Pollutant/ Stressor	Potential Source	Proposed TMDL Completion	Estimated Size Affected (Miles)
Alvarado Creek	Nitrogen	Source unknown	2023	5.1
	Selenium	Source unknown	2021	5.1
San Diego River (Lower)	Benthic community effects	Hydromodification, illicit connections/illegal hookups/dry-weather flows, source unknown, unknown point source, unknown nonpoint source, urban runoff/storm sewers	2025	16
	Cadmium	Source unknown	2029	16
	Indicator bacteria	Source unknown	2011	16
	Low dissolved oxygen	Source unknown	2019	16
	Manganese	Source unknown	2021	16
	Nitrogen	Nonpoint source, point source, urban runoff/storm sewers	2021	16
	Phosphorus	Source unknown	2019	16
	Total dissolved solids	Source unknown	2019	16
	Toxicity	Source unknown	2021	16

Source: SWRCB 2018.
Note: TMDL = total maximum daily load.

5 Impact Analysis and Conclusions

5.1 Thresholds of Significance

The California Environmental Quality Act (CEQA) Guidelines, Section 15332, Exemptions for In-Fill Development Projects, would apply to the proposed project. With respect to hydrology and water quality, the following condition of CEQA Guidelines, Section 15332, is relevant:

(d) Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.

To determine whether the proposed project would result in significant effects relating to water quality, the CEQA Guidelines Appendix G thresholds (14 CCR 15000 et seq.), described below, were used. According to Appendix G, a significant impact related to water quality would occur if the proposed project would:

a. Violate any water quality standards or waste discharge requirements.

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
f. Otherwise substantially degrade water quality.

5.2 Impact Analysis

a. Would the project violate any water quality standards or waste discharge requirements?

Construction would consist of the following six phases: (1) demolition of approximately 25,000 square feet of the existing ARC; (2) site preparation, such as clearing and grubbing; (3) grading; (4) building construction; (5) paving; and (6) application of architectural coatings, such as stucco and paint. The proposed equipment staging area would be provided off site east of Viejas Arena at the corner of Aztec Bowl and an unnamed access road (Figure 2).

Stormwater Runoff

Partial demolition of existing structures and construction activities, such as grading, excavation, and trenching, would result in disturbance of soils on the project site. Construction site runoff can contain soil particles and sediments from these activities. Dust from construction sites can also enter runoff or water bodies. Spills or leaks from heavy equipment and machinery, staging areas, or building sites can also enter runoff. Typical pollutants could include petroleum products and heavy metals from equipment, as well as products such as paints, solvents, and cleaning agents, which could contain hazardous constituents. Sediment from erosion of graded or excavated surface materials, leaks or spills from equipment, or inadvertent releases of construction materials could result in water quality degradation if runoff containing the sediment entered receiving waters in sufficient quantities to exceed water quality objectives. Runoff from construction-related activities would generally be limited to the initial demolition and site-preparation phases of construction. Contributions of sediment from construction and construction-related pollutants would be minor and not measurable in the context of the watershed as a whole. As such, impacts related to stormwater runoff would not be significant.

The prevailing standard is nevertheless to reduce pollutant contributions to the maximum extent practicable regardless of how minor the sediment contribution might be. Compliance with the Construction General Permit will require SDSU or its contractor to file a Notice of Intent with SWRCB and prepare a SWPPP consistent with the Construction General Permit (SWRCB Order No. 2009-0009-DWQ). The SWPPP would list BMPs that would be used to protect stormwater quality throughout the construction phase, and would identify the placement of each BMP in accordance with the best available guidance (e.g., the San Diego Low Impact Development Design Manual (City of San Diego 2011)). Additionally, the SWPPP would contain a visual monitoring program and a chemical monitoring program for “non-visible” pollutants to monitor the effectiveness of the selected BMPs. The SWPPP would incorporate effective BMPs typically included in a SWPPP, including silt fences installed along limits of work and the project construction site, stockpile containment (e.g., Visqueen, fiber rolls, gravel bags), exposed soil stabilization structures (e.g., fiber matrix on slopes and construction access stabilization mechanisms), and street sweeping. A copy of the applicable SWPPP would be kept at the construction site. As such, potential project impacts relating to violation of water quality standards or waste discharge requirements would not be significant.

Non-Stormwater Discharges

Non-stormwater discharges during construction would include periodic application of water for dust control purposes. Because dust control is necessary during windy and dry periods to prevent wind erosion and dust plumes, water would be applied in sufficient quantities to wet the soil but not so excessively as to produce runoff from the construction site. Water applied for dust control would either quickly evaporate or locally infiltrate into shallow surface soils. These stipulations are routine in SWPPPs and other construction contract documents, which normally state that water would only be applied in a manner that does not generate runoff. Therefore, water applied for dust control would not result in appreciable effects on groundwater or surface water features and thus would not cause or contribute to exceedances of water quality objectives contained in the applicable water quality control plan (Basin Plan).

In summary, project implementation would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality. Impacts would not be significant.

c. *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?*

The proposed expansion of the ARC would involve additional improvements that would increase the impervious surface area; these include new concrete walkways, landscaping, permeable pavers, and an asphalt-concrete parking lot. Although the footprint of pervious and impervious areas would change in comparison to existing conditions, drainage from the site would occur at the same outfall locations as those that currently exist. Additionally, the expansion project includes a new storm drain system to replace some existing pipes. The new storm drain system would convey both on-site and off-site runoff (Snipes-Dye Associates 2018). As a result, impacts relating to alteration of the existing drainage pattern of the site would not be significant.

e. *Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*

Project operations involve no non-stormwater discharges to the storm drain system, so the project’s contributions to stormwater flow would occur only during and immediately after rainfall events. Stormwater runoff from concrete walkways, parking lots, and landscaped areas can contain incidental nonpoint-source pollutants such as oil, grease, heavy metals, pesticides, herbicides, fertilizers, and sediment. Concentrations of pollutants carried in urban runoff are extremely variable, depending on factors such as the volume of runoff reaching the storm drains, the time since the last rainfall, the relative mix of land uses and densities, and the degree to which street cleaning occurs.

Under existing conditions, stormwater that is not infiltrated flows toward street gutters, swales, and the inlets of underground storm drains. The storm drains direct runoff to Alvarado Creek and eventually into the San Diego River and Pacific Ocean, along with the runoff from the 7,100-acre urban watershed area (see Figure 7). If rainfall is sufficiently intense or long lasting, and if storm drain inlets have not been cleared of leaves or other debris, water may temporarily pond in low-lying areas.

As a non-traditional permittee, SDSU is subject to Phase II Municipal Separate Storm Sewer System (Small MS4) regulations, which require implementation of construction site BMPs and performance criteria and design guidelines for development within the Small MS4’s service area. It also requires operators to map their outfalls, properly maintain the storm drain system, educate the public on pollution prevention, and monitor and report on the quality of MS4 discharges to receiving waters so the effectiveness of the program can be evaluated. Collectively, the program elements are designed to ensure that discharges from the storm drain system do not contain pollutant loads at levels that violate water quality standards and Basin Plan objectives and policies (such as a total maximum daily load (TMDL) for Clean Water Act, Section 303(d); or an impaired water body). Implementation of the program elements are the responsibility of the Small MS4 operator, which, for the proposed project, is SDSU.

The proposed new ARC would meet LEED Silver certification or equivalent. On-site stormwater collection and conveyance facilities would include low-impact design systems recommended in the San Diego Low Impact Development Design Manual (City of San Diego 2011). Additionally, the project includes compact biofiltration BMPs (i.e., modular wetlands) for stormwater control. The proposed project is designed for runoff reduction, including the following BMP features: tree wells, permeable pavers, and permeable AC pavement. The proposed project would also include detention vaults/cisterns located within or along traffic areas.

The detention facilities at the proposed project site would be Brentwood StormTank Modular Units Systems. A detention basin (BMP 1) would be located under the proposed AC parking lot and would have a storage capacity of approximately 5,800 cubic feet. This basin would detain the required runoff from the parking lot, the northern portion of the building extension, landscape areas, and concrete walkways. Another detention basin (BMP 2) would be located under the proposed landscape area and would have a storage capacity of approximately 10,300 cubic feet. This basin would detain runoff from the southern portion of the building extension, concrete walkways, pervious pavers, and landscape areas (Snipes-Dye Associates 2018).

With implementation of the proposed project, peak discharge in the 100-year storm event would be reduced from the existing runoff of approximately 25.85 cfs to approximately 6.58 cfs (Snipes-Dye Associates 2018). As a result, project operations would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. There would be no impact to downstream and adjacent properties as a result of the proposed project. In addition, a reduction in off-site flows would reduce potential downstream erosion of drainages, creeks, and the San Diego River, resulting in beneficial water quality impacts related to erosion. Therefore, no significant impact would occur.

f. Would the project otherwise substantially degrade water quality?

The ways in which the proposed project could degrade water quality have been analyzed under the Thresholds a, c, and e. As described in these discussions, the proposed project would not violate any water quality standards or waste discharge requirements; would not result in erosion or siltation through alteration of the course of a stream or river; and would not contribute runoff that would exceed the capacity of existing or planned stormwater drainage systems, resulting in substantial additional sources of polluted runoff. Therefore, the proposed project would not otherwise substantially degrade water quality, and no significant impact to water quality would occur.

5.3 Cumulative Analysis and Conclusions

In addition, as discussed in Section 5.2, the proposed project would not have an individually significant impact with respect to cumulative increases in pollutant loads within the watershed (see list of impaired water bodies in Table 3).

In summary, water quality impacts associated with project implementation would be less than significant.

Please contact Dudek with any questions or comments.

Sincerely,

Perry W. Russell
Senior Geologist

5 References

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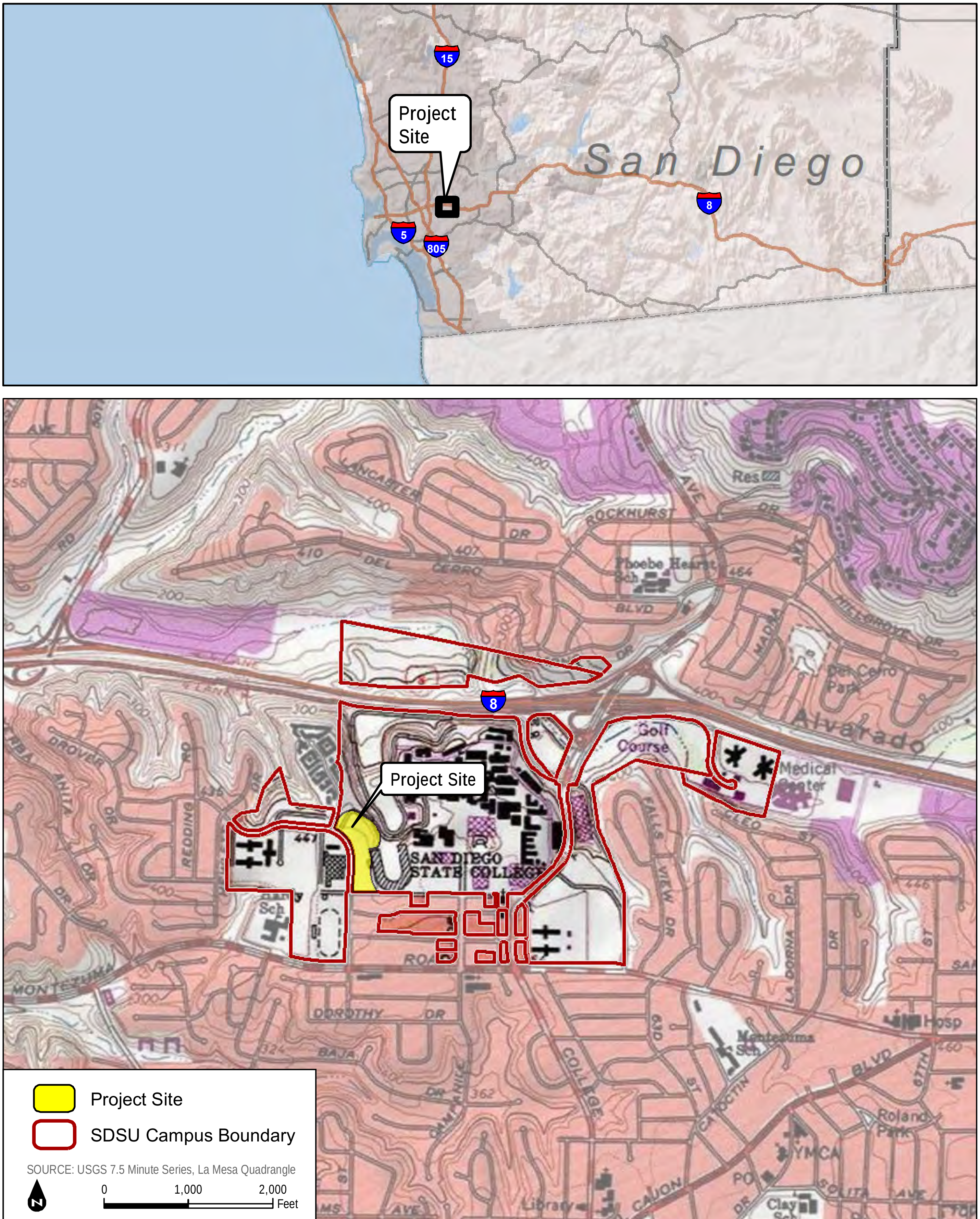


SDSU ARC Expansion Project

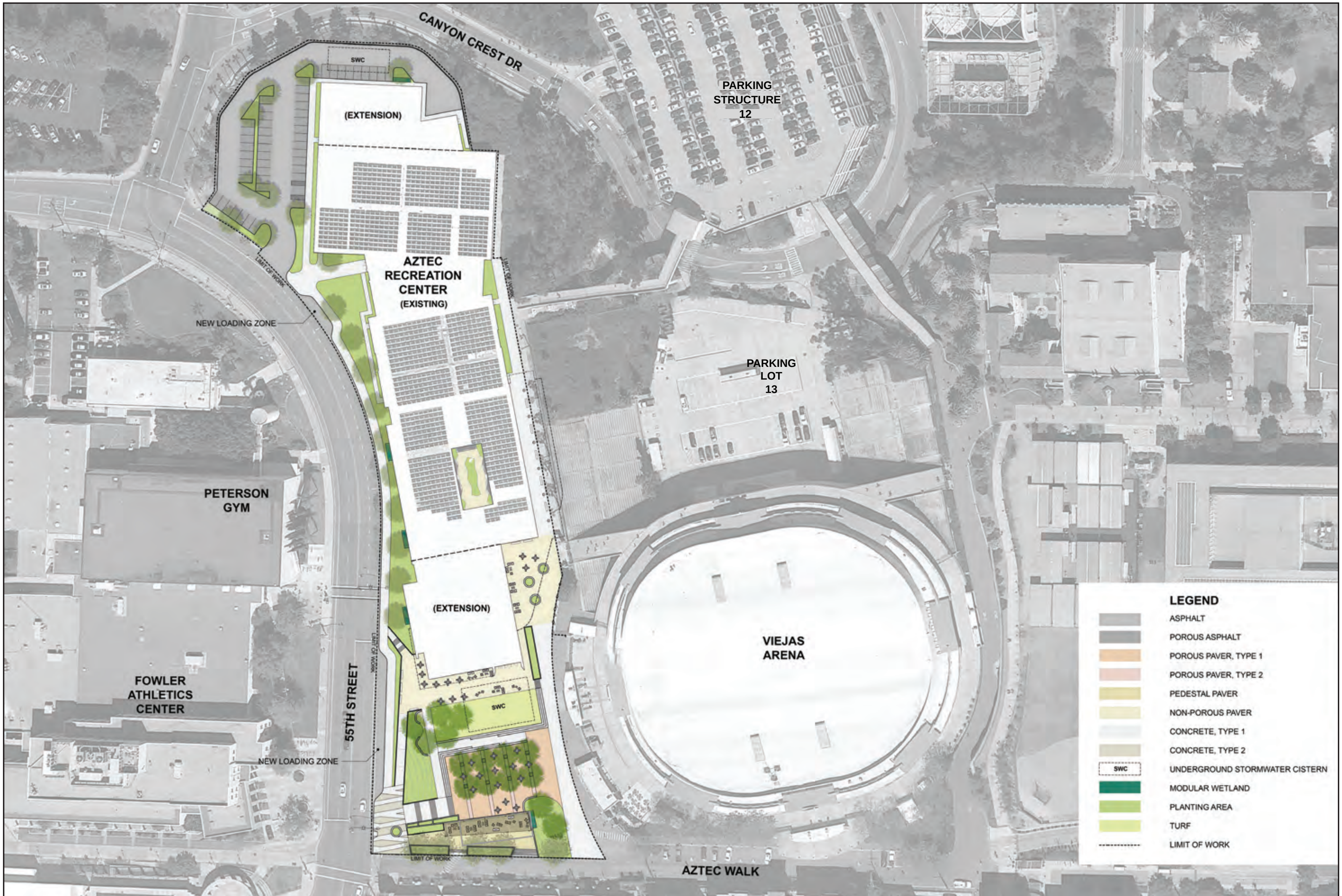
SAN DIEGO STATE UNIVERSITY

Figure 1
Project Location

SDSU ARC Expansion Project

San Diego State University

Figure 2
Project Site



SDSU ARC Expansion Project

San Diego State University

Figure 3

Site Plan

SOURCE: McCarthy / SmithGroupJJR 2018

SDSU ARC Expansion Project

San Diego State University

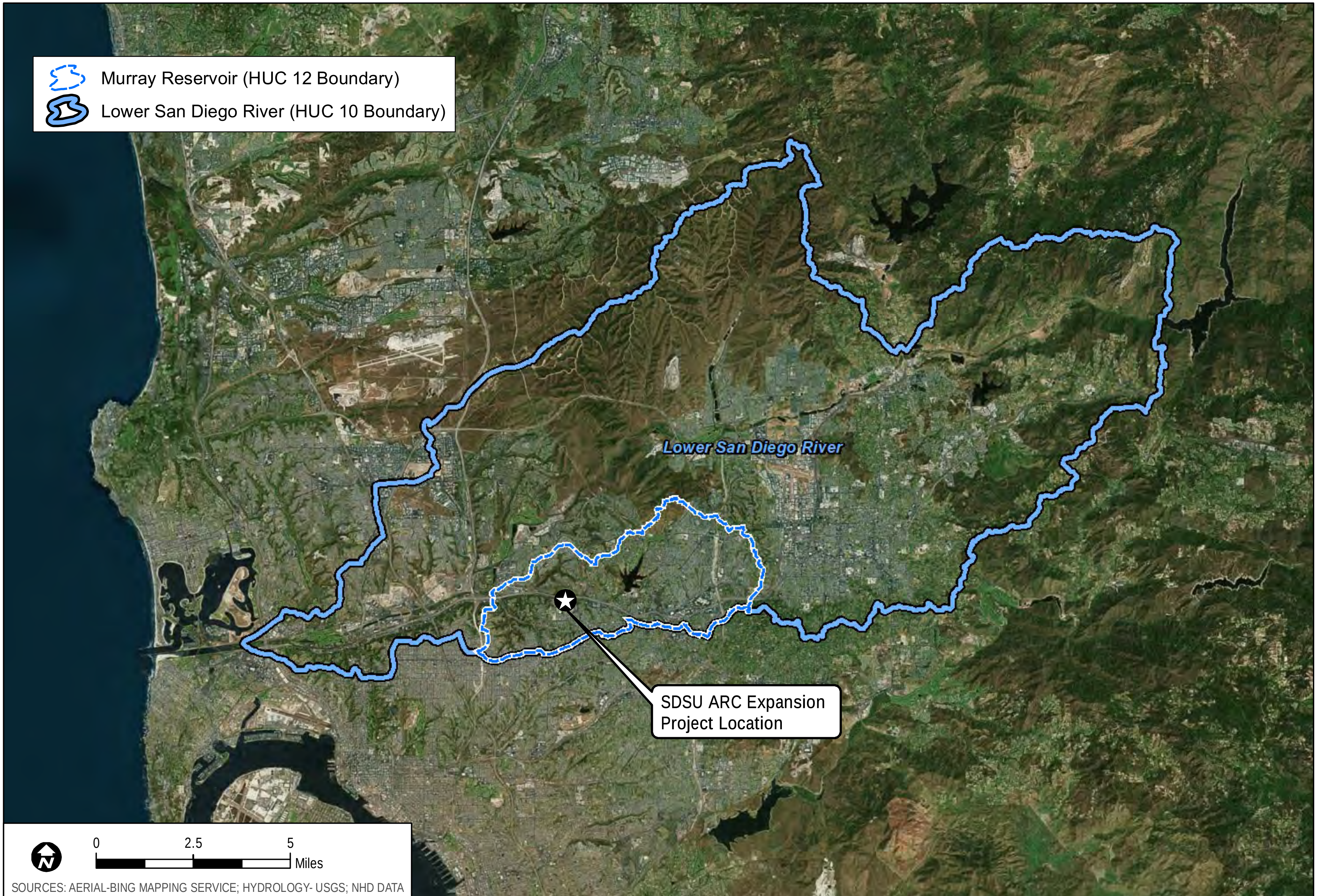
Figure 5
Floor Plans

SDSU ARC Expansion Project

San Diego State University

Figure 6

Architectural Rendering – Southern Elevation

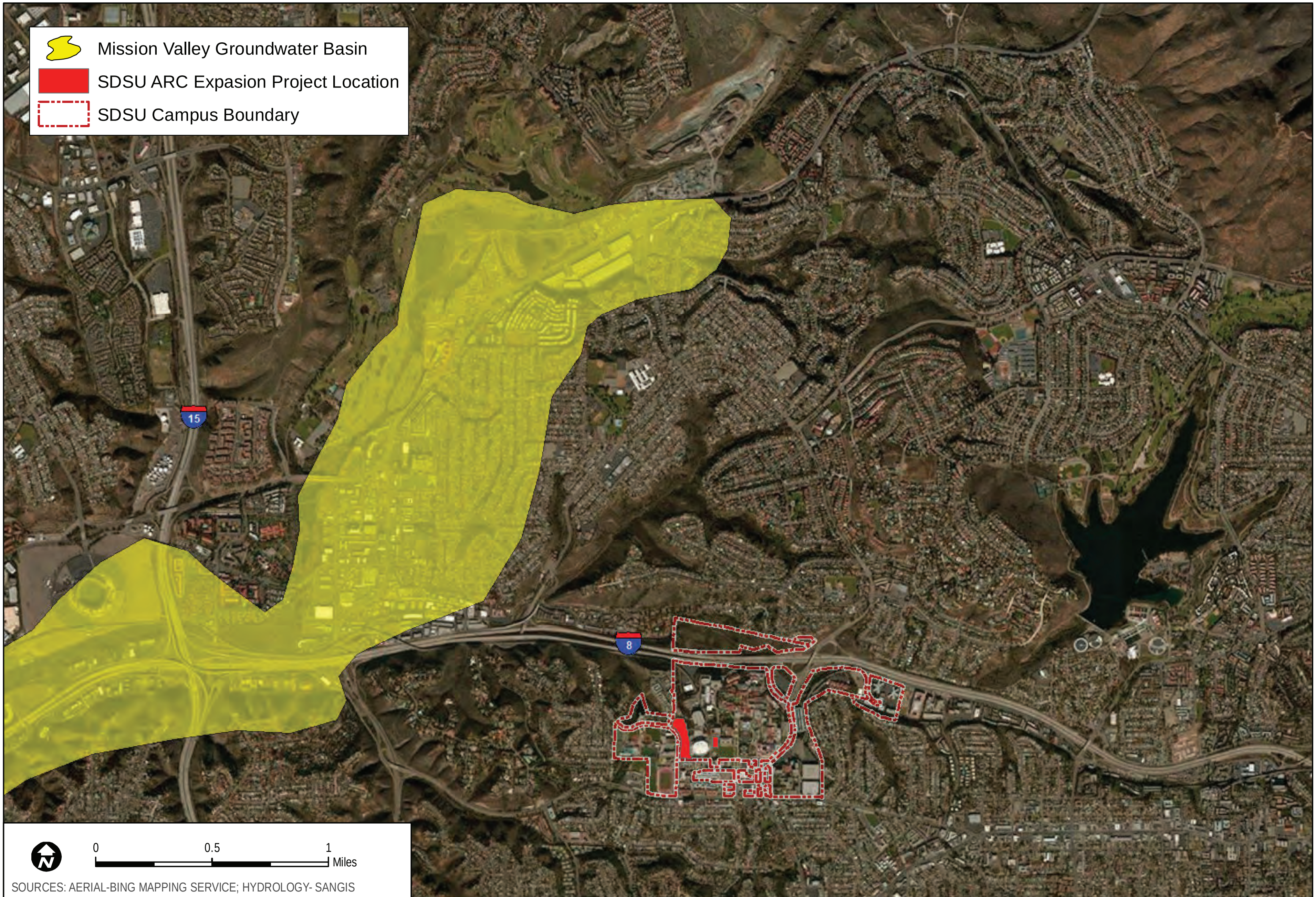


SDSU ARC Expansion Project

SAN DIEGO STATE UNIVERSITY

Figure 7

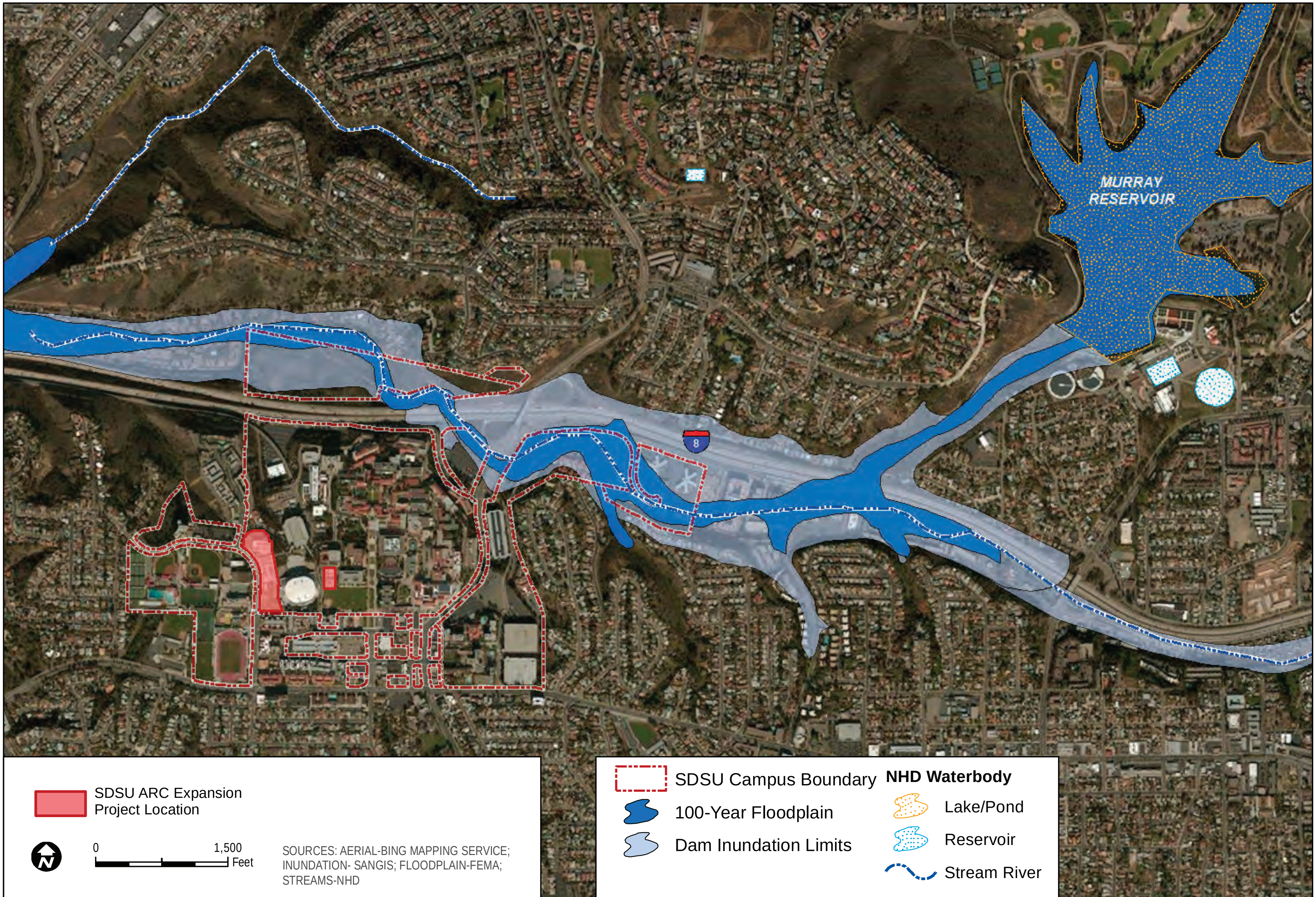
San Diego Watershed Map



SDSU ARC Expansion Project

San Diego State University

Figure 8
Mission Valley Groundwater Basin



SDSU ARC Expansion Project

San Diego State University

Figure 9

Hydrologic Features Map

Appendix F
Public Utilities and Services Technical Memorandum

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MEMORANDUM

To:	Michael Haberkorn, Andrew Contreiras (Gatzke Dillon & Ballance)
From:	Iulia Roman (Dudek)
Subject:	SDSU ARC Expansion Project – Public Utilities and Services Technical Memorandum
Date:	November 20, 2018
cc:	Sarah Lozano (Dudek)
Attachment(s):	Figures 1–8

Dudek has conducted an evaluation of potential impacts related to public utilities and services associated with the San Diego State University (SDSU) Aztec Recreation Center (ARC) Expansion (proposed project), located in the City of San Diego (City), California. This technical memorandum provides the results of the public utilities and services assessment.

1 Methodology

This memorandum is based on a review of studies and documents from local service providers and information provided by SDSU. Additional resources, such as the City's General Plan, were also used to assess potential impacts. Existing potable and recycled water, sewer, and stormwater infrastructure and associated capacities were identified in a review of the SDSU Aztec Recreation Center Expansion Utility Study (P2S Engineers 2018a). Lastly, an evaluation of existing and anticipated drainage was identified in a review of the Schematic Hydrology/Drainage Study for SDSU Aztec Recreation Center Expansion (Snipes-Dye Associates 2018).

2 Project Location and Setting

The SDSU campus is situated along Interstate 8, approximately 8 miles from downtown San Diego (see Figure 1, Project Location). The campus is part of the College Area Community of the City. The project site is located in the western portion of the main SDSU campus in the athletics district, on the site of the existing ARC. The project site is bounded by 55th Street to the west, Aztec Circle Drive to the north, the remnants of the Aztec Bowl bleachers and a surface parking lot (Parking Lot 13) to the east, Viejas Arena to the southeast, and Aztec Walk to the south (Figure 2, Project Site). In addition, a construction staging area would be located immediately east of the adjoining Viejas Arena. The land on which the proposed project would be developed is owned by SDSU and is located within the existing campus boundary.

3 Project Description

The proposed project is an expansion of the existing ARC,—a single-story building consisting of approximately 74,000 square feet that includes one four-court gym and other smaller, single-court gyms, which have been converted into additional cardio fitness and weightlifting areas. The proposed project would expand the existing ARC by approximately 68,000 square feet and would include stormwater retention basins on site. The expanded ARC building would consist of two stories, a proposed courtyard, and associated landscaping (Figure 3, Site Plan). Figure 5 (Floor Plans) and Figure 6 (Architectural Rendering – Southern Elevation) depict the floor plans and the basic design of the proposed project. In addition to newly renovated recreational spaces, the proposed project would also include solar panels on the roof of the proposed ARC (see Figure 2).

Currently, the ARC has a monthly membership level of approximately 16,000 individuals. Of this total, approximately 5%–6% are members of the public not affiliated with SDSU; the remainder are SDSU students, faculty, or staff. Currently, SDSU students must pay to join the ARC; approximately 35% of the SDSU student body are members. Starting in fall 2021, the SDSU Student Body Center fee will increase; this fee increase will provide the financial resources to allow all students the ability to have access to the ARC. The expanded ARC will continue to be open to the public but will not be actively marketed to increase non-SDSU community membership.

Utilities

The proposed project would require approximately 34,922 additional gallons per day of potable water and would generate approximately 20,805 gallons of wastewater per day.

Existing stormwater runoff is approximately 25.85 cubic feet per second (cfs) and flows to Alvarado Creek through two existing stormwater systems that run north and northwest along SDSU's campus. With implementation of proposed detention basins on site, the expanded site would generate only 6.58 cfs of stormwater discharge once constructed, thus resulting in a reduction of 19.22 cfs of runoff compared to existing conditions. On-site stormwater systems would be modified through the change in footprint of pervious and impervious areas within the site. However, stormwater would be discharged at the same outfall locations. A new storm drain system is proposed to replace some existing pipes.

Sustainable Design Features

The proposed project would achieve Leadership in Energy and Environmental Design (LEED) Platinum certification. It proposes to implement sustainable and environmentally friendly design features, techniques, and materials, including the following:

- Rainwater from roofs would be captured and stored on site for reuse in irrigation systems and process uses.
- Streetlights, plaza lights, and walkway lights would meet campus standards and International Dark-Sky Association standards (a LEED requirement), and would be motion-activated and multi-level where appropriate. Interior building light controls would meet Title 24 and LEED standards for daylight dimming and occupancy sensors.
- Very low-water consumption plumbing fixtures and features such as graywater capture from showers would be installed for outdoor and indoor water use reduction.
- Water submeters would be provided for monitoring and management of building water uses.

- The proposed project would implement salvage and reuse of the existing renewable energy photovoltaic system, to be included on the roof of the proposed ARC. The amount of solar energy will meet the requirements for LEED Platinum standards.
- The proposed heating, ventilation, and air conditioning system would rely on electric space heating and domestic water heating for the facility to reduce use of fossil fuels.
- Durable, low-maintenance, locally sourced materials that require less frequent replacement would be used during construction to improve the life cycle of materials and generate less waste, a prerequisite for LEED Platinum standards.
- Recyclable waste products would be recycled by the construction teams to reduce waste, per requirements of the City of San Diego and SDSU. SDSU would also pursue on-site reuse of materials, where possible.
- Day-lit and naturally ventilated spaces would be used to enhance indoor environmental quality and reduce electricity use, per LEED Platinum requirements.

Construction

The first phase of construction would involve demolition of approximately 25,000 square feet of the existing ARC. A total volume of 6,167 cubic yards of debris would be removed. The second phase of construction would consist of site preparation, such as clearing and grubbing. Stormwater pollution prevention plan (SWPPP)-directed controls would also be installed. The third phase of construction would include grading, the fourth phase of construction would consist of building construction, the fifth phase of construction activities would include paving, and the sixth and final phase of construction would include application of architectural coatings, such as stucco and paint. Construction equipment would be staged off site east of Viejas Arena at the corner of Aztec Bowl and an unnamed access road (Figure 2). The existing ARC would remain open during construction activities, while existing ARC parking would remain accessible during construction.

Discretionary Approvals Required

The California State University (CSU) Board of Trustees is the lead agency for the proposed project. Other known public agencies whose approval may be required as a prerequisite for future construction and implementation of project components as they relate to public services and utilities include the state fire marshal (for approval of facility fire safety review) and the City (for permits to trench within 55th Street and tie in to existing City-owned utilities (water and sewer), if necessary).

4 Existing Conditions

This section describes the existing conditions in the project area and identifies the resources the proposed project could affect.

Fire Protection

The City's Fire-Rescue Department is the primary responder to fires on the SDSU campus. When an on-campus fire is reported to the San Diego State University Police Department (UPD), a campus police officer is dispatched to the scene of the fire to verify the fire and call the Fire-Rescue Department (Harrison, pers. comm. 2018). The SDSU campus police officer dispatched to the scene establishes an Incident Command Post and manages the incident until relieved by Fire-Rescue Department personnel. If the fire is an imminent threat to life or structure, the SDSU Emergency Operations Center may be activated to a Level II emergency mode. When a fire incident occurs, SDSU's president would determine whether the Emergency Operations Center will be activated and, if activated, which staff positions are needed to respond to the emergency (SDSU 2018a).

Depending on the incident and available resources, the SDSU campus is served by three Fire-Rescue Department fire stations (Stations 10, 17, and 31) (City of San Diego 2018a) located within the vicinity of the project site. These fire stations are located within the vicinity of SDSU (see Figure 7, Existing Public Services). Table 1 summarizes the stations' location, equipment, and proximity to the project site.

Table 1
Fire-Rescue Department Stations near the Project Area

Station	Location (Community)	Equipment	Proximity to Project Site
Station 10	4605 62nd Street (Del Cerro)	1 engine company 1 truck 1 brush engine	1.1 miles southeast
Station 17	4206 Chamoune Avenue (City Heights)	1 engine company	1.9 miles southwest
Station 31	6002 Camino Rico (Grantville/Del Cerro)	1 engine company 1 medic company	1.31 miles northeast

Source: City of San Diego 2018a.

Located nearest to the project site, Station 10 is equipped with a fire engine, fire truck, and a brush engine. Station 17 is equipped with a fire engine. Station 31 is equipped with a fire engine, a paramedic unit, and medic rescue rig and would respond to calls requesting medical service (City of San Diego 2018a).

UPD receives on-campus landline calls requesting 9-1-1 services. Calls requesting fire services (including medical aid) often require assistance from the Fire-Rescue Department. Data in Table 2 summarize calls received by UPD requesting Fire-Rescue Department services. The call data include calls related to an actual fire or fire alarm and assume the Fire-Rescue Department would respond to all incidents, including fires, fire alarms, requests for medical aid, and suicide attempts, that may require medical aid. According to call data provided by UPD, students using the ARC facilities generated no annual fire-related calls per student in 2016/2017 and one fire-related call in 2017/2018 (average of 2016/2017 and 2017/2018 fire-related calls) (Harrison, pers. comm. 2018).

Table 2
2016/2017 and 2017/2018 Total Fire Service Calls from Existing ARC

Call Origination	Square Feet	Total Calls Received [a]		Total Calls/Square Foot [b]	
		2016/2017	2017/2018	2016/2017	2017/2018
ARC	74,000	0	1	0	0

Notes: ARC = Aztec Recreation Center.
[a] Harrison, pers. comm. 2018.
[b] Total calls per 74,000 square feet (total existing calls per 74,000 square feet (2016/2017 = 0 calls/74,000 square feet = 0 calls per square foot; 2017/2018 = 1 call/74,000 square feet = 0 calls per square foot).

The City General Plan's Public Facilities, Services, and Safety Element includes response time goals, objectives, and policies for fire and rescue services. For instance, Policy PF-D.1 of General Plan sets the following response times (City of San Diego 2015a):

- To treat medical patients and control small fires, the first-due unit should arrive within 7.5 minutes, 90% of the time from the receipt of the 911 call in fire dispatch.
- To provide an effective response force for serious emergencies, a multiple-unit response of at least 17 personnel should arrive within 10.5 minutes from the time of 911-call receipt in fire dispatch, 90% of the time.

According to the General Plan, a 3-mile distance between fire stations is typically sufficient to achieve response time objectives. Fire service delivery depends on a number of factors, including the availability of adequate equipment and number of qualified personnel (City of San Diego 2015a).

The *San Diego Fire Rescue Department Standards of Response Cover Review* commissioned by the City and prepared by Citygate Associates (Citygate Study) assessed the current fire station resource deployment system (Citygate 2017). As described in the Citygate Study, only seven stations currently meet a 90% best practice goal of 7:30 minutes from fire dispatch to first unit on scene. Stations Station 17 and Station 31 miss the 7:30-minute threshold by 11 seconds (Citygate 2017). The Citygate Study identified six of the largest "gap" areas within the City, in which additional fire stations are recommended. Neither the SDSU campus nor the project site is located within any of the service coverage gaps identified in the Citygate Study (Citygate 2017).

Police Protection

UPD provides on-campus police services to SDSU. UPD operates 24 hours per day, 7 days per week, and includes a staff of 26 sworn police officers and 53 non-sworn support employees (SDSU 2017). UPD facilities ensure the safety and security of the on-campus environment through foot, vehicular, and bike patrols. UPD is located at 55th Street and Remington Road.

UPD is the designated first responder for incidents on campus and within the College Area Community. Patrol officers are graduates of the California Peace Officers Training Academy and have full arrest powers throughout the state. They are sworn, armed, and charged with the enforcement of state and local laws, traffic laws, the investigation of accidents and crimes, and response to medical and domestic emergencies. One K-9 unit is responsible for narcotic detection and interdiction (Harrison, pers. comm. 2018).

UPD is organized into three distinct divisions: Patrol Operations, Administrative Operations, and Investigations and Support Operations (SDSU 2017). Patrol Operations includes the more visible police detail, including foot, bicycle, and vehicle patrol. Administrative Operations includes services such as communications, records, evidence, property management, and special operations. The Investigations and Support Operations provides services such as SDSU employee key card issuance, parking ticket issuance, and operation of the Community Officer Program (SDSU 2017).

UPD has an administrative agreement with the City of San Diego Police Department (SDPD) to provide mutual assistance, as appropriate, at sites in the vicinity of the SDSU campus (Harrison, pers. comm. 2018). By state law, UPD and SDPD have concurrent jurisdiction within a 1-mile radius of the SDSU campus boundary. The City and UPD have a positive working relationship and often assist one another when one department is closer to the incident or is better equipped to respond. For example, large-scale incidents like protests or demonstrations that could escalate into violence would require collaborative resources and unified command between UPD and SDPD (Harrison, pers. comm. 2018).

UPD receives all landline 9-1-1, cellular 9-1-1, and duress calls made on campus and from designated duress telephones. UPD responds to and handles all calls for service on SDSU-owned-and-operated property on the main campus. On average, UPD fields approximately 208 (average for 2016/2017 and 2017/2018) calls a year at the existing ARC.

UPD is responsible for notifying the Fire-Rescue Department if an on-campus fire is reported. When a call is received by UPD requesting fire support, the SDSU campus police notify the Fire-Rescue Department through a direct phone line (Harrison, pers. comm. 2018). UPD is able to monitor the Fire-Rescue Department radio frequency and, when necessary, go on air and direct Fire-Rescue Department personnel to the on-campus fire site. UPD personally escorts the Fire-Rescue Department to the incident site (Harrison, pers. comm. 2018).

UPD received approximately 183 calls for service (including Priority 1, 2, and 3 calls) in 2016/2017 and 121 calls for service in 2017/2018 (Harrison, pers. comm. 2018). According to its 2017 Annual Safety and Security Report, assigned on-campus calls (excluding residence halls) for services resulted in approximately 71 arrests (including liquor law, drug, and weapons violations) and 831 disciplinary referrals in 2016 (SDSU 2017). In 2016, burglary was the most prevalent major crime reported on campus, followed by motor vehicle theft and sexual offenses (SDSU 2017). According to the UPD May 2018 Monthly Report, larceny was the most prevalent major crime reported on campus, followed by motor vehicle theft and assault (UPD 2018a).

Total call data provided by UPD are summarized in Table 3. According to the data, students using the ARC facilities generated approximately 0.0021 annual calls per square foot.

Table 3
2016/2017 and 2017/2018 Total Police Service Calls from the Existing ARC

Call Origination	Square Feet	Total Calls Received[a]		Total Calls/Square Foot[b]	
		2016/2017	2017/2018	2016/2017	2017/2018
ARC	74,000	183	121	0.0025	0.0016

Notes: ARC = Aztec Recreation Center.
[a] Harrison, pers. comm. 2018.
[b] Total calls per 74,000 square feet (total existing calls per 74,000 square feet (2016/2017 = 181 calls/74,000 square feet = 0.0025 calls per square foot; 2017/2018 = 121 call/74,000 square feet = 0.0016 calls per square foot).

The Public Facilities, Services, and Safety Element of the General Plan contains goals and response time objectives for SDPD. The following are the SDPD response time goals (City of San Diego 2015a):

- Priority E calls (imminent threat to life) within 7 minutes
- Priority 1 calls (serious crimes in progress) within 12 minutes
- Priority 2 calls (less serious crimes with no threat to life) within 30 minutes
- Priority 3 calls (minor crimes/requests that are not urgent) within 90 minutes

- Priority 4 calls (minor requests for police service) within 90 minutes

UPD does not have official response time goals (Harrison, pers. comm. 2018); however, according to 2016 UPD call data, the average response time for a Priority 1 call from dispatch to on-scene arrival of UPD was approximately 4:02 minutes, while the average response times for Priority 2 and Priority 3 calls were 5:12 minutes and 6:48 minutes, respectively (UPD 2018b).

Schools

The College Area Community is served by the San Diego Unified School District (San Diego Unified). San Diego Unified comprises 226 educational facilities (including 117 tradition elementary schools, 9 K–8 schools, 24 traditional middle schools, 22 high schools, 49 charter schools, and 13 alternative schools) that serve more than 130,000 students (San Diego Unified School District 2018a). Several San Diego Unified schools, shown in Table 4, are located in the general vicinity of the proposed project.

Table 4
Project Area Public Schools

School	Street Address
Elementary Schools	
Hardy (K–5)	5420 Montezuma Road
Hearst (K–5)	6230 Del Cerro Boulevard
Foster (K–5)	6550 51st Street
Marvin (K–5)	5720 Brunswick Avenue
Clay (K–5)	6506 Solita Avenue
Language Academy (K–8)	4961 64th Street
Middle Schools	
Lewis (6–8)	5170 Greenbrier Avenue
Mann (6–8)	4345 54th Street
High Schools	
Crawford (9–12)	4191 Colts Way
Patrick Henry (9–12)	6702 Wandermere Drive

Source: San Diego Unified School District 2018b.

Parks and Recreation

The City's Parks and Recreation Department is responsible for the operation and maintenance of approximately 40,000 acres of developed and undeveloped park land and open space within the City (City of San Diego 2018b). The Recreation Element of the City's General Plan contains policies to address the City's challenges to meet the public's park and recreational needs as resident and visitor populations grow and the availability of vacant land decreases. The guidelines associated with the development of population-based parks "provide a means to measure the degree to which park and recreational facilities are developed and to equitably provide facilities throughout the City" (City of San Diego 2015a).

The General Plan park standard is to "provide population-based parks at a minimum ratio of 2.8 useable acres per 1,000 residents" (City of San Diego 2015a). The General Plan also contains various guidelines to direct the development of population-based recreation facilities (City of San Diego 2015a).

Approximately 50.84 acres of Community and Neighborhood Facilities (City of San Diego "Population-Based" Park/Recreation Facilities) and 503.7 acres of Scenic or Natural Areas currently exist on the SDSU campus (Shinn, pers. comm. 2018).

According to the College Area Community Plan, most of the College Area was developed prior to the City's adoption of the population-based park guidelines included in the General Plan Recreation Element, and as a result, the area is deficient in usable parkland (City of San Diego 2005). The College Area Community Plan also states that only one park, Montezuma Park (1 acre), is included in the College Area Community Plan boundary (City of San Diego 2005). According to the *2050 Regional Growth Forecast*, the College Area Community population is projected to be approximately 32,019 by 2020 (SANDAG 2010). In accordance with the Recreation Element of the City's General Plan, the community should be served by approximately 89.7 acres of usable parkland. However, due to the developed nature of the community, historically, the acquisition of property for additional parkland for residential use has been problematic for the City.

Libraries

The Malcolm A. Love Library (main campus library) is centrally located on the SDSU campus. The library hours vary throughout the year but are generally as follows (SDSU 2017):

- **During fall:** Monday through Thursday from 7:00 a.m. to 1:00 a.m., Fridays from 7:00 a.m. to 6:00 p.m., Saturdays from 12:00 p.m. to 7:00 p.m., and Sundays from 12:00 p.m. to 1:00 a.m.
- **During summer:** Monday through Thursday from 8:00 a.m. to 7:00 p.m., Fridays from 8:00 a.m. to 7:00 p.m., Saturdays from 12:00 p.m. to 6:00 p.m., and Sundays from 12:00 p.m. to 6:00 p.m.
- **During winter and spring:** Monday through Thursday from 7:00 a.m. to 10:30 p.m., Fridays from 7:00 a.m. to 6:00 p.m., Saturdays from 12:00 p.m. to 6:00 p.m., and Sundays from 12:00 p.m. to 10:30 p.m.

There also are two branches of the City Public Library located within the general vicinity of the project site (see Figure 7). The closest City branch library to the project site is the College-Rolando Library, located at 6600 Montezuma Road, northwest of the project site (City of San Diego 2018c). Table 5 lists the City's library branches within the project vicinity.

Table 5
City of San Diego Libraries near the Project Site

Library Branch	Street Address	Proximity to Project Site
College-Rolando	6600 Montezuma Road	1.2 miles southeast
Allied Garden/Benjamin	5188 Zion Road	1.3 miles northwest
Kensington–Normal Heights	4121 Adams Avenue	1.9 miles southwest

Source: City of San Diego 2018c.

The Public Facilities, Services, and Safety Element of the City's General Plan contains guidelines and standards for City branch libraries. According to the guidelines, library branches are required to provide a minimum of 15,000 square feet of dedicated library space (City of San Diego 2015a).

Emergency Medical Services

Emergency medical response may be provided by both UPD and Fire-Rescue Department. Goals and response time objectives for emergency medical response are included in the Public Facilities, Services, and Safety Element of the General Plan, and response time objectives are discussed above. On-campus 9-1-1 calls associated with injuries and illness are received by UPD, who are then able to request additional services from the Fire-Rescue Department, if necessary (Harrison, pers. comm. 2018).

The SDSU Student Health Services Department is responsible for on-campus student medical services. The Student Health Services Center, which is located at Calpulli Center, is staffed by fully licensed and certified healthcare professionals who provide healthcare to the SDSU community (SDSU 2011a). Basic services (such as outpatient evaluation and treatment of common medical ailments, preventive care, and health counseling) are available by appointment and are paid for through mandatory health fees paid by registered students, faculty, and staff. Regular checkups and appointments are accommodated in the 30-exam-room/3-procedure-room clinical wing. Minor surgery can be undertaken (by appointment) in one of the procedure rooms. Other services offered at the Calpulli Center include a radiology suite equipped with state-of-the-art imaging equipment, laboratory services, immunization services, and a pharmacy (Abram, pers. comm. 2018).

During the 2016/2017 school year, the Student Health Center accommodated approximately 35,000 visits. During the 2017/2018 school year, the Student Health Center accommodated approximately 34,000 visits. In 2018, approximately 407 patients to local emergency rooms were reported as referrals from the Student Health Center. (SDSU, pers. comm. 2018b). In addition to basic services, several specialists in the fields of orthopedics, optometry, and dentistry are available for appointments and consultations at various times throughout the week at the Student Health Center. Additional fees apply for specialty care services (SDSU 2011b).

Three hospitals, to which the majority of SDSU-related emergencies are referred, are located in the vicinity of the project site. The closest facility, Alvarado Hospital, is a 306-bed facility located approximately 1.1 miles northeast of the project site at 6655 Alvarado Road. More than 300 physicians, 600 registered nurses, and additional technicians and support staff work at Alvarado Hospital (Alvarado Hospital Medical Center 2018).

In addition, Sharp Grossmont Hospital is located approximately 4 miles east of SDSU at 5555 Grossmont Center Drive in La Mesa. The hospital has the largest emergency room in East County San Diego; includes numerous patient programs and services, including 24-hour emergency services and critical care, and it serves an estimated 100,000 emergency patients annually (Sharp Grossmont Hospital 2018).

Kaiser Permanente Zion Medical Center/Kaiser Foundation Hospital is located approximately 1.6 miles northwest of SDSU at 4647 Zion Road. The hospital provides 24-hour emergency services (Kaiser Permanente 2018).

Total medical aid call data provided by UPD are summarized in Table 6. The data shown in Table 6 include calls that involve anyone requiring medical attention or suicide-related calls. According to the data, students using the ARC facilities generated approximately 0.00035 annual medical calls per square foot.

Table 6
2016/2017 and 2017/2018 Total Medical Aid Service Calls from the Existing ARC

Call Origination	Square Feet	Total Calls Received[a]		Total Calls/Square Foot[b]	
		2016/2017	2017/2018	2016/2017	2017/2018
ARC	74,000	25	29	0.0003	0.0004

Notes: ARC = Aztec Recreation Center.
[a] Harrison, pers. comm. 2018.
[b] Total existing calls per 74,000 square feet (2016/2017 = 26 calls/74,000 square feet = 0.0003 calls per square foot; 2017/2018 = 29 calls/74,000 square feet = 0.0004 calls per square foot).

Sewer

The College Area Community is served by the City Metropolitan Wastewater Department, which is separated into two separate systems: (1) the Metropolitan Sewerage Sub-System and (2) the Municipal Wastewater Collection Sub-System. The ARC is serviced by the Metropolitan Sewerage Sub-System treats wastewater from the City and 15 other cities and special districts in a 450-square-mile area with a residential population of over 2.2 million (City of San Diego 2018d).

At the Point Loma Wastewater Treatment Plant (WWTP), wastewater passes through screens, grit removal tanks, and sedimentation tanks before discharge into the Pacific Ocean through the Point Loma Ocean Outfall. The Point Loma WWTP treats approximately 175 million gallons per day (mgd) of wastewater but has capacity to treat up to 240 mgd (City of San Diego 2018e).

The ARC is served by the existing City sanitary sewer system, located within 55th Street. A 10-inch sewer main west of the project site within 55th Street and an 8-inch sewer main that continues north within 55th Street toward Interstate 5 currently serve the existing ARC (P2S Engineers 2018a). Existing sewer pipeline capacities are summarized in Table 7.

Table 7
Existing Sewer Capacities

Location	Diameter	Existing Capacity (cfs)[a]
Remington Road	8 inches	0.72
Hewlett Drive	8 inches at 4.9%	1.72
Hewlett Drive	12 inches at 0.76%	2.02
55th Street	8 inches at 2%	1.10

Source: P2S Engineers 2018a.
Notes: cfs = cubic feet per second.
[a] Assumes 0.5 depth/diameter ratio.

The existing sewer flows were monitored and recorded by ADS Environmental as part of the West Campus Housing Project assessment, and the existing metered flow rates are summarized in Table 8. The flow meters were placed in the sewer manholes located at the north end cul-de-sac of 55th Street and Hewlett Drive to account for the upstream flows. The analysis was conducted over 12 days and included a concert event at Viejas Arena.

Table 8
Existing Sewer Flows

Location	Diameter	Existing Flow (cfs)[a, b]
Remington Road	8 inches	0.0417 cfs[a]
Hewlett Drive	8 inches at 4.9%	0.63 cfs[b]
Hewlett Drive	12 inches at 0.76%	0.63 cfs[b]
55th Street	8 inches at 2%	0.57 cfs[b]

Note: cfs = cubic feet per second.
[a] Based on existing flow from Chapultepec (550 beds × 49 gpd/bed = 26,950 gpd × 0.90 [return-to-sewer] = 24,255 gpd, which equals 0.0417 cfs).
[b] Flow meter data peak average was 15-minute flow.

Figure 8 (Existing Utilities) identifies the location of the existing sewer infrastructure in the project area.

Potable Water

The City Water Department treats and delivers more than 200 mgd of water to more than 1.3 million people. The City Water Department maintains and operates more than 3,300 miles of water lines, 49 water pump plants, 130 pressure zones, 29 distribution reservoirs and standpipes, and more than 415,000 acre-feet of potable water storage capacity within 9 reservoirs (City of San Diego 2018f).

The City's three water treatment plants (Miramar, Alvarado, and Otay) have a total treated capacity of 298 mgd (City of San Diego 2018g). Water delivered to SDSU and the project area is treated at the Alvarado Water Treatment Plant northeast of the project site and adjacent to Lake Murray (City of San Diego 2014a). The Alvarado Water Treatment Plant was recently expanded to increase its treatment capacity to 200 mgd (Water Technology 2014).

Potable water is delivered to the existing site through a combined 8-inch water main located within 55th Street. The City is currently planning a water infrastructure improvement project, which proposes to upsize the water mains within Hewlett Drive, Remington Road, and 55th Street to 12-inch water mains. Construction is scheduled to be completed by 2021, when the proposed project would become operational (P2S Engineers 2018a).

Solid Waste Disposal

EDCO Waste & Recycling Services (EDCO) provides solid waste management services to the SDSU campus. Solid waste is collected in dumpsters located throughout the SDSU campus and then transported to one of three locations, as follows: (1) recyclable waste is diverted to the EDCO Recycling Facility in Lemon Grove, (2) food waste and green waste are diverted to the Miramar Greenery located within the Miramar Landfill, and (3) any nonrecyclable solid waste is diverted to the Miramar Landfill. SDSU measures each dumpster upon pickup, which allows them to monitor campus performance, and they will continue these measurements (Abram, pers. comm. 2018). During fiscal year 2015–2016, SDSU reported a 34% waste (non-construction and demolition) diversion rate (SDSU 2018c).

The Miramar Landfill, an 800-acre Class III landfill located in Kearny Mesa, is owned and operated by the City Environmental Services Department. Approximately 910,000 tons of trash are disposed of at the landfill annually, or approximately 2,500 tons per day (City of San Diego 2018h). Miramar Landfill is permitted to accept 8,000 tons per day and has a maximum permitted capacity of 87,760,000 cubic yards. As of June 30, 2014, the remaining capacity of the landfill was 15,527,878 cubic yards. At the current rate of disposal, the Miramar Landfill is expected to be filled to capacity by 2025 (CalRecycle 2018a). However, according to the City Mayor's office, as of August 2015, the Miramar Landfill had a remaining capacity of approximately 11.6 million tons (City of San Diego 2015b).

The final remaining landfill in the region is the Otay Landfill in Chula Vista. As of December 21, 2016, the Sycamore Canyon Landfill had a remaining capacity of 113,972,637 cubic yards, and as of May 31, 2016, the Otay Landfill had a remaining capacity of 21,194,008 cubic yards (CalRecycle 2018b, 2018c). Table 9 provides information regarding the Miramar, Sycamore, and Otay Landfills.

Table 9
Existing Landfills

Landfill	Remaining Capacity (Cubic Yards)[a]	Maximum Permitted Capacity (Cubic Yards)[b]	Estimated Close Date	Maximum Permitted Daily Load (Tons/Day)	Data Date
Miramar Landfill	15,527,878	87,760,000	2030[c]	8,000	June 30, 2014
Sycamore Landfill	113,972,637	147,908,000	December 21, 2042	5,000	December 21, 2016
Otay Landfill	21,194,008	61,154,000	February 28, 2028	6,700	May 31, 2016
Total	**150,694,523**	**296,822,000**	**N/A**	**19,700**	**N/A**

Sources: CalRecycle 2018a, 2018b, 2018c.
Notes: N/A = not applicable
[a] Remaining capacity indicates the remaining landfill space available for solid waste.
[b] Maximum permitted capacity indicates the amount of total landfill space available for solid waste.
[c] City of San Diego 2015b.

5 Impact Analysis and Conclusions

5.1 Thresholds of Significance

The California Environmental Quality Act (CEQA) Guidelines, Section 15332, Exemptions for In-Fill Development Projects, would apply to the proposed project. The following condition of CEQA Guidelines, Section 15332, is relevant:

(e) The site can be adequately served by all required utilities and public services.

Accordingly, this section assesses whether the proposed project can be adequately serviced by fire, police, health, solid waste, and utility services.

5.2 Impact Analysis

Fire Protection

Table 10 shows the projected additional fire-related calls anticipated for the proposed project per year. As shown in Table 10, the proposed project would generate approximately one additional annual call at the proposed ARC. UPD classifies fire-related calls as actual fire or fire alarm calls.

Table 10
Projected Fire-Rescue Department Total Calls from the Proposed Expanded ARC

Call Origination	Average Annual Calls/Square Foot[a]	Additional Square Footage	Projected Additional Total Calls[b]
Proposed Expanded ARC	1	68,000	1

Note: ARC = Aztec Recreation Center
[a] See Table 2. To calculate average per square feet, the arithmetic mean of the 2016/2017 and 2017/2018 total calls per square foot ratios was used (2016/2017 = 0 calls plus 2017/2018 = 1 call = 0.5 call; rounded up to the nearest whole number = 1 additional call per year).
[b] The existing 74,000-square-foot facility generated on average one call per year. Given that the proposed ARC Expansion is very close to the same square footage, thus roughly doubling the size of the facility, a conservative estimate of one call was used to calculate projected additional total calls as a result of the proposed expansion.

Table 11 lists the current average response times for each station within the vicinity of the proposed project. The proximity of each station to the SDSU campus (all within 1.35 miles) is sufficient to achieve response time goals.

Table 11
Fire-Rescue Department Response Times

Station	Average Response Time (Minutes:Seconds)
Station 10	7:49
Station 17	7:29
Station 31	8:25

Source: Citygate 2017.

The ARC Expansion Project would add only one fire call per year and would not increase or exceed target response times. Further, a new 10,500-square-foot fire station is planned to be located near 55th Street and Hardy Avenue, which would augment existing fire facilities in the College Area Community (City of San Diego 2014b). The new College Area fire station was included in the 2017 Capital Improvement Plan (Citygate 2017). Additionally, with implementation of the City's Group Job 807 project (see discussion under Potable Water), the proposed ARC Expansion would consist of fully sprinklered facilities, which would effectively slow the effect of a fire in the initial stages.

Therefore, the site is and would continue to be adequately served by existing fire protection facilities.

Police Protection

The proposed expansion would add students and employees on site, which would result in an addition of police calls. Table 12 provides a projection of future calls to UPD, which responds to calls for service originating from the existing ARC located on the project site. As shown in Table 12, the proposed project would generate approximately 140 additional annual calls to UPD.

Table 12
Projected Total Calls per Year from the Proposed Expanded ARC

Call Origination	Average Annual Calls/Square Foot[a]	Additional Square Footage	Projected Additional Total Calls
Proposed Expanded ARC	0.0021	68,000	140

Notes: ARC = Aztec Recreation Center.
[a] See Table 3. To calculate the average calls per square foot, the arithmetic mean of the 2016/2017 and 2017/2018 total calls per square foot ratios was used.

Because the project site lies within the jurisdiction of UPD and is already part of the normal patrol and enforcement zone, this minor increase in calls would not generate any new or altered demands on SDPD. As discussed in Chapter 4, Existing Conditions, UPD's current response times are well within response time goals (City of San Diego 2015a). The minor addition of 140 total calls per year has no potential to substantially increase UPD's current response times; therefore, response times would continue to be within acceptable service levels at project buildout.

Therefore, with the proposed project's forecast effect on existing response times, the site is and would continue to be adequately served by existing police protection facilities.

Schools

The proposed ARC Expansion Project would not result in an increase in enrollment of students at SDSU. Although the proposed project would result in the addition of 12 to 20 part-time workers on site, this increase would be minimal and would consist of existing SDSU undergraduate or graduate student workers who would reside in the general area. The proposed project would not lead to any substantial population growth such that new or physically altered school facilities would be required. The proposed project would not result in additional children that would use nearby K–12 school facilities. Thus, the site is and would continue to be adequately served by existing schools.

Parks and Recreation

The proposed project would not result in an increased enrollment on campus. Although the proposed project would result in the addition of 12 to 20 part-time workers on site, this increase would be minimal and would consist of existing SDSU undergraduate or graduate student workers who would reside in the general area. Thus, the proposed project would not generate additional demand for parks and recreational facilities. Further, the proposed project is an expansion of a recreational facility, and SDSU students are more likely to use SDSU recreational facilities than off-campus city facilities. As described in Chapter 4, SDSU provides 50.48 acres of community/neighborhood-type facilities, and 503.7 acres of scenic/natural areas. These SDSU-owned-and-operated facilities are more than adequate to support the existing student body. Therefore, the site is and would continue to be adequately served by parks and recreation facilities.

Libraries

The proposed project would not result in increased enrollment on campus. Although the proposed project would result in the addition of 12 to 20 part-time workers on site, this increase would be minimal and would consist of existing SDSU undergraduate or graduate student workers who would reside in the general area. Thus, the proposed project would not generate additional demand for library facilities. While students have the option to use surrounding City libraries, SDSU students are more likely to use the Malcom A. Love Library because of its proximity to classrooms and other academic facilities and the research capabilities that are typically present only in university library facilities. Because the proposed project would not result in an increase of students or community members on site that would use the Malcom A. Love Library or other nearby libraries, the site is and would continue to be adequately served by existing libraries.

Emergency Medical Services

The proposed project would not increase the student enrollment at SDSU and would not increase the population in the area. The expanded ARC space would increase the number of people at the project site, and would result in a corresponding minor increase in the number of yearly emergency medical calls. However, this increase would be minimal (see Table 13). As shown in Table 13, the proposed project would generate approximately 24 additional annual calls to UPD from the proposed expanded ARC.

Table 13
Projected Total Calls per Year from the Proposed Expanded ARC

Call Origination	Average Annual Calls/Square Foot[a]	Additional Square Footage	Projected Additional Total Calls
Proposed Expanded ARC	0.0004	68,000	24

Notes: ARC = Aztec Recreation Center.
[a] See Table 6. To calculate average calls per square foot, the arithmetic mean of the 2016/2017 and 2017/2018 total calls per square foot ratios was used.

Further, the project site lies within the jurisdiction of UPD and is already part of the normal patrol for responding to medical emergencies. Thus, the proposed project would not generate any new or altered demands on SDPD. As discussed in Chapter 4, SDSU is responsible for on-campus student medical services and provides basic urgent care services. Further, three hospitals, to which the majority of SDSU-related emergencies are referred, are located within 1 to 2 miles of the site. Accordingly, existing facilities are adequate to serve future users of the proposed expanded ARC. As such, new emergency medical service facilities would not be required to maintain acceptable levels to accommodate the SDSU campus, and the site is and would continue to be adequately served by existing emergency medical services.

Sewer

Wastewater Generation

The California Emissions Estimator Model (CalEEMod), Version 2016.3.2, was used to estimate wastewater generated on site with implementation of the proposed project. Default water usage rates were used to estimate the anticipated water demand of the proposed project. Based on estimated capacity and accessory uses, wastewater generation at the existing ARC is approximately 4,376,590 gallons per year, while anticipated wastewater generation with implementation of the proposed project would be 7,593,980 gallons per year.[1] As such, the proposed project would generate a net change of 3,217,380 gallons per year, or 8,815 gallons per day (or 0.0137 cfs).[2]

Sewer Infrastructure

The proposed project would be served by existing sewer infrastructure located in area roadways (see Figure 2). As discussed in Chapter 4, a 10-inch sewer main and an 8-inch sewer main currently serve the existing ARC (P2S Engineers 2018a). The proposed project would also include a few improvements to the current internal sewer system.

The sanitary drainage and vent system within the building would be replaced with a new system. The new system would be provided within the building and would connect to an existing sewer lateral. The system would serve the restrooms, mechanical equipment, and floor receptors. The system would be primarily run by gravity. Building drains that cannot be discharged by gravity flow would be collected into a duplex sewage ejector system and discharged into the gravity drainage system. Horizontal drainage piping within the building would be sloped to drain at a minimum 0.25 inches per foot of piping.

Heating, ventilation, and air conditioning (HVAC) condensate piping would be installed for each HVAC unit and would drain to a direct waste connection to the sanitary soil/waste system through an approved receptor, tailpiece connection at the nearest lavatory or sink, or a fixed gap mounted within a stainless-steel panel in the wall.

Emergency drainage would be provided for the fire sprinkler system. Hub drains would be provided to drain the system during flow test or maintenance procedures and would be connected to the sanitary drainage system. Floor drains would be provided where required, and the trap seals would be maintained through pressure-drop-activated trap seal primers with a distribution unit where applicable (P2S Engineers 2018a).

Sewer Capacity

Table 7 provides the existing capacities and depth/diameter ratio of the sewer mains. Table 8 outlines the existing sewer flows. It is expected that the proposed project would be served by the existing sewer line within 55th Street. The proposed project would add 0.0137 cfs to this line, resulting in a total projected flow rate of 0.5837 cfs at the sewer line along 55th Street.[3] As shown in Table 7, the sewer line has the capacity of 1.10 cfs, which is more than adequate to support additional sewer flow from the proposed project.

Wastewater generated by the proposed project would then be conveyed through the City's Metropolitan Wastewater Department's collection system and would eventually be treated at the Point Loma WWTP. As stated previously, the Point Loma WWTP currently treats approximately 172 mgd (5-year average) of wastewater and has the capacity to treat up to 240 mgd of wastewater (City of San Diego 2018d). The proposed project would generate 8,815 gallons of wastewater per day, representing 0.005% of the wastewater currently treated at the Point Loma WWTP.

1 Proposed facilities include wastewater generated in total with the proposed project (existing plus expansion).
2 Proposed wastewater generation minus existing wastewater generation.
3 0.0137 cfs (proposed project) + 0.57 cfs (existing flow at sewer line within 55th Street) = 0.5837 cfs.

As such, the proposed project's small proportion of total wastewater generation has no potential to significantly contribute to capacity. Thus, because the site would have enough local and regional sewer capacity to serve the proposed project, the site is and would continue to be adequately served by existing sewer and wastewater facilities.

Potable Water

Water Distribution Infrastructure

Water Demand

Domestic and fire water are currently supplied to the existing site through a combined 8-inch water main located within 55th Street. The City is currently planning a water infrastructure improvement project that proposes to upsize the water mains within Hewlett Drive, Remington Road, and 55th Street to 12-inch water mains. Construction is scheduled to be completed by 2021, when the proposed project would become operational.

CalEEMod default water use rates were used to estimate the anticipated water demand of the proposed project. Based on estimated capacity and accessory uses, water use at the existing ARC is approximately 7,059,020 gallons per year (4,376,590 gallons/year for indoor consumption and 2,682,430 gallons/year for outdoor consumption), while anticipated water use with implementation of the proposed project would be 12,741,340 gallons per year (7,593,980 gallons/year for indoor consumption and 5,147,360 gallons/year for outdoor consumption).[4] As such, the proposed project would generate a net change of 5,687,320 gallons per year, or 15,420 gallons per day.[5]

Capacity of Water-Serving Infrastructure

Water-Serving Pipelines

To assess whether pipelines are adequately sized to respond to the highest possible water delivery scenario, the worst-case scenario for water delivery was assumed: the provision of required fire flow (during a fire) for the duration identified in the California Fire Code. As stated in the California Fire Code, fire flow requirements for individual buildings are determined according to building square footage, number of floors, and construction type. For the proposed project's square footage, fire flow required by the California Fire Code is 3,000 gallons per minute (gpm). With the ARC building's sprinkler reduction systems, the fire flow is reduced to 2,250 gpm, based on California Fire Code allowances (P2S Engineers 2018a).

The City's Group Job 807 Project, expected to be completed by 2021, would involve upsizing the water mains within Hewlett Drive, Remington Road, and 55th Street to 12-inch water mains. The City's upsized 12-inch main would provide 4,000 gpm fire flow to the project site by 2021 (P2S Engineering 2018a, 2018b). As such, there would be adequate water mains for fire flow with implementation of the proposed project.

Therefore, adequate water would be supplied for the proposed project (P2S Engineers 2018a, 2018b).

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4 Proposed facilities include wastewater generated in total with the proposed project (existing plus expansion).
5 Proposed wastewater generation minus existing wastewater generation.

Water Treatment Plants

As discussed previously, the City's three water treatment plants (Miramar, Alvarado, and Otay) have a total treatment capacity of 294 mgd. Water delivered to the project area is treated at the Alvarado Treatment Plant, which has a treatment capacity of 200 mgd (City of San Diego 2015a). The proposed project would generate a net change of 5,687,320 gallons per year, or 15,420 gallons per day.[6] As such, the proposed project would account for 0.00018% of the Alvarado Treatment Plant's capacity.

Regional Supply and Demand Projections

According the City's Urban Water Management Plan, the San Diego Association of Governments projected that the City's service area population would increase to 1.66 million residents by the year 2035, which is an approximately 20% increase from 2015 (City of San Diego 2016). The City's Urban Water Management Plan also calculated that the applicable water demand in 2035, under a normal year, would be 273,748 acre-feet per year (City of San Diego 2016). The San Diego Association of Governments' 2035 water-demand projection assumes that the City would maintain active conservation programs throughout the forecasted timetable. Under dry-weather conditions, 2035 water demand is projected to be 279,550 acre-feet per year (City of San Diego 2016).

As discussed previously, the proposed project would generate approximately 5,687,320 gallons of water per year, which equates to 17.5 acre-feet per year. The estimated water consumption of the proposed project is 0.0064% of the City's estimated water demand for 2035 for a normal year and 0.0003% of the City's estimated water demand for 2035 for a dry-weather year. As such, while the proposed project would involve a small intensification on site, the site is already developed with the existing ARC facility. Further, the proposed project would result in a nominal increase in water demand in the context of the water portfolio managed by the City.

Consistent with CSU policy, SDSU installs low-flow toilets, flush valve controls, electronic faucets, and low-flow showerheads in all or most of its lavatory facilities. SDSU also required the installation of energy- and water-conserving fixtures in new construction on campus. To conserve water used in landscape irrigation, SDSU uses irrigation controllers that are linked to weather service evapotranspiration data to deliver the irrigation water only when needed. Consistent with CSU policy, SDSU will continue to implement conservation measures to reduce the use of water and decrease wastewater flows.

Further, SDSU is committed to obtaining LEED Platinum rating for the proposed ARC. To obtain points toward a LEED Double Platinum rating, the proposed project would implement a combination of water-efficient features into the project design. As identified for the LEED Building Design and Construction, water-efficient elements include features associated with indoor and outdoor water reduction. Applicable water-reuse features may include installation of rainwater capture and management systems, incorporation of low-water-consumption plumbing features (such as graywater capture), installation of water meters, and incorporation of drought-tolerant plants in landscaping. Lastly, a project may obtain LEED points through installation of very-high-efficiency or high-efficiency (low-flow) fixtures in showers, which are usually a high water use in recreation facilities. The commitment to obtaining a LEED Double Platinum rating ensures that the proposed project would be designed, constructed, and operated to maximize water efficiency.

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6 Proposed wastewater generation minus existing wastewater generation.

Solid Waste Disposal

The proposed project's solid waste disposal needs would be served by EDCO. EDCO transports solid waste generated on campus to the Miramar Landfill. According to the City Mayor's office, as of August 2015, the Miramar Landfill had a remaining capacity of approximately 11.6 million tons (City of San Diego 2015b). When the Miramar Landfill closes, EDCO would be responsible for disposing of the solid waste generated by the proposed project at a landfill in the region with sufficient permitted capacity, either Sycamore Canyon Landfill (located in Santee) or Otay Landfill. As of December 2016, the Sycamore Canyon Landfill had a remaining capacity of approximately 148 million cubic yards (CalRecycle 2018b), while as of May 2016, Otay Landfill had a capacity of 61 million cubic yards (CalRecycle 2018c).

The anticipated solid waste generation from the proposed project was estimated using CalEEMod, Version 2016.3.2, which assumed an annual solid waste generation rate of 1.3 tons per 1,000 square feet of university facility space. Based on the assumption that there would be an increase of 68,000 gross square feet on campus, the proposed expansion would generate an increase of approximately 388 tons of solid waste per year at the ARC. CalEEMod was also used to conservatively calculate the existing solid waste generated on site, which is 422 tons of solid waste per year. While the expanded facility would conceivably result in additional solid waste generation, because the project would not result in an increase in the SDSU student population, the amount of solid waste generation is likely overstated (Table 14).

Table 14
Existing and Projected Annual Solid Waste Generation

Project Component	Existing (Tons/Year)	Projected (Tons/Year)	Net Increase (Tons/Year)
Proposed Expanded ARC	422	810	388

Source: CalEEMod Version 2016.3.2.
Note: ARC = Aztec Recreation Center.

Sufficient permitted capacity exists to serve the proposed project's solid waste generation of 388 annual tons (shown in Table 14). In support of this available capacity, the current County of San Diego (County) Five-Year Report (Countywide Integrated Waste Management Plan) states that existing landfills have enough daily permitted disposal capacity for the next 17 years and therefore would meet state requirements that the County maintain 15 years of disposal capacity (County of San Diego 2012). The projected waste disposal needs of the region were developed using General Plan growth data obtained from jurisdictions throughout the County. Because the project would not result in an overall population increase, it would not result in unplanned growth in the region's solid waste stream as projected by jurisdictions throughout the County.

The County's Siting Element (California Integrated Waste Management Plan) discusses several strategies for increasing or extending regional landfill capacity, including (1) continuation of diversion programs for recyclable materials, (2) improvement of landfill technology and space management, (3) construction of enhanced recycling facilities, (4) export of waste out of the County, and (5) increase of maximum daily permitted throughput rates at County landfills (County of San Diego 2005). In addition to the recommendations included in the County Siting Element, the County, all jurisdictions within the County, and state agencies (including SDSU) are expected to implement and maintain waste diversion programs to prolong the operation of County landfill facilities.

Construction activities associated with the proposed project, such as demolition, would generate construction waste. However, construction waste would be disposed of at a construction waste recycling facility. SDSU typically diverts 64% of their yearly campus-generated solid waste to a licensed recycling facility, including construction and demolition waste (SDSU 2018c). Solid waste generated from construction and operation of the proposed project would be subject to the existing on-campus solid waste diversion program, which historically has been successful at diverting at least 50% of campus-generated solid waste from a landfill to an appropriate recycling facility. Maintaining the existing diversion rate would ensure compliance with Assembly Bill 75, which requires large state facilities to divert at least 50% of solid waste from landfills. Given SDSU's commitment to aggressive construction waste diversion goals, it is anticipated that adequate landfill capacity exists for the proposed project's construction waste.

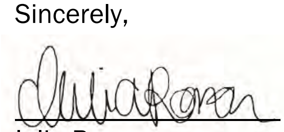
In addition, operation of the proposed project would generate an increased demand for solid waste disposal services. Table 14 provides a summary of the anticipated solid waste generation of the proposed project.

As shown in Table 14, the proposed project is conservatively projected to generate a net increase of 388 annual tons of solid waste over the amount generated by the existing ARC on the project site. Regional solid waste disposal landfills currently available are expected to have sufficient permitted capacity to serve the proposed project's solid waste generation through buildout. Therefore, the site is and would continue to be adequately served by existing solid waste facilities with sufficient permitted capacity to accommodate its solid waste disposal needs.

5.3 Conclusion

Based on the analysis in Section 5.2, the proposed project can be adequately served by the required utilities and public services.

Sincerely,



Iulia Roman
Environmental Analyst

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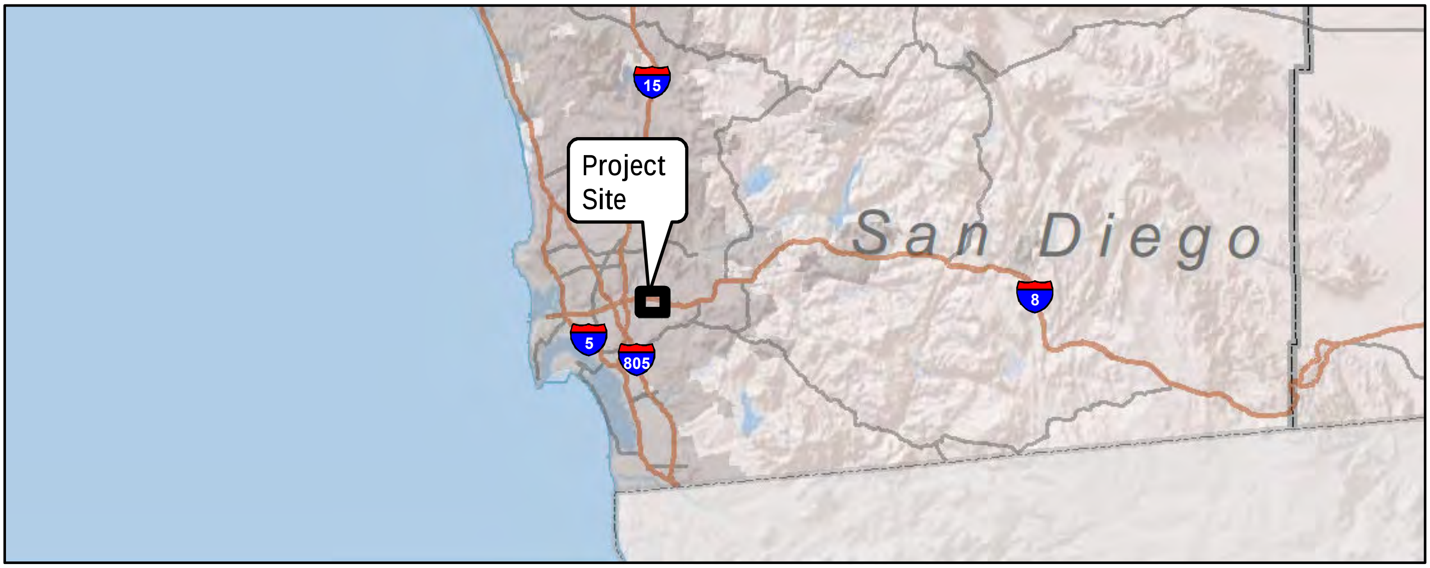
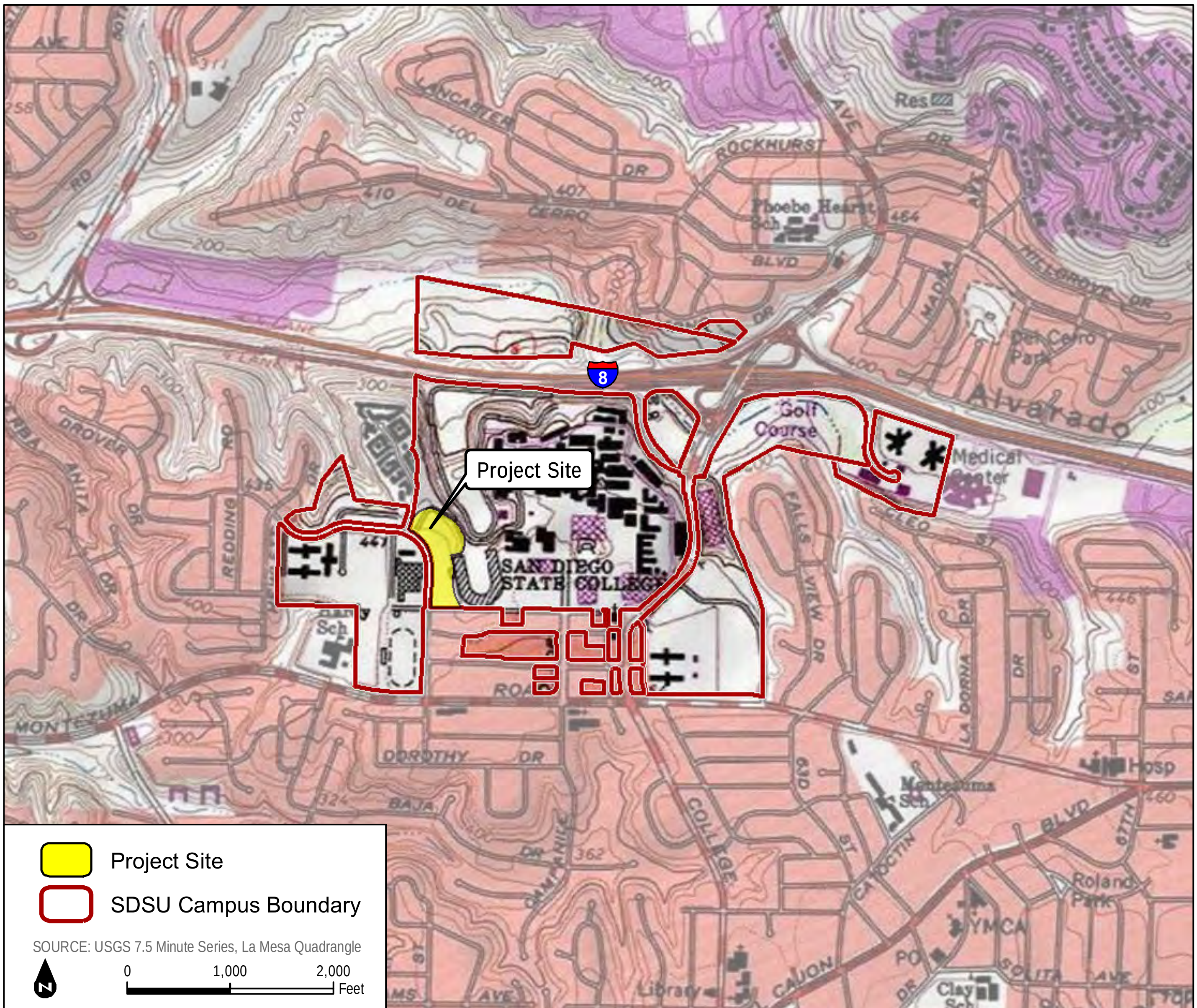




SDSU ARC Expansion Project

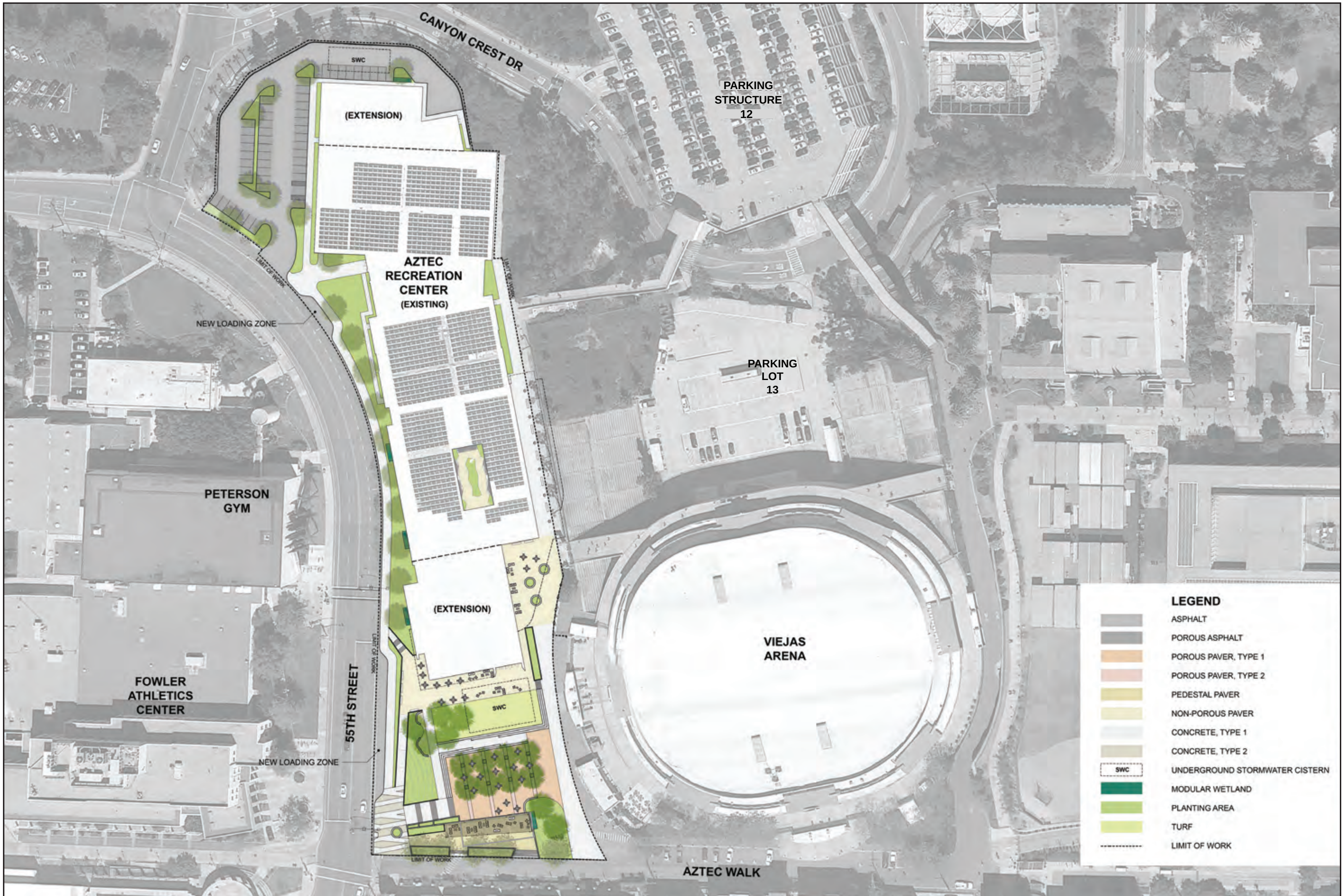
SAN DIEGO STATE UNIVERSITY

Figure 1
Project Location

SDSU ARC Expansion Project

San Diego State University

Figure 2
Project Site



SDSU ARC Expansion Project

San Diego State University

Figure 3

Site Plan

SOURCE: McCarthy / SmithGroupJJR 2018

SDSU ARC Expansion Project

SAN DIEGO STATE UNIVERSITY

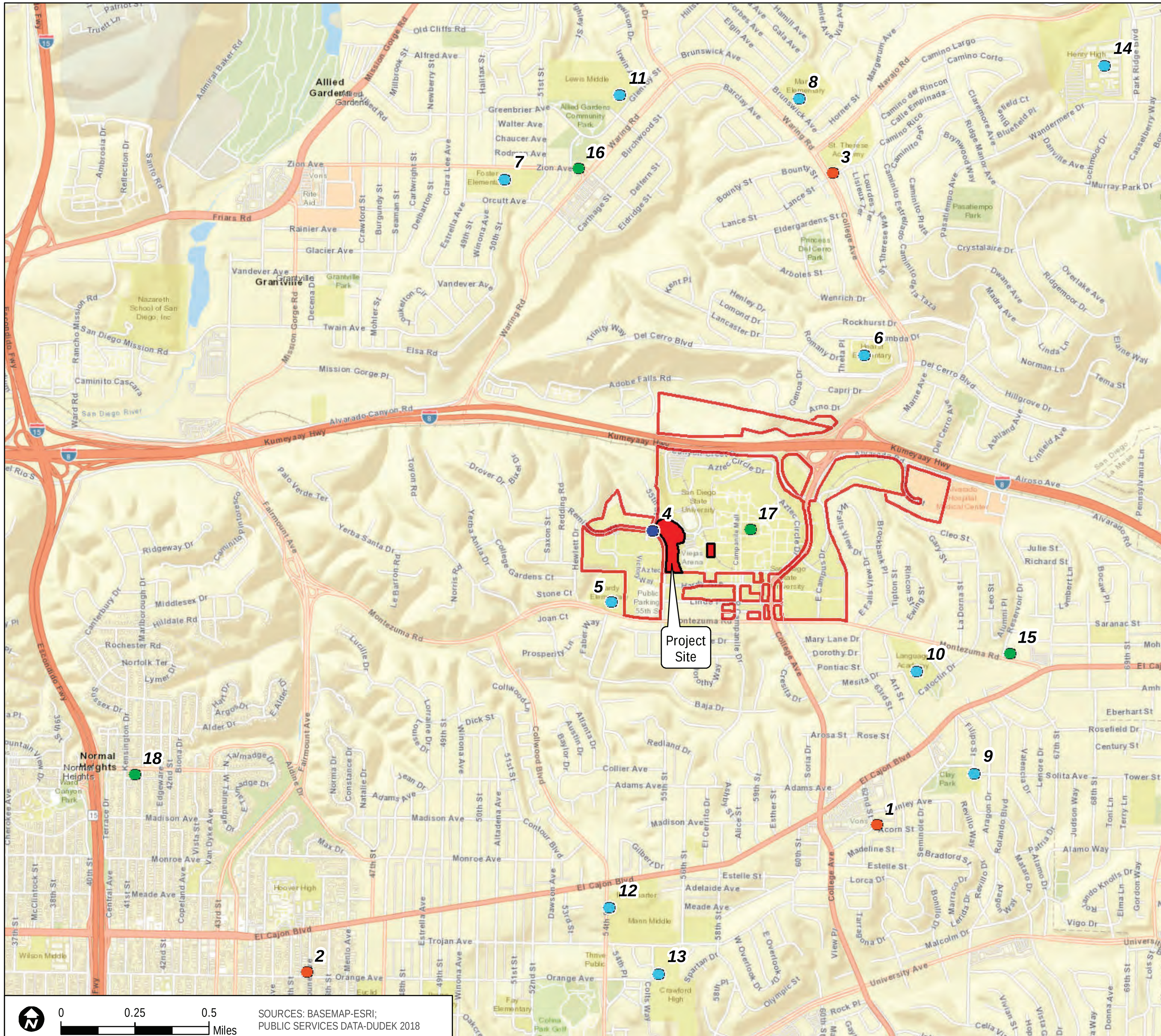
Figure 5
Floor Plans

SDSU ARC Expansion Project

San Diego State University

Figure 6

Architectural Rendering – Southern Elevation



SDSU ARC Expansion Project

SDSU Campus Boundary

PUBLIC SERVICE

Fire Station

Police Station

Library

School

ID	Name	Location
Fire Stations		
1	Station 10 (Battalion 4 Headquarters)	4605 62nd Street
2	Station 17	4206 Chamoune Avenue
3	Station 31	6002 Camino Rico
Police Stations		
4	SDSU Police Department	55th Street and Remington Road
Schools		
5	Hardy Elementary School (K-5)	5420 Montezuma Road
6	Hearst Elementary School (K-5)	6230 Del Cerro Boulevard
7	Foster Elementary School (K-5)	6550 51st Street
8	Marvin Elementary School (K-5)	5720 Brunswick Avenue
9	Clay Elementary School (K-5)	6506 Solita Avenue
10	Language Academy (K-8)	4961 64th Street
11	Lewis Middle School (6-8)	5170 Greenbrier Avenue
12	Mann Middle School (6-8)	4345 54th Street
13	Crawford High School (9-12)	4191 Colts Way
14	Patrick Henry High School (9-12)	6702 Wandermere Drive
Libraries		
15	College-Rolando Library	6600 Montezuma Road
16	Allied Garden/Benjamin Library	5188 Zion Road
17	Malcolm A. Love Library	5500 Campanile Drive
18	Kensington-Normal Heights Library	4121 Adams Avenue

Figure 7
Existing Public Services

0 300 600 Feet

SOURCES: AERIAL-BING MAPPING SERVICE; HYDROLOGY- SANGIS

Flow Direction
Existing Storm Drain
Existing City Sewer
Existing City Water

SDSU ARC Expansion Project

SAN DIEGO STATE UNIVERSITY

Figure 8
Exisiting Utilities

Appendix G
Historical Resources Technical Memorandum

605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 760.942.5147 F 760.632.0164

MEMORANDUM

To:	Michael Haberkorn, Andrew Contreiras (Gatzke Dillon & Ballance)
From:	Kara R. Dotter, Nicole Frank, Samantha Murray (Dudek)
Subject:	SDSU ARC Expansion Project – Historical Resources Technical Memorandum
Date:	November 20, 2018
cc:	Sarah Lozano, Iulia Roman (Dudek)
Attachment(s):	Appendix A (CONFIDENTIAL)

Dudek prepared this Historical Resources Technical Memorandum to discuss the presence and potential impacts related to historical resources associated with the proposed San Diego State University (SDSU) Aztec Recreation Center (ARC) Expansion Project (proposed project), located in the City of San Diego (City), California. This technical memorandum provides the results of the historical resources investigation.

1 Project Location and Setting

The project site is located within the athletics district of the SDSU campus, immediately north of Viejas Arena and east of 55th Street (Figure 1, Project Location). The proposed project would involve expanding the facility from 74,000 square feet to approximately 142,000 square feet to allow for additional indoor court space, enhanced food service and meeting space, and the ability for SDSU to "right-size" their locker room facilities. Currently, the ARC has a monthly membership of approximately 16,000 individuals. Of that total, 5%–6% are community members outside of SDSU, while the rest are SDSU students, faculty, or staff. Starting in fall 2021, the SDSU Student Body Center fee will increase, and all students will have access to the ARC. The proposed project would continue to be open to the public with a paid membership, but would not be actively marketed to non-SDSU community membership. It is expected that additional students would use the ARC as a result of the modified fee and implementation of the proposed project.

2 Project Description

2.1 Local and Regional Setting

The project site is located in the western portion of the main SDSU campus within the existing Campus Master Plan boundary, approximately 8 miles east of downtown San Diego (Figure 1). As shown on Figure 2, Project Site, the project site is bounded by 55th Street to the west, Aztec Circle Drive to the north, the remnants of the Aztec Bowl bleachers and a surface parking lot to the east (Parking Lot 13), Viejas Arena to the southeast, and Aztec Walk to the south.

Land uses densely surround the site of the proposed project and include SDSU recreational facilities, a parking information center, and surface parking lots to the west; surface parking lots, the SDSU International Student

Center, and multifamily residential uses to the north; surface parking lots and structure parking to the north and east; and fraternity row and multi-family residential uses to the south.

2.2 Description of the Proposed Project

The proposed project is an expansion of the existing ARC, a single-story building that consists of approximately 74,000 square feet that includes a four-court gym and cardio fitness and weightlifting areas. The proposed project includes expanding the existing ARC by approximately 68,000 square feet. With the expansion, the ARC building would consist of two stories, a proposed courtyard, and associated landscaping (Figure 3, Site Plan). On the first level, the proposed project would involve expansion of the ARC south of the existing ARC and the addition of a multi-activity court gym to the northwest. The new southern portion of the ARC would include a classroom pavilion, a terrace café, gender-neutral locker rooms and restrooms, the Canyon Lounge, three group fitness rooms, a climbing court, and an open fitness room (Figure 5, Floor Plans). The proposed project would also involve expansion of the existing ARC on the second level. Figure 5 (Floor Plans) and Figure 6 (Architectural Rendering – Southern Elevation) depict the floor plans and the basic design of the proposed project. In addition to newly renovated recreational spaces, the proposed project would also include solar panels on the roof of the proposed ARC (see Figure 2).

Currently, the ARC has a monthly membership level of approximately 16,000 individuals, approximately 5%–6% of which are members of the public not affiliated with SDSU; the remainder are SDSU students, faculty, or staff. Currently, SDSU students must pay to join the ARC; approximately 35% of the SDSU student body are members. Starting in fall 2021, the SDSU Student Body Center fee will increase; this fee increase will provide the financial resources to allow all students the ability to have access to the ARC. The expanded ARC will continue to be open to the public but will not be actively marketed to increase non-SDSU community membership.

2.3 Construction of the Proposed Project

The first phase of construction would involve demolition of approximately 25,000 square feet of the existing ARC. A total volume of 6,167 cubic yards of debris would be removed. The second phase of construction would consist of site preparation, such as clearing and grubbing. Stormwater pollution prevention plan–directed controls would also be installed. The third phase of construction would include grading, the fourth phase of construction would consist of building construction, the fifth phase of construction activities would include paving, and the sixth and final phase of construction would include application of architectural coatings, such as stucco and paint. The proposed equipment staging area would be provided off site east of Viejas Arena at the corner of Aztec Bowl and an unnamed access road (Figure 2). The existing ARC would remain open during construction activities, and existing ARC parking would remain accessible during construction.

Construction access would be provided at the corner of Aztec Walk and 55th Street and along 55th Street. During construction, fencing would be placed along the perimeter of the proposed courtyard area within the southern portion of the site. The proposed equipment staging area would be off site to the east of the Viejas Arena at the corner of Aztec Bowl and an unnamed access road (Figure 2).

3 Methodology

3.1 CHRIS Records Search

On August 28, 2018, Dudek conducted a search of the California Historical Resources Information System (CHRIS) at the South Coastal Information Center. The records search included previously recorded cultural resources and investigations within a 1-mile radius of the project area. The search also included a review of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Historic Resources Inventory list. The results of that search, including a bibliography of prior cultural resources studies, are provided in Confidential Appendix A.

Previously Conducted Cultural Resource Studies

Results of the cultural resources records search indicated that 79 previous cultural resource studies have been conducted within 1 mile of the project area between 1973 and 2016 (Table 1). Of these, three studies intersect the project area.

Table 1. Previous Technical Studies within 1 Mile of the Project Area

SCIC Report No.	Publisher	Date	Title	Proximity
SD-00555	Sue Ann Cupples	1977	An Archaeological Survey Report for a Proposed Construction Project on 11-SD-8 p.m. 4.9/8.3 11206-152351	Outside
SD-00803	Caltrans	1987	Negative Archaeological Survey Report: Proposed Additional Project Limits for Westbound Auxiliary Lane on Interstate 8, 11-SD-8 P.M. 5.8/9.7 11222-169660	Outside
SD-01706	Caltrans	1980	Phase I Archaeological Survey Report for Lane Additions and Sound Barrier on Interstate 8 11-SD-8 P.M. 8.5-10.4 11203-189821	Outside
SD-02538	Roth and Associates	1992	Cultural Resources Survey College Area Redevelopment Project EIR 131.4 Acres	Outside
SD-00469	Caltrans	1977	An Archaeological Survey Report for Portions of a Proposed Ramp Metering Project (11-SD-8, P.M. R 0.0- R 18.7) 11355-146531	Outside
SD-02894	City of San Diego Planning Department	1993	Mitigated Negative Declaration Replacement of Water and Sewer Pipes: La Jolla, Uptown, Mission Valley, Midway and Navajo Communities	Outside
SD-09070	Kyle Consulting	2002	Cultural Resource Assessment for Cingular Wireless Facility SD703-01 City of San Diego, California	Outside
SD-09069	Kyle Consulting	2002	Cultural Resource Assessment for Cingular Wireless Facility SD701-02 City of San Diego, California	Outside

Table 1. Previous Technical Studies within 1 Mile of the Project Area

SCIC Report No.	Publisher	Date	Title	Proximity
SD-09038	Kyle Consulting	2002	Cultural Resources Assessment for Cingular Wireless Facility SD835-01, City of San Diego, San Diego County, California	Outside
SD-04450	Price, Harry	1980	11-SD-08 P.M.8.5/10.4 11203-189821 Auxiliary Lanes & Sound Barriers	Outside
SD-08420	Brian F. Smith & Associates	2003	Results of Archaeological Monitoring at the North Chollas Community Park Phase IP; K01069CA; CIP No. 29-6670, Specification No. 8295a, Work Order No. 296670; LDR No. 98-0150	Outside
SD-09228	Brian F. Smith & Associates	2004	An Archaeological/Historical Study for the Paseo at San Diego State University Project	Outside
SD-04938	Gallegos And Associates	1996	Cultural Resources Survey for a Portion of the Adobe Falls Project	Outside
SD-06424	RBF Associates	1997	Draft: San Diego County Water Authority San Diego 18 Flow Control Facility and Connecting Pipeline Project	Outside
SD-07504	LSA Associates Inc.	2002	Cultural Resource Assessment Cingular Wireless Facility No. SD702-02 San Diego County, CA	Outside
SD-00041	Caltrans	1985	Negative Archaeological Survey Report: Proposed Westbound Auxiliary Lane on Route 8, P.M. 6.3-8.1, 11222-169660	Outside
SD-02902	Gallegos & Associates	1995	Cultural Resource Survey Report for the Adobe Falls Sewer Alignment Project	Outside
SD-05675	Richalene Kelsay	1987	Negative Area Survey Report District II County of San Diego	Outside
SD-06262	City of San Diego	1997	Mitigated Negative Declaration for Alvarado Trunk Sewer Realignment	Outside
SD-06526	Mary Donovan	1985	Negative Archaeological Survey Report 8-Fairmount Ave.-Westbound Auxiliary Lane	Outside
SD-06744	Cherilyn Widell	1995	Office of Historic Preservation Aztec Bowl	Outside
SD-07015	City Of San Diego	1999	Public Notice Of Proposed Negative Declaration Student Housing	Outside
SD-07892	Caltrans	2001	Historic Property Survey Report I15-SR67	Outside
SD-07780	Brian F. Smith and Associates	2002	An Archaeological Survey of the Alvarado Trunk Sewer Project, Alvarado Canyon, San Diego, California	Outside
SD-09432	City of San Diego	2004	The Paseo at San Diego State University, Environmental Impact Report, Volume 1	Outside

Table 1. Previous Technical Studies within 1 Mile of the Project Area

SCIC Report No.	Publisher	Date	Title	Proximity
SD-09697	Brian F. Smith and Associates	2004	An Archaeological/Historical Study for the SDSU 2005 Campus Master Plan Revision	Intersects
SD-10324	Kathleen Crawford	2006	Historical Assessment of the Building Complex Located at 6050 El Cajon Blvd., San Diego, California, 92101	Outside
SD-10525	Patricia E. Teaze	1973	Adobe Falls	Outside
SD-10536	Ogden Environmental and Energy Services Co. Inc.	1993	Report to the Historical Board for the City of San Diego Water Utilities Department Alvarado Filtration Plant Upgrade and Expansion CIP 73-261	Outside
SD-10545	ASM Affiliates	2007	Talmadge Community	Outside
SD-11129	City of San Diego – Development Services	2002	Cultural Resources Survey for the 60th Street Pipe Replacement/Relocation Project (CIP 46-611.0, Fund 41506, Dept. 773, O.A. 9544, J.O. 178401)	Outside
SD-11185	Brian F. Smith and Associates	2007	A Cultural Resources Study for the SDSU 2007 Campus Master Plan Revision	Intersects
SD-11265	Unknown	n.d.	San Diego State University, 5300 Campanile Drive, San Diego, California 92182	Intersects
SD-11826	Affinis	2008	Archaeological Resources Analysis for the Master Stormwater System Maintenance Program, San Diego, California Project No. 42891	Outside
SD-12076	Legacy 106 Inc.	2007	Historical Nomination of the Baron X. Kouch/Norma Meyer Schuh Spec House No. 2, 4643 El Cerrito Drive – El Cerrito, San Diego, California	Outside
SD-12200	City of San Diego Development Services Department	2009	Draft Environmental Impact Report for the Master Storm Water System Maintenance Program (MSWSMP)	Outside
SD-12421	ASM Affiliates Inc.	2000	Final: A Cultural Resources Inventory of the Proposed AT&T/PF.Net Fiber Optics Conduit Ocotillo to San Diego, California	Outside
SD-12200	City of San Diego Development Services Department	2009	Draft Environmental Impact Report for the Master Storm Water System Maintenance Program (MSWSMP)	Outside
SD-12510	Affinis	2009	Individual Historic Assessment Report for the Alvarado Channel	Outside

Table 1. Previous Technical Studies within 1 Mile of the Project Area

SCIC Report No.	Publisher	Date	Title	Proximity
SD-12296	Scott A. Moomjian, Esq.	2009	Historical Assessment of the 5585, 5595, 5605, 5619, & 5633 Lindo Paseo Buildings San Diego, California 92115	Outside
SD-12274	Affinis	2000	Archaeological Resources Survey, Alvarado Estates, San Diego, California	Outside
SD-12325	Scott A. Moomjian, Esq.	2009	Historical Assessment of the 6229, 6237, & 6245 Montezuma Road Buildings San Diego, California 92115	Outside
SD-13006	Affinis	2011	Master Storm Water System Maintenance Program	Outside
SD-13143	Brian F. Smith and Associates Inc.	2010	Archaeological Resource Monitoring Form: Mitigation Monitoring of Sewer Group 766 Project	Outside
SD-13145	Unknown	2010	Archaeological Resource Report Form: Mitigation Monitoring of Sewer & Water Group 684a Project	Outside
SD-13162	Cultural Land Planning and Research	2010	The 1939 Life House 6025 Waverly House La Jolla, California	Outside
SD-13163	IS Architecture	2010	Historical Resources Board Nomination for the William F. Wahrenberger/J.A. and Amry B. Smith Residence	Outside
SD-13166	Kathleen A. Crawford	2011	7124 Olivetas Avenue, La Jolla, CA 92037	Outside
SD-13333	Recon Environmental	2008	Results of Historical Resources Survey of the Alvarado Apartments Project, San Diego, California	Outside
SD-13470	IS Architecture	2011	Historical Resources Board Nomination for Eason/Cliff May Residence, 4777 Avion Way San Diego, California 92115	Outside
SD-14013	Trileaf	2011	Verizon–El Cajon and College CA–Trileaf Project No. 351800	Outside
SD-14085	ASM Affiliates Inc.	2009	Historic Resource Inventory and Evaluation for the San Diego State University Plaza Linda Verde Project, San Diego, California	Outside
SD-14238	Michael Brandman Associates	2013	Cultural Resource Records Search and Site Visit Results for Sprint Nextel Candidate SD34XC524 (SDSU Foundation), 5250 Campanile Drive, San Diego, San Diego County, California	Outside

Table 1. Previous Technical Studies within 1 Mile of the Project Area

SCIC Report No.	Publisher	Date	Title	Proximity
SD-13823	Heritage Resources	1997	National Register of Historic Places Nomination San Diego State College Historic District San Diego, California	Outside
SD-14427	Ace Environmental Inc.	2012	Cultural Resource Records Search and Site Survey AT&T Site SD0775 Montezuma (Cox Arena) 5505 Montezuma Road San Diego, San Diego County, California 92115	Outside
SD-14661	City of San Diego	2013	Campus Center Apartments	Outside
SD-13121	City of San Diego	2011	Montezuma Trunk Sewer	Outside
SD-14808	Brian F. Smith and Associates Inc.	2014	Cultural Resource Monitoring Report for the Montezuma Trunk Sewer Project City of San Diego	Outside
SD-14808	Brian F. Smith and Associates Inc.	2014	Cultural Resource Monitoring Report for the Montezuma Trunk Sewer Project City of San Diego	Outside
SD-14740	City of San Diego	2014	Sewer Group Job 743	Outside
SD-15058	Laguna Mountain Environmental	2009	Cultural Resource Monitoring Report for The Block 3FF Talmadge Utility Undergrounding Project, City of San Diego, California	Outside
SD-15077	Environmental Assessment Specialists Inc.	2014	Cultural Resources Records Search Results for T-Mobile West, LLC Candidate SD06026a (SD026 SDSU Physical Plant) 5300 Campanile Drive, San Diego, San Diego County, California	Outside
SD-15078	Environmental Assessment Specialists Inc.	2014	Direct APE Historic Architectural Assessment for T-Mobile West, LLC Candidate Sd06026a (SD026 SDSU Physical Plant) 5300 Campanile Drive, San Diego, San Diego County, California	Outside
SD-15093	Environmental Assessment Specialists Inc.	2014	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SD06417a (SD417 SDSU Recital Hall) 5500 Campanile Drive, San Diego, San Diego County, California	Outside
SD-15102	Environmental Assessment Specialists Inc.	2014	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SD06702a (SD702 Alliance for Africa), 5952 El Cajon Boulevard, San Diego, San Diego County, California	Outside

Table 1. Previous Technical Studies within 1 Mile of the Project Area

SCIC Report No.	Publisher	Date	Title	Proximity
SD-15304	Brian F. Smith and Associates Inc.	2015	Cultural Resource Monitoring Report for the Sewer Group 549 Project (Part of Group 3016) City of San Diego	Outside
SD-15058	Laguna Mountain Environmental	2009	Cultural Resource Monitoring Report for The Block 3ff Talmadge Utility Undergrounding Project, City of San Diego, California	Outside
SD-15077	Environmental Assessment Specialists Inc.	2014	Cultural Resources Records Search Results for T-Mobile West, LLC Candidate SD06026a (SD026 SDSU Physical Plant) 5300 Campanile Drive, San Diego, San Diego County, California	Outside
SD-15078	Environmental Assessment Specialists Inc.	2014	Direct APE Historic Architectural Assessment for T-Mobile West, LLC Candidate SD06026a (SD026 SDSU Physical Plant) 5300 Campanile Drive, San Diego, San Diego County, California	Outside
SD-15093	Environmental Assessment Specialists Inc.	2014	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SD06417a (SD417 SDSU Recital Hall) 5500 Campanile Drive, San Diego, San Diego County, California	Outside
SD-15102	Environmental Assessment Specialists Inc.	2014	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SD06702a (SD702 Alliance for Africa), 5952 El Cajon Boulevard, San Diego, San Diego County, California	Outside
SD-15109	Environmental Assessment Specialists Inc.	2014	Direct APE Historic Architectural Assessment for T-Mobile West, LLC Candidate SD06417a (SD417 SDSU Recital Hall) 5500 Campanile Drive, San Diego, San Diego County, California	Outside
SD-15893	ESA	2013	Direct APE Historic Architectural Assessment for T-Mobile West, LLC Candidate SD06702a (SD702 Alliance for Africa), 5952 El Cajon Boulevard, San Diego, San Diego County, California	Outside
SD-15910	City of San Diego Planning Department	2014	Draft Programmatic Environmental Impact Report for the Grantville Focused Plan Amendment	Outside
SD-15911	ASM Affiliates	2014	Historic Resources Reconnaissance Survey for Grantville Focused Plan Amendment, Grantville, San Diego, San Diego County, California	Outside

Table 1. Previous Technical Studies within 1 Mile of the Project Area

SCIC Report No.	Publisher	Date	Title	Proximity
SD-15912	ASM Affiliates	2013	Cultural Resources Technical Report for the Grantville Focus Plan Amendment, San Diego, California	Outside
SD-15928	Unknown	2014	Nomination for Historic Designation Martin and Enid Gleich/Henry Hester & Ronald K. David House	Outside
SD-16623	Brian F. Smith and Associates	2016	Phase I Cultural Resource Survey for the Del Cerro Project City of San Diego Project No. 435483 APN 463-010-10	Outside

Previously Recorded Cultural Resources

A total of 17 previously recorded cultural resources are within 1 mile of the project area. The resources consist of 11 historic-age built environment resources, four prehistoric sites and/or isolates, and two historical sites (Table 2). One historic-age built environment resource, the Aztec Bowl (P-37-013708/CA-SDI-13717H), intersects the project area and is described in detail below.

Table 2. Previously Recorded Cultural Resources within 1 Mile of the Project Area

Primary Number (P-37-)	Trinomial (CA-SDI-)	Period	NRHP/CRHR Status	Recorded By/Year	Description	Proximity
009899	9899	Prehistoric	7R (identified in reconnaissance level survey: not evaluated)	Kidder/Miller, CRM Center, Dept. of Anthropology, SDSU (1984)	Portable metate	Outside
028224	15556	Prehistoric	7R (identified in reconnaissance level survey: not evaluated)	J. H. Cleland and L. Lilburn, KEA Environmental (1999); Brian Williams, ASM Affiliates Inc. (2009; Update)	Lithic and shell scatter	Outside
028223	18326	Prehistoric	7 (not evaluated for NRHP or CRHR or needs revaluation)	Larry J. Pierson, Brian F. Smith & Assoc. (2007)	Bedrock milling feature	Outside
029023	18589	Historic	7R (identified in reconnaissance level survey: not evaluated)	Andrew Pigniolo, Laguna Mountain Environmental Inc. (2007)	Refuse scatter	Outside

Table 2. Previously Recorded Cultural Resources within 1 Mile of the Project Area

Primary Number (P-37-)	Trinomial (CA-SDI-)	Period	NRHP/CRHR Status	Recorded By/Year	Description	Proximity
013708	13717H	Historic	1CL (automatically listed in the CRHR)	Corey Cashmere, SDSU (1994	Aztec Bowl (football stadium)	Intersects
015591	—	Prehistoric	7R (identified in reconnaissance level survey: not evaluated)	L. Tift, Gallegos & Associates (1996)	Quartzite core	Outside
017254	—	Historic	6Z (found ineligible for NRHP, CRHR, or local designation through survey evaluation)	Scott A. Moomian	Apartment building constructed in 1947	Outside
025491	—	Historic	7 (not evaluated for NRHP or CRHR or needs revaluation)	Larry J. Pierson, Brian F. Smith & Associates (2003)	Two-story apartment house constructed in 1948	Outside
025492	—	Historic	7 (not evaluated for NRHP or CRHR or needs revaluation)	Larry J. Pierson, Brian F. Smith & Associates (2003)	One-story single family dwelling; construction date unknown; listed in City Directory Householder's list between 1945 and 1950	Outside
027607	—	Historic	6Z (found ineligible for NRHP, CRHR, or local designation through survey evaluation)	Office of Marie Burke Lia (2006)	Property contains two structures: motel constructed in ca. 1945 and an apartment building constructed in 1968	Outside
027710	—	Historic	6Z (found ineligible for NRHP, CRHR, or local designation through survey evaluation)	Office of Marie Burke Lia (2006)	Property contains two structures: motel constructed in ca. 1945 and an apartment building constructed in 1968	Outside

Table 2. Previously Recorded Cultural Resources within 1 Mile of the Project Area

Primary Number (P-37-)	Trinomial (CA-SDI-)	Period	NRHP/CRHR Status	Recorded By/Year	Description	Proximity
032674	20702	Historic	7R (identified in reconnaissance level survey: not evaluated)	N. Brodie, Laguna Mountain Environmental Inc. (2007)	Refuse scatter	Outside
035445	—	Historic	6Z (found ineligible for NRHP, CRHR, or local designation through survey evaluation)	K.A. Crawford, Crawford Historic Services (2013)	SDSU Physical Plant building constructed in 1962	Outside
035449	—	Historic	6Z (found ineligible for NRHP, CRHR, or local designation through survey evaluation)	K. A. Crawford, Crawford Historic Services (2013)	SDSU Recital Hall constructed ca. 1969	Outside
035560	—	Historic	6Z (found ineligible for NRHP, CRHR, or local designation through survey evaluation)	K. A. Crawford, Crawford Historic Services (2013)	Two-story commercial building constructed in ca. 1940	Outside
035594	—	Historic	3S/3CS (appears eligible for NRHP/CRHR as an individual property through survey evaluation)	Allen Hazard and Janet O'Dea (2014)	Martin & Enid Gleich/Henry Hester & Ronald K. Davis House constructed in 1957	Outside
035655	—	Historic	3S/3CS (appears eligible for NRHP/CRHR as an individual property through survey evaluation)	Allen Hazard and Janet O'Dea (2015)	George and Iris Goodman/Rex Lotery House constructed in 1968	Outside

NRHP = National Register of Historic Places; CRHR = California Register of Historical Resources.

The Aztec Bowl

The Aztec Bowl is a football stadium constructed in 1936 within the SDSU campus. The sports structure, constructed of cobblestone and concrete, is situated at the head of an excavated natural canyon, giving it a horseshoe shape with an open-air layout. The Aztec Bowl was constructed as part of the New Deal under the WPA, and its construction provided work for local residents during the Great Depression. Since then, the structure has gone through a series of alterations through the years with the installation of electric lighting in 1939 and the expansion of bleachers in 1948. In 1983, a 10-ton granite boulder monument was placed at the north end of the stadium identifying it as State Historical Landmark No. 798 to commemorate President John F. Kennedy's speech at the 1963 commencement ceremony, in which the then president was awarded the first honorary doctorate ever presented on behalf of the entire California State College system. The stadium was identified during a reconnaissance survey on June 8, 1994, and was noted to be in fair condition due to visible structural cracks and vandalism. The stadium was not evaluated for the NRHP or CRHR during that survey. The Aztec Bowl was nominated for NRHP inclusion and recommended locally significant on March 30, 1994; was entered into the NRHP by the keeper on May 19, 1994; and was de-listed on May 30, 2012.

3.2 Building Research

The process of evaluating each building for historic significance requires conducting background research on each building to understand its historic context and any changes that have occurred over time. Background research involved a review of the existing San Diego Modernism Historic Context Statement (City of San Diego 2007), which was developed to be a useful tool in understanding the history and development of modern era (1935–1970) buildings and structures in the City, and ultimately to aid in evaluating their relative historic significance and value. Dudek also made extensive use of the SDSU Library's online digital collections, which provide an important collection of historic campus newspapers, annuals, photographs, and other documents that tell the story of the development and growth of SDSU from its early beginnings to the present day. Finally, SDSU granted Dudek access to its building records via its internal Facilities Information System, which maintains historic plan sets and data for each building on campus. This proved to be a valuable resource for assessing alterations that have been made to the buildings and structures over time, and confirmed the original dates of construction.

3.3 Historical Resources Survey

Dudek architectural historians Kara R. Dotter, MS, MSHP, and Nicole Frank, MSHP, conducted an intensive-level survey of the proposed project area on September 19, 2018. The purpose of the survey was to identify, record, and evaluate all historic built-environment resources more than 45 years old located within the proposed project area. During the survey, Ms. Dotter and Ms. Frank examined and photographed all built-environment resources (i.e., buildings, structures, and objects) located within the proposed project area.

Dudek documented the survey-associated work using field notes, digital photography, close-scale field maps, and aerial photographs. Photographs of the project area were taken with a Canon EOS Ti5 digital camera with 20 megapixels and equipped with an 18 mm–55 mm IS STM Canon lens, as well as a Sony DSC-W180 digital camera with 20 megapixels and 5× optical zoom. Because of privacy concerns, all field notes, photographs, and records related to the current survey are on file at Dudek.

4 Existing Conditions

This chapter includes a description of the relevant regulatory environment, the existing cultural resources setting, and the results of background research undertaken to better understand the existing conditions on the project site and in the vicinity.

4.1 Regulatory Setting

This section includes a discussion of the applicable state and local laws, ordinances, regulations, and standards governing cultural resources, which must be adhered to before and during construction of the proposed project.

4.1.1 State

As summarized below, the treatment of cultural resources is governed by state and local laws and regulations. There are specific criteria for determining whether prehistoric and historic sites or objects are significant and/or protected by law. For instance, state significance criteria generally focus on the resource's integrity and uniqueness, its relationship to similar resources, and its potential to contribute important information to scholarly research. As a whole, the laws and regulations seek to mitigate impacts on significant prehistoric or historic resources.

California Register of Historical Resources

In California, the term "historical resource" includes but is not limited to "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (California Public Resources Code, Section 5020.1(j)). In 1992, the California legislature established the CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (California Public Resources Code, Section 5024.1(a)). A resource is eligible for listing in the CRHR if the State Historical Resources Commission determines that it is a significant resource and that it meets any of the following criteria:

1. Associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. Associated with the lives of persons important in California's past.
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. Yielded, or may be likely to yield, information important in prehistory or history.

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys (California Public Resources Code, Section 5020 et seq.).

California Environmental Quality Act

As described further below, the following California Environmental Quality Act (CEQA) statutes (California Public Resources Code, Section 21000 et seq.) and CEQA Guidelines (14 CCR 15000 et seq.) are of relevance to the analysis of archaeological and historic resources:

- California Public Resources Code, Section 21083.2(g): Defines "unique archaeological resource."
- California Public Resources Code, Section 21084.1, and 14 CCR 15064.5(a): Defines historical resources. In addition, 14 CCR 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource"; it also defines the circumstances when a project would materially impair the significance of an historical resource.
- California Public Resources Code, Section 5097.98, and 14 CCR 15064.5(e): Set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated cemetery.
- California Public Resources Code, Sections 21083.2(b) and 21083.2(c), and 14 CCR 15126.4: Provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures. Preservation in place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (California Public Resources Code, Section 21084.1; 14 CCR 15064.5(b)). If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of California Public Resources Code, Section 5024.1(q)), it is a "historical resource" and is presumed to be historically or culturally significant for CEQA purposes (California Public Resources Code, Section 21084.1; 14 CCR 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (California Public Resources Code, Section 21084.1; 14 CCR 15064.5(a)).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (14 CCR 15064.5(b)(1); California Public Resources Code, Section 5020.1(q)). In turn, per 14 CCR 15064.5(b)(2), the significance of an historical resource is materially impaired when a project:

(A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

(B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(C) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for CEQA purposes.

Pursuant to these sections, the CEQA evaluation involves a determination of whether a project site contains any "historical resources," followed by assessing whether that project would cause a substantial adverse change in the significance of an historical resource such that the resource's historical significance is materially impaired.

Under CEQA, an environmental document is required to evaluate any impacts on unique archaeological resources (California Public Resources Code, Section 21083.2). A "unique archaeological resource" is defined (California Public Resources Code, Section 21083.2(g)) as:

> [A]n archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> 1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
> 2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
> 3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

An impact to a non-unique archaeological resource is not considered a significant environmental impact, and such non-unique resources need not be further addressed in the environmental document (California Public Resources Code, Section 21083.2(a); 14 CCR 15064.5(c)(4)).

CEQA Guidelines, Section 15064.5, assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in California Public Resources Code, Section 5097.98.

4.1.2 Local

City of San Diego

Although California State University (CSU), as a state agency, and SDSU are not subject to local planning and zoning laws and therefore are not required to follow the City's historical resources evaluation protocol, this guidance remains helpful and advisory given its applicability to the San Diego built environment. The Historical Resources Guidelines of the City's Land Development Manual identifies the criteria under which a resource may be historically designated. It states that any improvement, building, structure, sign, interior element and fixture, site, place, district, area, or object may be designated a historical resource by the City Historical Resources Board if it meets one or more of the following designation criteria:

a. Exemplifies or reflects special elements of the City's, a community's or a neighborhood's historical, archaeological, cultural, social, economic, political, aesthetic, engineering, landscaping or architectural development;
b. Identified with persons or events significant in local, state or national history;
c. Embodies distinctive characteristics of a style, type, period or method of construction or is a valuable example of the use of indigenous materials or craftsmanship;

d. Is representative of the notable work of a master builder, designer, architect, engineer, landscape architect, interior designer, artist or craftsman;
e. Is listed or has been determined eligible by National Park Service for listing on the National Register of Historic Places or is listed or has been determined eligible by the State Historical Preservation Office for listing on the State Register of Historical Resources; or
f. Is a finite group of resources related to one another in a clearly distinguishable way or is a geographically definable area or neighborhood containing improvements which have a special character, historical interest or aesthetic value or which represent one or more architectural periods or styles in the history and development of the City.

The designation and preservation of the City's historic resources is a primary goal of the Historic Preservation Element of the City's Draft General Plan (2015). In 2007, the City prepared the San Diego Modernism Historic Context Statement for consideration of its modern resources (ca. 1935–1970). The report details the background of social and economic history, development patterns, and artistic and cultural trends that define the modern era in San Diego. This Context Statement was used to evaluate the two modern-age resources included in the current study, and used to consider each building's historic significance at the local level.

4.2 Historic Context

San Diego State University

SDSU was founded on March 13, 1897, as the San Diego Normal School, a training facility for elementary school teachers. On November 1, 1898, 91 students registered for the first day of class above the One Cent Novelty Store downtown. The curriculum consisted of just three courses: English, math, and history. One month after the Normal School opened, a cornerstone for the school's new location was laid on a 17-acre site located at the corners of Park and El Cajon Boulevards (Figure 3). At the time, many people complained that the location was too remote and the size too large, and doubted that a city of less than 20,000 would ever support a school for 600 teachers. The first class of students consisted of 225 students, and on June 21, 1900, 26 of those students became the school's first graduates (Roberts 1962). Additional courses were quickly developed under the leadership of Samuel T. Black, who served as the school's first president from 1898 to 1910 (SDSU 2018).

President Hardy had a vision of the campus arranged as cloisters of a Spanish monastery, and viewed the new college as a social and artistic achievement. His vision for the campus was ultimately brought to fruition by California Public Works Department Architect Howard Spencer Hazen, who shared Hardy's vision of a "monastic university." Hazen incorporated both Christian and Moorish architectural styles of the medieval period known as Mudejar. He also incorporated elements of Gothic style architecture. By February 1931, the original six Spanish-Moorish style buildings were complete (Figure 5), including the Academic Building, the Library and Campanile, the Little Theater, the Teacher Training School Building, the Science Building, and the Power House Building. Despite financial constraints brought on by the Great Depression, allocated donations and support from the Works Progress Administration (WPA) allowed for completion of six additional buildings that were integral to the campus's core: the Student's Club in 1931, Scripps Cottage for Women in 1931, the Dual Gymnasium in 1934, the Aztec Bowl in 1936, the Greek Bowl in 1941, and the Music Building in 1942. Taken together with the original campus landscape, including the 100 concrete-and-wood WPA-constructed benches, and Donald Hord's 1941 statue of "the Aztec," these elements make up the San Diego State College Historic District (Wade et al. 1997).

Radical changes came to campus in 1935 when Hardy was replaced as president by Dr. Walter R. Hepner, ending Hardy's 25-year legacy on campus. That same year, San Diego State Teacher's College became San Diego State College (SDSC) by an act of the state legislature that allowed for expansion of degree programs beyond teacher education. In the fall of 1937, enrollment increased by nearly 100%. By 1939, appropriations were made for construction of a Greek-type open-air theater, and by 1941, the Greek Bowl was complete (Stalnaker 1962).

When President Franklin D. Roosevelt announced that the United States was getting involved in World War II in 1941, Dr. Hepner declared that any student volunteering for military service, male or female, could drop out of school and get full credit for classes that semester. In the end, over 3,000 former students, graduates, and faculty members participated in World War II, and 135 lost their lives. In 1939, student enrollment was at its highest point in history at 2,400 students. The number of students dropped to 800 in 1944 (Stalnaker 1962). When the war was over in 1945, enrollment exploded once again.

In September 1946, the Aztec newspaper published an article about some of the post-war changes happening on campus, which included a program for creating new temporary office and classroom space to support the large number of students who had registered for fall classes (Aztec 1946). The article goes on to describe that 21 of these 23 buildings are steel-fabricated, measuring 20 by 48 feet, and that the other two are Quonset huts measuring 40 by 100 feet. By the 1950s, the campus had a sea of temporary buildings, known as "T-shacks," to provide much-needed classroom space (Figure 6).

Many changes occurred on campus in the 1950s. As the campus reached record enrollment numbers in 1950, SDSC moved forward with the construction of new permanent facilities, including the Art Building, which was built for $350,000 and dedicated in May. In November of that same year, groundbreaking ceremonies were held for the new campus laboratory and science buildings. In fall of 1951, the U.S. Air Force Reserve Officers' Training Corps program was underway at SDSC, which allowed students to pursue their regular classes in the field of their choice. In spring of 1952, Dr. Hepner officially stepped down from his role as president of SDSC, and Dr. Malcolm A. Love was inaugurated as the new president. In 1954, President Love asked the state for a $30 million expansion program that would include construction of a new Education Building, a Humanities–Social Science classroom building, a Home Economic Center, and other new facilities. Many of the projects Love proposed would go on to be approved by the state.

By the mid-1950s, the campus was caught up in U.S. Cold War politics when Dr. Harry Steinmetz was fired under the Luckel Act for refusing to answer the State Personnel Board on whether he was a member of the communist party (Stalnaker 1962). Fearful that the Soviet Union was winning the Cold War after launching the Sputnik satellite in 1957, the United States increased its focus and spending on education. Perhaps no other university system in the world felt these political changes more than California's in the 1950s. San Diego's own major Cold War industries (such as Convair, General Atomics, and the Scripps Institution) also supported the growth of higher education by encouraging the development of "a world class science and engineering graduate school in the La Jolla area" (City of San Diego 2007, p. 47). This dream of development came to fruition in 1960 when the University of California, San Diego, was established.

By the late 1950s, SDSC enrollment had reached over 12,000 students and the campus saw rapid expansion with completion of the Humanities–Social Science Building, the library addition, five dormitories, a Chemistry–Geology Building, an addition to the Administration Building, a new men's gymnasium, an addition to Health Services, an addition to the Commons, a new Industrial Arts Building, and a new Engineering Laboratory and Industrial Technology Building.

By 1960, SDSC became part of the new California State College system, currently known as the California State University system. In 1963, just months before his assassination, President John F. Kennedy gave the commencement speech at SDSC and received not only the college's first honorary doctorate degree, but also the first to be issued by the California State College system. By the early 1970s, SDSC officially became SDSU after legislative approval (SDSU 2018a).

Aztec Recreation Center (1997)

The architectural firm of BSHA designed the Aztec Recreation Center in 1997. The building is roughly T-shaped in plan, and, although one story tall, the massing is taller due to the functionality requirements of the interior spaces. The northern section, corresponding to the top of the T-shape, contains one large gymnasium with telescoping bleachers at the western end. The building transitions into the southern section internally through a foyer, then a central gallery flanked by men's and women's changing facilities, before reaching a mirrored pair of gymnasiums separated by the central gallery. The gallery continues southward, dividing the next space into a weight room and multi-purpose room, before reaching the main entrance to the building. The main entrance area contained the reception and registration area, an open office area, a TV lounge, two storage rooms, and a laundry and first aid room (SDSU 2018b).

The building is a utilitarian structure, reflecting its function in outward form: lower sections containing rooms and offices with split-face concrete block exterior transitioning to taller, stucco-clad sections housing the gymnasiums. Fenestration is irregular, consisting of fixed square windows and double-leaf glass-and-metal doors, and is constrained to the lower concrete-block sections of the building.

In 2001, the main entrance area was remodeled. The new layout, designed by MDWF Architects, demolished the original angled entrance to create a larger central lobby flanked to either side by a membership desk and an administration desk. On the side of the membership area is a work station, two offices, a resource room, an expanded laundry room, a storage area, and a space designated as Aztecs Adventures. On the side of the administration area is a wellness room, a training room, 11 offices, a workroom, am open clerical area, a server room, and a storage room (SDSU 2018b).

Arena Meeting Center (1997)

The Arena Meeting Center, formerly known as the Ticket Building, is a small building situated off the southwest corner of the Aztec Recreation Center that was built in 1997. Also designed by BSHA as part of the Aztec Recreation Center and Arena Stadium project, the one-story building was constructed using the same split-face concrete block as that employed on the Aztec Recreation Center. The original design called for eight pass-through ticket windows with bulletproof glazing, at least three exterior glass display cases, and one hollow metal entry door. The Ticket Building also was remodeled in 2001, altering the use and interior arrangement, at which time it became known as the Arena Meeting Center. The Arena Meeting Center now contains five rooms and serves as a meeting facility for associated students, staffers, and administrators (SDSU 2018c).

Aztec Bowl (1936)

The Aztec Bowl is situated to the east of and adjacent to the existing Aztec Recreation Center. The Aztec Bowl was completed in 1936. It was reportedly designed by the California State Architect George B. McDougall, and is in the Spanish Colonial Revival style (Kelley-Markham 1994). Various sources of funding were secured to develop the Aztec Bowl. The first grant, consisting of $260,000, was given in 1933 to cover the excavation, leveling, filling, and reshaping of the canyon site, with a second grant of $216,863 awarded to complete the project (Starr 1995). In addition, the Aztec Bowl was the first project funded by the WPA in San Diego. The project provided work for approximately 300–700 men, and was the only stadium built on a college campus in California (Christenson et al. 2005). The stadium was completed in 1936, and was dedicated on October 3, 1936, in front of a crowd of 7,500 people attending the first football game held in the new stadium, where SDSU defeated Occidental College (Starr 1995). Future plans included expanding the Aztec Bowl to hold up to 45,000 people, but the only expansion to the original design was an additional 5,000 seats in tiers above the original seats added in 1948, bringing the total seating capacity to 10,000 people (Christenson et al. 2005; SDSU 2018d). On June 6, 1963, President John F. Kennedy gave the SDSU commencement address in front of approximately 30,000 people crammed into and around the stadium, also receiving the first-ever honorary doctorate granted by the California State College system (Kelley-Markham 1994). The SDSU Aztecs football team moved from the Aztec Bowl to Jack Murphy Stadium upon its completion in 1967. However, the Aztec Bowl continued to serve as a sports arena, mainly for soccer games. Two years later, in 1969, the stadium hosted the first SDSU music festival, presented by the Cultural Arts Board and featuring, among others, Canned Heat, Santana, and the Grateful Dead (SDSU 2013). The Aztec Bowl continued to serve as a music venue well into the 1980s, hosting popular bands such as The Police and Oingo Boingo (SDU 1983).

In 1994, the Aztec Bowl was listed in the NRHP as part of an effort to preserve the structure from the threat of development. However, by 1996 funds were approved and construction begun on a new sports arena, initially named the Student Activities Center, then known as Cox Arena, and later renamed Viejas Arena, sited within the southern half of the original Aztec Bowl (Starr 1995). The Aztec Bowl was officially delisted from the NRHP on May 30, 2012, but it remains listed on the CRHR for its association with President John F. Kennedy.

Exercise and Nutritional Sciences Building (1933)

The Exercise and Nutritional Sciences building is located east of the Aztec Bowl, and north of and adjacent to the planned construction staging area for the proposed project. Previously known as the Dual Gymnasium, the Exercise and Nutritional Sciences building was completed in 1933. The building was designed by architect Howard Spencer Hazen in the Spanish Colonial Revival style, and is one of 12 buildings included within the San Diego State College Historic District (Christenson et al. 1997). However, it is not listed on the NHRP or CRHR.

5 Impact Analysis and Conclusions

The CEQA Guidelines, Section 15332, Exemptions for In-Fill Development Projects, would apply to the proposed project. With respect to historical resources, the following condition of CEQA Guidelines, Section 15300.2, Exemptions, is relevant:

(f) Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.

The treatment of historical resources, if found, is governed by state and local laws and regulations, and there are specific criteria for determining whether a historical resource is significant and/or protected by law. A resource is eligible for listing in the CRHR if the State Historical Resources Commission determines that it is a significant resource and it meets any of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. Is associated with the lives of persons important in our past.
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. Has yielded, or may be likely to yield, information important in prehistory or history.

Likewise, the Historical Resources Guidelines of the City's Land Development Manual identify the criteria under which a resource may be historically designated. The guidelines state that any improvement, building, structure, sign, interior element and fixture, site, place, district, area, or object may be designated a historical resource by the City Historical Resources Board if it meets one or more of the following designation criteria:

a. Exemplifies or reflects special elements of the City's, a community's or a neighborhood's historical, archaeological, cultural, social, economic, political, aesthetic, engineering, landscaping or architectural development;
b. Identified with persons or events significant in local, state or national history;
c. Embodies distinctive characteristics of a style, type, period or method of construction or is a valuable example of the use of indigenous materials or craftsmanship;
d. Is representative of the notable work of a master builder, designer, architect, engineer, landscape architect, interior designer, artist or craftsman;
e. Is listed or has been determined eligible by National Park Service for listing on the National Register of Historic Places or is listed or has been determined eligible by the State Historical Preservation Office for listing on the State Register of Historical Resources; or
f. Is a finite group of resources related to one another in a clearly distinguishable way or is a geographically definable area or neighborhood containing improvements which have a special character, historical interest or aesthetic value or which represent one or more architectural periods or styles in the history and development of the City.

Although CSU, as a state agency, and SDSU are not required to follow the City's historical resources evaluation guidelines, this guidance may be helpful in reaching a significance determination given its applicability to the San Diego built environment.

5.2 Impact Analysis

The survey conducted as part of this report did not identify any historic-age buildings within the proposed project area.

5.2.1 Project Footprint

Within the project footprint, two extensions to the existing Aztec Recreation Center would be added: one on to the north elevation and another to the south elevation. The south extension would necessitate demolition of the Arena Meeting Center. This section provides a physical description, background information, and a formal evaluation of historic and architectural significance and integrity for the Aztec Recreation Center and the Arena Meeting Center buildings.

Aztec Recreation Center

As noted above, the changes to the Aztec Recreation Center would consist of extensions to the north and south elevations. The building is roughly T-shaped in plan, and, although one story tall, the massing is taller due to the functionality requirements of the interior spaces. The northern section, corresponding to the top of the T-shape, contains one large gymnasium with telescoping bleachers at the western end. The building transitions into the southern section internally through a foyer, then a central gallery flanked by men's and women's changing facilities, before reaching a mirrored pair of gymnasiums separated by the central gallery. The gallery continues southward, dividing the next space into a weight room and multi-purpose room, before reaching the main entrance to the building. The main entrance area contained the reception and registration area, an open office area, a TV lounge, two storage rooms, and a laundry and first aid room (SDSU 2018b).

In 2001, the main entrance area was remodeled. The new layout, designed by MDWF Architects, demolished the original angled entrance to create a larger central lobby flanked to either side by a membership desk and an administration desk. On the side of the membership area is a work station, two offices, a resource room, an expanded laundry room, a storage area, and a space designated as Aztecs Adventures. On the side of the administration area is a wellness room, a training room, 11 offices, a workroom, am open clerical area, a server room, and a storage room (SDSU 2018b).

The building is a utilitarian structure, reflecting its function in outward form: lower sections containing rooms and offices with split-face concrete block exterior transitioning to taller, stucco-clad sections housing the gymnasiums. Fenestration is irregular, consisting of fixed square windows and double-leaf glass-and-metal doors, and is constrained to the lower concrete-block sections of the building.

Arena Meeting Center

The Arena Meeting Center, formerly known as the Ticket Building, is a small building situated off the southwest corner of the Aztec Recreation Center that was built in 1997. Also designed by BSHA as part of the Aztec Recreation Center and Arena Stadium project, the one-story building was constructed using the same split-face concrete block as that employed on the Aztec Recreation Center. The original design called for eight pass-through ticket windows with bulletproof glazing, at least three exterior glass display cases, and one hollow metal entry door. The Ticket Building also was remodeled in 2001, altering the use and interior arrangement, at which time it became known as the Arena Meeting Center. The Arena Meeting Center now contains five rooms and serves as a meeting facility for associated students, staffers, and administrators (SDSU 2018c).

Architect

The architectural firm of BSHA designed both the Aztec Recreation Center and the Arena Meeting Center in 1997. The company, formerly known as Buss Silvers Hughes & Associates, was founded in 1977. The firm reached its largest size in the mid-1980s, employing 120 people and having satellite offices in Arizona and Colorado. By 1990, the firm drastically scaled down to only 75 staff (Sutro 1990). Gordon Carrier and Michael Johnson took over the company and changed the name to Carrier Johnson. Recently changing their name to CarrierJohnson + Culture, the firm now has offices in San Diego, Los Angeles, and New York City (CJC 2018). It was during the transition from the original principals of BSHA to the new principals of CarrierJohnson + Culture that the Aztec Recreation Center and the Arena Meeting Center were designed and constructed. The new firm has several large-scale education projects, including the Pitzer College Robert Redford Conservancy; Point Loma Nazarene University Prescott Chapel and Science Center; and the University of California, San Diego, Village at Torrey Pines East. Each of these projects boasts strong, clean modern lines; varied building massing; and angular forms with abundant use of glazing, a far cry from the modest utilitarian concrete-block structures represented by the Aztec Recreation Center and Arena Meeting Center buildings.

CRHR Criteria Analysis

Because the Aztec Recreation Center and the Arena Meeting Center buildings were designed by the same firm, share similar design features and construction materials, and were constructed as part of the same project, the criteria analysis discussion addresses both buildings.

1. ***Is the resource associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage?***

   Evaluation of the Aztec Recreation Center and the Arena Meeting Center buildings considered state and local eligibility criteria. Archival research on the buildings failed to indicate any associations with important events or patterns of development. Therefore, the Aztec Recreation Center and the Arena Meeting Center do not appear eligible for listing under CRHR Criterion 1.

2. ***Is the resource associated with the lives of persons important in our past?***

   Additionally, archival research failed to uncover any association with persons important to our past, and therefore the Aztec Recreation Center and the Arena Meeting Center do not appear eligible for listing under CRHR Criterion 2.

3. ***Does the resource embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values?***

   The Aztec Recreation Center and the Arena Meeting Center are simple, unpretentious, utilitarian buildings that are not exceptional examples of any particular style of architecture. Neither architectural firm (BSHA or CarrierJohnson + Culture) is included in the "Biographies of Established Masters," published by the San Diego Historical Resources Board in 2011; therefore, the buildings are not the notable work of a master architect. For these reasons, the Aztec Recreation Center and the Arena Meeting Center do not appear eligible for listing under CRHR Criterion 3.

4. ***Has the resource yielded, or may be likely to yield, information important in prehistory or history?***

   Finally, the subject buildings are unlikely to yield any information important to prehistory or history; therefore, they do not appear eligible for listing under CRHR Criterion 4.

City's Historical Resource Guidelines Criteria Analysis

- a. ***Does the resource exemplify or reflect special elements of the City's, a community's or a neighborhood's historical, archaeological, cultural, social, economic, political, aesthetic, engineering, landscaping or architectural development?***
- b. ***Is the resource identified with persons or events significant in local, state or national history?***
- c. ***Does the resource embody distinctive characteristics of a style, type, period or method of construction or is it a valuable example of the use of indigenous materials or craftsmanship?***
- d. ***Is the resource representative of the notable work of a master builder, designer, architect, engineer, landscape architect, interior designer, artist or craftsman?***
- e. ***Is the resource listed or has it been determined eligible by National Park Service for listing on the National Register of Historic Places or is it listed or has it been determined eligible by the State Historical Preservation Office for listing on the State Register of Historical Resources?***
- f. ***Is the resource a finite group of resources related to one another in a clearly distinguishable way or is it a geographically definable area or neighborhood containing improvements which have a special character, historical interest or aesthetic value or which represent one or more architectural periods or styles in the history and development of the City?***

In consideration of City-level designation criteria, the subject buildings do not appear to exemplify or reflect special elements of the City's cultural, social, economic, political, aesthetic, engineering, landscaping, or architectural development. Therefore, the buildings do not appear eligible under City Criterion A. As detailed previously in consideration of state criteria, the subject buildings are not known to be associated with any significant persons or events, and therefore do not appear eligible under City Criterion B. As stated previously, the Aztec Recreation Center and the Arena Meeting Center are simple, unpretentious, utilitarian buildings that are not exceptional examples of any particular style of architecture and do not represent the notable work of a master architect. Therefore, the buildings do not appear eligible under City Criterion C or D. The subject buildings have never been determined eligible for listing in the NRHP or CRHR and are therefore not eligible under City Criterion E. Finally, the subject buildings are not part of a historic district or group of resources and therefore do not appear to be eligible under City Criterion F.

5.2.2 Adjacent Buildings

The site of the proposed project is adjacent to the CRHR-listed Aztec Bowl, separated by a broad concrete walkway approximately 15 feet in width. Similarly, the proposed staging area is adjacent to the Exercise and Nutritional Sciences building (formerly known as the Dual Gymnasium), a contributor to the NRHP-listed San Diego State College Historic District, and is separated by a broad concrete walkway and narrow landscaping measuring approximately 20 feet in width. The buildings are not within the project footprint, nor does the proposed project include any alterations or changes to the buildings. The Aztec Bowl is adjacent to the construction site and staging area; therefore, as a best management practice, it is assumed that SDSU will demarcate the boundaries of the project area to prevent accidental disruption or damage. Given the distance between the structures and the construction limits of the ARC expansion project, impacts to these structures are not expected. As previously noted, no building in the vicinity is listed on the NRHP and the historic value of the Aztec Bowl has been diminished.

5.3 Cumulative Analysis

Potential unanticipated impacts to the integrity of historical resources may contribute to the overall regional decline in historical evidence of past peoples and/or regional events. However, in compliance with regionally accepted protocols and standards, and with commitment from SDSU to designate both the CRHR-listed Aztec Bowl and the Exercise and Nutritional Sciences building (formerly known as the Dual Gymnasium), a contributor to the NRHP-listed San Diego State College Historic District, as ESAs and abide by standards outlined in Section 5.2.1, potential cumulative impacts to historic resources would be avoided.

5.4 Conclusions

Implementation of the project, with the conditions outlined in Section 5.2.1, would result in less than significant impacts to historical resources. The proposed project would not result in impacts to historical resources. As such, the proposed project would not qualify as an Exception to the use of a Categorical Exemption, per Section 15300.2 of the CEQA Guidelines. Thus, the project would qualify for CEQA Guidelines, Section 15332, Exemptions for In-Fill Development Projects, with respect to historic resources.

Sincerely,

Kara R. Dotter, MS, MSHP
Senior Historic Preservation Specialist
and Architectural Historian

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Appendix A
CONFIDENTIAL

Records Search Results

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

ARCHEOLOGICAL SITE RECORD

Permanent Trinomial: SDi-9899 Supplement ☐

Other Number: KM-1

Agency Designation:

1. County: San Diego

2. USGS Quad: La Mesa (7.5') x (15') Photorevised 1975

3. UTM Coordinates: Zone 11 / 362690 Easting / 493940 Northing ( )

4. Township 16S Range 2W ; unsectioned ¼ of ¼ of ¼ of ¼ of Section Base (Mer.) SB ( )

5. Map Coordinates: mmS mmN (from NW corner of map) 6. Elevation 441

7. Location: At southeastern corner in unpaved area marked LOT "V" , San Diego State University and adjacent to connector road running between 55th Street and Canyon Crest drive, ( )

8. Prehistoric X Historic Protohistoric 9. Site Description: Isolated portable metate and shell scatter (shell may be introduced in fill used in construction of the parking lot) ( )

10. Area: 1 m(length)x 1 m(width) 1 m^2. Method of Determination: Visual estimation ( )

11. Depth: 10+ cm cm Method of Determination: disturbed soil area ( )

12. Features: none noted ( )

13. Artifacts: Portable metate (23cm x 20cm x 12cm) ( )

14. Non-Artifactual Constitutients: ( )

15. Date Recorded: 4/23/84 16. Recorded By: Kidder/Miller ( )

17. Affiliation and Address: CRM Center, Department of Anthropology, SDSU San Diego CA 92182 ( )

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

ARCHEOLOGICAL SITE RECORD

Permanent Trinomial: SDi-9899 / 4 (mo.) 84 (yr.)

Temporary Number:

Agency Designation:

18. Human Remains: none noted ( )

19. Site Integrity: poor, because of construction in the general area ( )

20. Nearest Water (type, distance and direction): San Diego river, 750 meters north ( )

21. Largest Body of Water within 1 km (type, distance and direction): n/a ( )

22. Vegetation Community (site vicinity): Mixed chapparal and introduced specie [Plant List ( )] ( )

23. Vegetation Community (on site): same [Plant List ( )] ( )

References for above: ( )

24. Site Soil: Conglomerate ( )

25. Surrounding Soil: same ( )

26. Geology: ( )

27. Landform: ( )

28. Slope: 5% ( )

29. Exposure: east ( )

30. Landowner(s) (and/or tenants) and Address: San Diego State University, San Diego, CA 92182 ( )

31. Remarks: ( )

32. References: ( )

33. Name of Project: ( )

34. Type of Investigation: surface survey ( )

35. Site Accession Number: Curated At: ( )

36. Photos: Taken By: ( )

37. Photo Accession Number: On File At: ( )

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

FEATURE RECORD

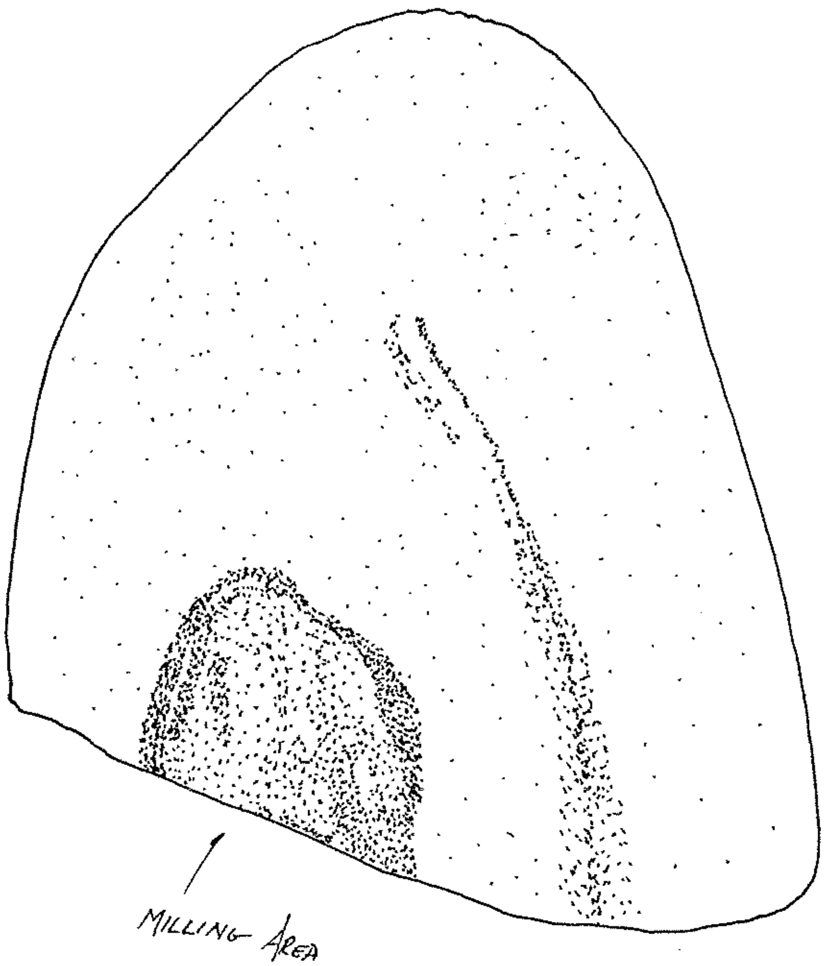
Page 3 of 4.

Permanent Trinomial: SDi-9899 / 4 84
mo. yr.

Temporary Number:

Agency Designation:

Type of Feature: Portable Metate



23 cm x 20 cm x 12 cm
W L H

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

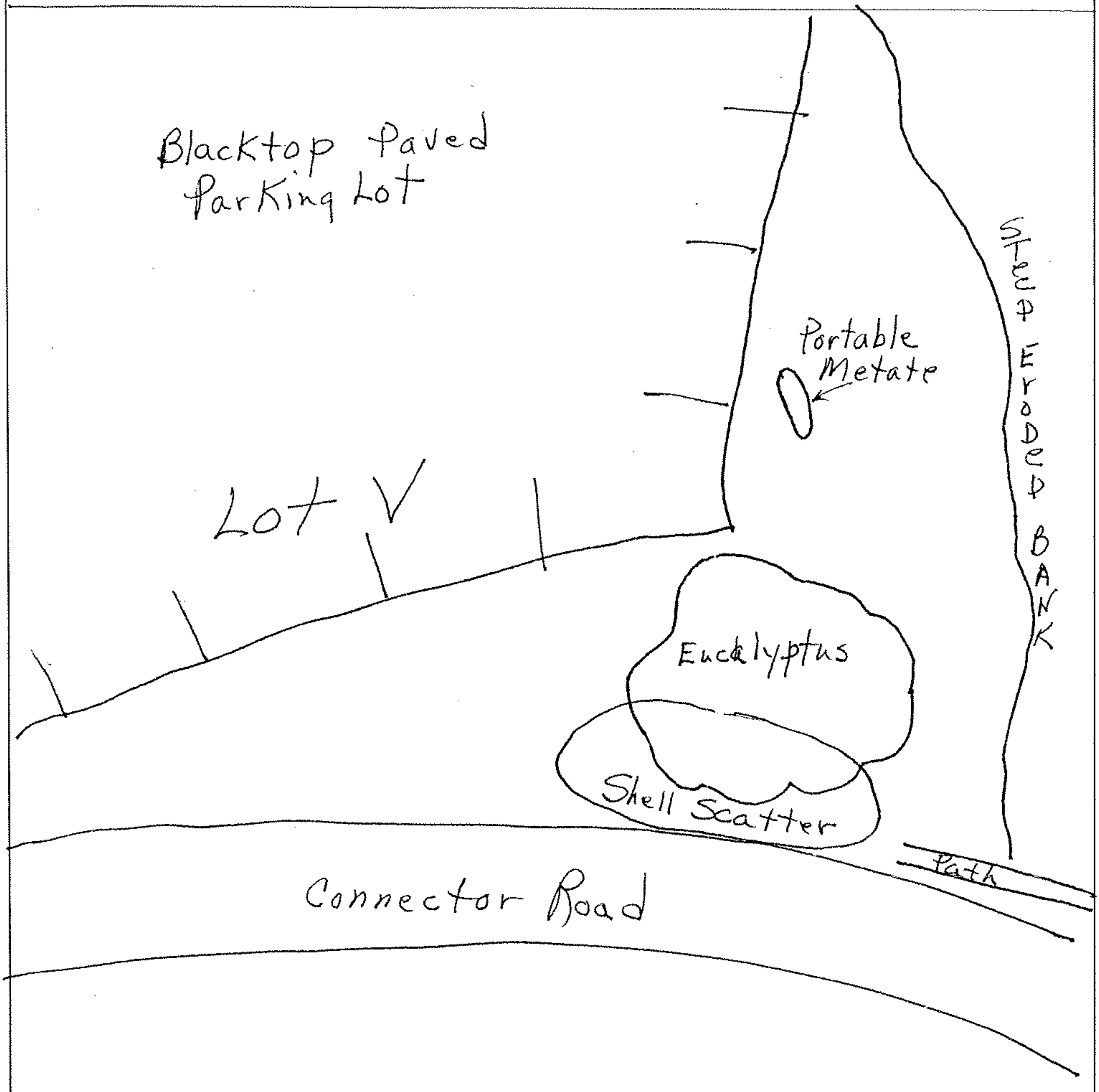
ARCHEOLOGICAL SITE LOCATION MAP

Page ______ of ______.

Permanent Trinomial: 9899 / ______ mo. yr.

Temporary Number: ______

Agency Designation: ______



DPR 422G (Rev. 8/82)


9899
SAN DIEGO
Trailer Park
OLD CLIFFS RD
Lewis Jr High Sch
Marvin Sch
Park
Library
De Anza Sch
Foster Sch
St Therese Academy
Radio Tower (KMA)
Grantville
Grantville Sch
NAVAJO
BRUNSWICK
ELGIN AVE
GALA AVE
FONTAINE
CONESTOGA
GREENBRIER AVE
ZION AVE
WARING
ELDRIDGE ROAD
CARTHAGE
BOUNTY ST
LANCE
COLLEGE AVE
DEL PASO
RIDGE MANOR AVE
WANDERMERE
PARK RIDGE BLVD
LANCASTER
ROCKHURST DR
Res
Phoebe Hearst Sch
DEL CERRO BLVD
ARNO DR
HILLGROVE DR
Del Cerro Park
SPILLWAY ELEV 541
Intake
4 LANE
Alvarado
Medical Center
CONNECTICUT AVE
CLEO ST
FALLS VIEW DR
SAN DIEGO STATE COLLEGE
Hardy Sch
REDDING
HEWLETT
YERBA ANITA DR
DROVER DR
SANTA DR
MONTEZUMA ROAD
DOROTHY DR
BAJA DR
CAMPANILE
Montezuma Sch
LA DORNA DR
SARANAC ST
Muir Sch
Hosp
AMHERST ST
Roland Park
YMCA
PO
Clay Sch
SOLITA AVE
EL CAJON BLVD
CATOCTIN
Library
Drive-in Theater
COLLIER AVE
ADAMS AVE
SEMINOLE DR
ALAMO
ROLANDO BLVD
ACORN ST
CENTER ST
TOWLR ST
Rolando Sch
Rolando Park
SAN DIEGO CORP BDY
LA MESA CORP BDY
STANFORD
HARBISON
ESTELLE
BM 589
Jackson Sch
Mann Jr High Sch
TROJAN
Cholllas
UNIVERSITY AVE
VISTA GRANDE DR
ARAGON
CELTA VISTA DR
HOFFMAN AVE
JAMES
Crawford High Sch
Hosp
Colina del Sol Park
Villa View Hosp
493
495
(NATIONAL CITY)
2549 II NE
SCALE 1:24 000

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-37-013708
HRI #
Trinomial CA-SDI-13717H
NRHP Status Code 7

Page 1 of 11

Other Listings
Review Code Reviewer Date

P1. Resource Identifier: Aztec Bowl

P2. Location: a. County San Diego **and (Address and/or UTM** Coordinates. Attach Location Map as required.)

b. Address San Diego State University

City San Diego **Zip** 92182

c. UTM: USGS Quad La Mesa **(7.5'/15') Date** 1975 ; **Zone** 11, 493100 **mE/** 3626050 **mN**

d. Other Locational Data (e.g., parcel #, legal description, directions to resource, additional UTMs, etc., when appropriate):

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries): Aztec Bowl is a cobblestone and concrete football stadium located near the Southwest corner on the campus of San Diego State University. It is situated at the head of an excavated natural canyon, which gives it a horseshoe shape that is open on the north end. There are two sets of concrete bleachers, with wooden benches, that are three hundred feet in length and form the parallel lines of the horseshoe shape of the bowl. These bleachers hold approximately 10,000 people. The southern curve of the bowl is a planted hillside that matches the slope of the bleachers. There is a grass field, without a running track, that measures 228 feet wide and approximately 450 feet in length. Above the west side bleachers there is a cobblestone restroom building and a cobblestone ditch that are contributing features to the structure. Other contributing features include: concrete bleachers, a press building, a scoreboard, stairwells, and cobblestone retaining walls. A non-contributing feature is the concession stands located on the west side of the bowl. The general condition of the bowl is fair. Several large cracks appear in the cobblestone and the wooden bleachers appear very worn.

P5. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P4. Resources Present: ☐ Building X Structure ☐ Object ☐ Site ☐ District ☐ Element of District

P6. Date Constructed/Age: ☐ Prehistoric X Historic ☐ Both
Construction completed 1936 (f)Factual

P7. Owner and Address:
CSU System
Long Beach, CA

P8. Recorded by (Name, affiliation, and address): Corey Cashmere
San Diego State University
San Diego, CA 92182

P9. Date Recorded: 8 June 1994

P10. Type of Survey: ☐ Intensive X Reconnaissance ☐ Other
Describe:

P11. Report Citation (Provide full citation or enter "none.")

Attachments: ☐NONE X Map Sheet X Continuation Sheet X Building, Structure, and Object Record ☐Linear Resource Record ☐Archaeological Record ☐District Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record X Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

MAP SHEET

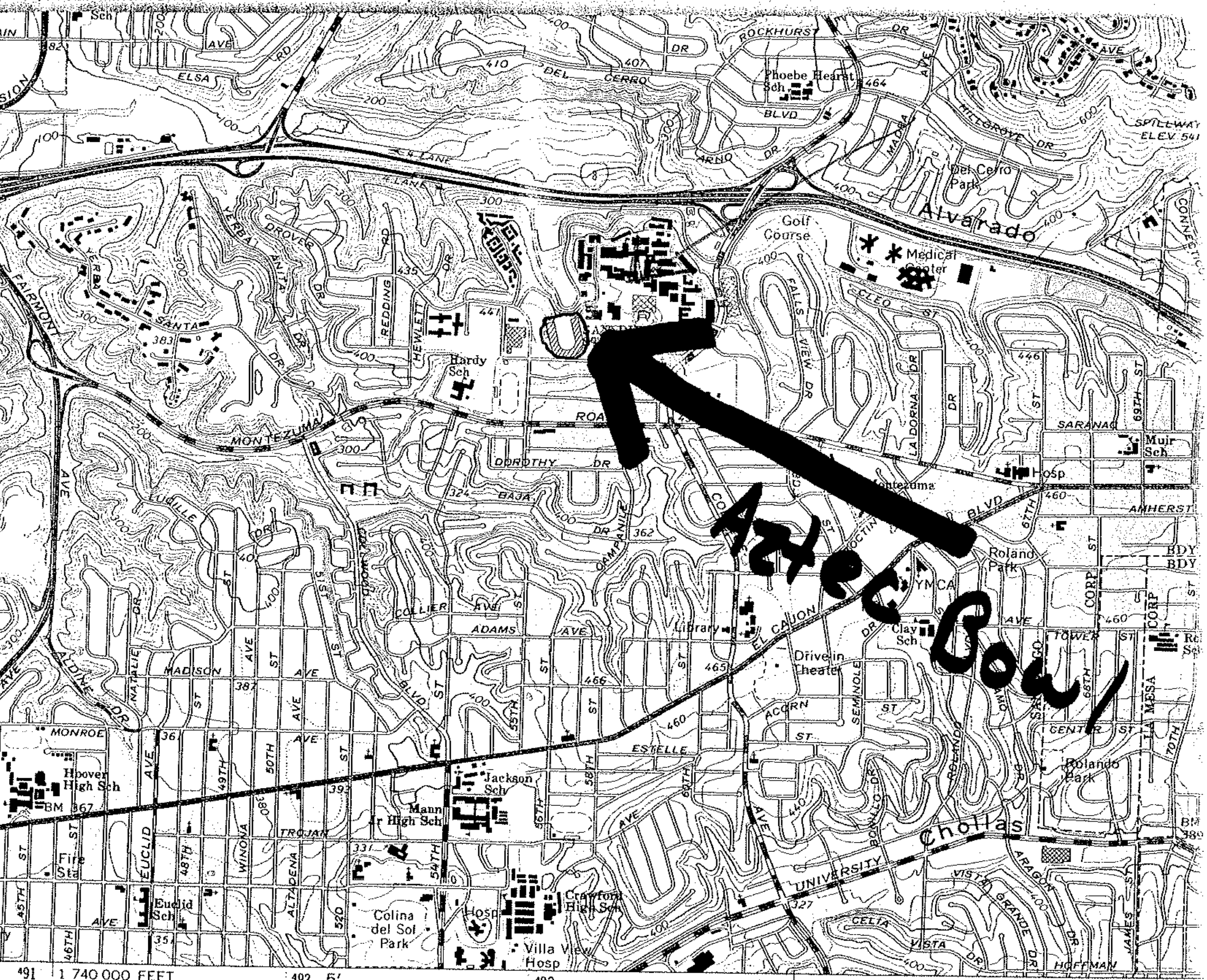
Primary # P-37-013708
HRI#/Trinomial CA-SDI-13717H

Page 2 of 11

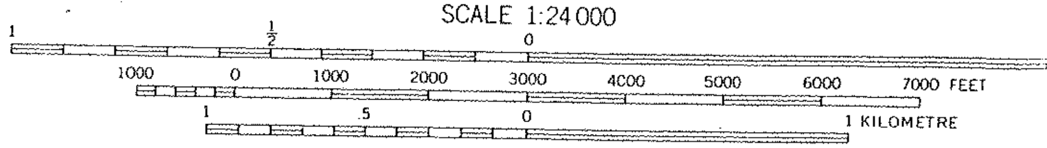
Resource Identifier: Aztec Bowl

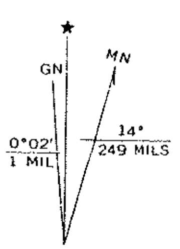
Map Name: La Mesa **Scale:** 7.5 **Date:** 1975

NOTE: Include bar scale and north arrow on map.



SCALE 1:24 000





UTM GRID AND 1975 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

CONTOUR INTERVAL 20 FEET
DOTTED LINES REPRESENT 10-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary # P-37-013708
HRI# CA-SDI-13717H

BUILDING, STRUCTURE, AND OBJECT RECORD

B1. Resource Identifier: Aztec Bowl
B2. Historic Name: Aztec Bowl
B3. Common Name: Aztec Bowl
B4. Address: San Diego State University
San Diego **County:** San Diego **Zip:** 92182-0436 B5. Zoning:
B6. **Threats:** Constuction of Student Activity Center, Vandalism
B7. Architectural Style: open air sports stadium
B8. Alterations and Date(s): 1939-Instalation of electric lighting
1948-Bleachers expanded
1983-Ten ton granite boulder placed at northern end
(State Historical Landmark #798)
B9. Moved? X No ☐ Yes ☐ Unknown Date: Original Location:
B10. Related Features: none
B11. Architect: Office of the State Architect Builder: Works Progress Administration
B12. Historic Attributes (List attributes and codes): Monument-HP26, WPA property-HP35, Stadium-HP42

B13. Significance: Theme Sports Stadium Area
Period of Significance 1933-1948 Property Type Applicable Criteria A, C
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

As a stadium, the Aztec Bowl embodies the distinctive characteristics of type and is significant at a national level. Like the best stadiums from an important period related to stadium building, it serves its primary function of providing a place for spectators to watch football games in a facility that is intimate and well planed. Aztec Bowl is significant as a structure which represents a contribution to the broad patterns of our history. As a WPA project the construction was part of the New Deal era. The structure represents a specific method used at a local level. This would include the building of the structure with only handtools. Also the cobblestone architecture represents the utilization of resources available that is characteristic of WPA projects. This project was also initiated to combat the effects of the Great Depression by providing work for local residents. Aztec Bowl appears to be the only stadium built on a college campus in the State of California by the WPA and when completed in 1936 the only campus stadium south of Stanford University. The present integrity of the structure is fair. Vandals have removed the designation plaque from the north wall of the east bleachers and the Cobblestone walls have numerous cracks in them. The scoreboard on the south end appears non-operational and is badly weathered as are the wooden bleachers. Despite these deficencies it is still a functional stadium

California State Historical Landmark #798 Was placed on the site to commemorate President John F. Kennedy's speech at the 1963 commencement ceremony. Over 30,000 people heard his speech that reflected the times-the fear of the Soviet Union, civil rights, and the value of education. The President was awarded an honorary doctorate, the first ever conferred on behalf of the entire California State College system.

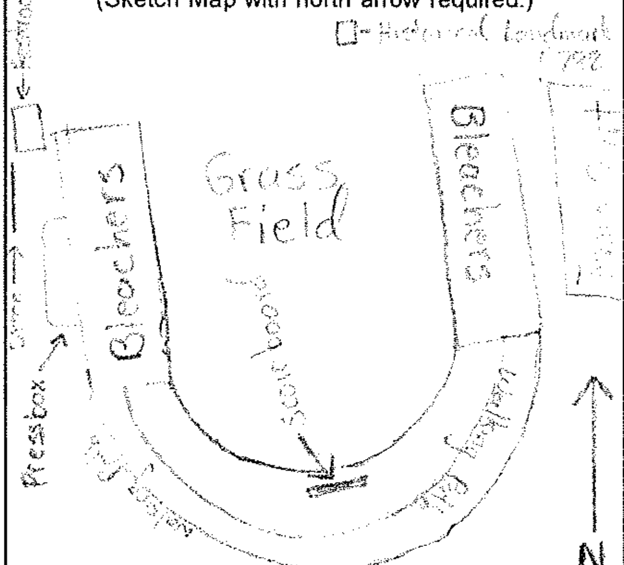
B14. References: Markham, Kathleen National Register of Historic Places Registration Form: Aztec Bowl November 1993

B15. Evaluator:

Date of Evaluation:

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PHOTOGRAPH RECORD

Primary # P-37-013708
HRI#/Trinomial CA-SDI-13717 H

Project Name.: Aztec Bowl
Camera Format: 35 mm Lens Size: 28-70 mm
Film Type and Speed: T-max 400 Year: 1994
Negatives kept at: South Coast Information Center San Diego State University

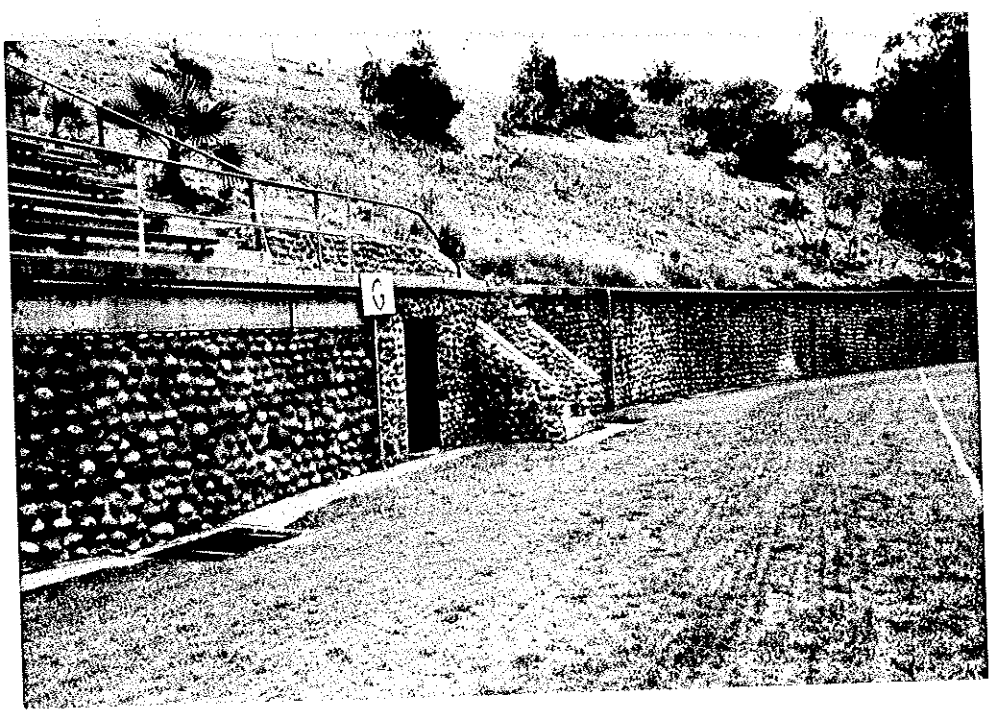
Mo.	Day	Time	Exp/Frame	Subject/Description	View Toward	Accession#
06	03	1300	28mm 125 at f3	Aztec Bowl	South	
06	03	1200	28mm 125 at f3	Historical Landmark #798	South West	
06	03	1200	28mm 125 at f3	Retaning walls	East	
06	03	1230	28mm 125 at f3	Wooden Bleachers	South	
06	03	1230	28mm 125 at f3	Cobblestone Wall and Stairs	South East	
06	03	1200	28mm 125 at f3	Scoreboard	South	
06	03	1300	28mm 125 at f3	Restroom Building	North West	
06	03	1300	28mm 125 at f3	Cobblestone Ditch (above west bleachers)	North	
06	03	1330	28mm 125 at f3	Old Shower Room (under east bleachers)	North	
06	03	1330	28mm 125 at f3	Bathroom (under east bleachers)	South West	
06	03	1330	28mm 125 at f3	Water Fountian (under east-bleachers	South West	
06	03	1330	28mm 125 at f3	Missing Idenification Plauge (on north facing wall of the east bleachers)	South	
06	03	1300	28mm 125 at f3	Aztec Bowl (right photograph)	South	
06	03	1300	28mm 125 at f3	Aztec Bowl (left photograph)	South	

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

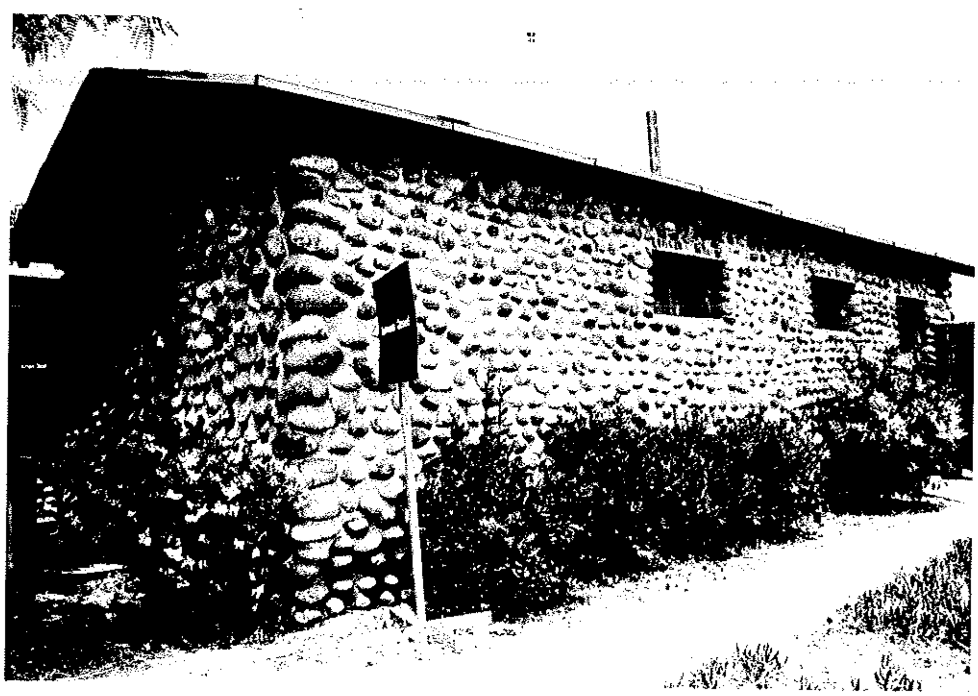
Primary # P-37-013708
HRI#/Trinomial CA-SDI-13717H

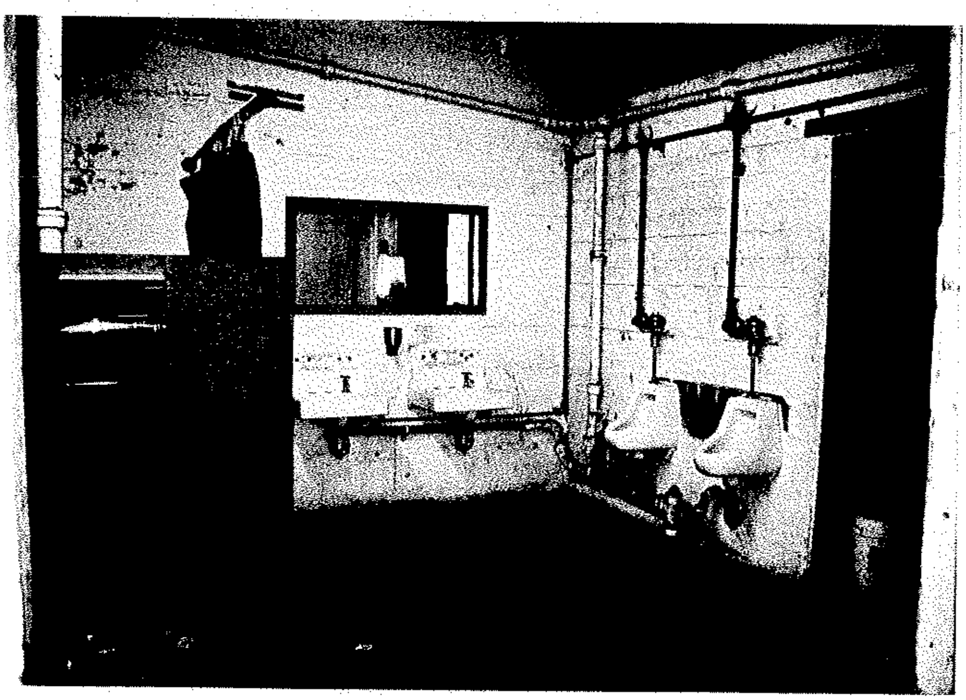
Resource Identifier: Aztec Bowl

☒ Continuation Update


G


VISITORS
HOME

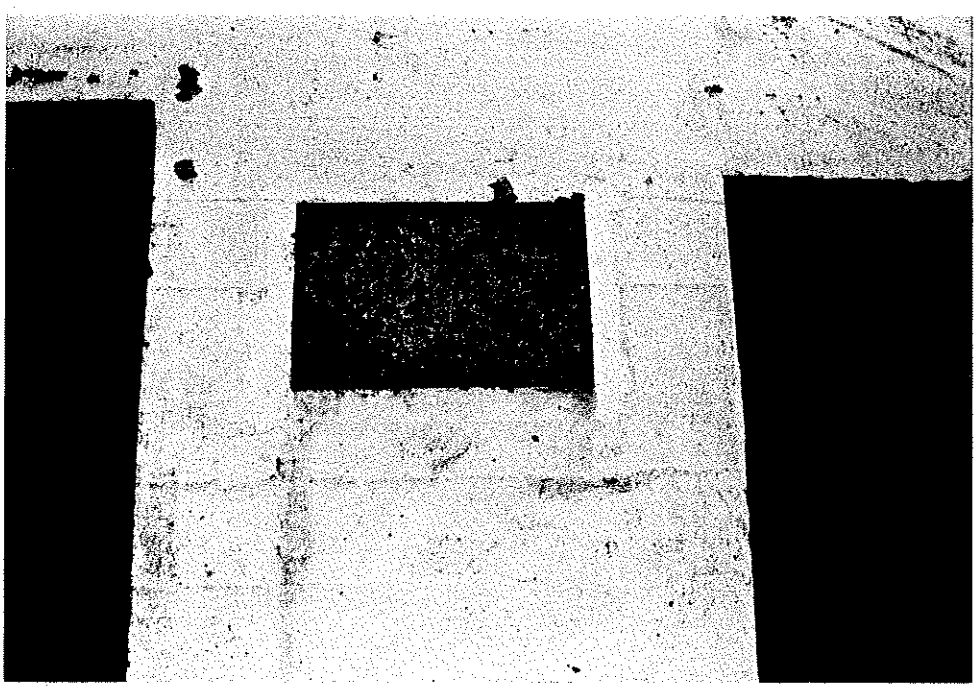


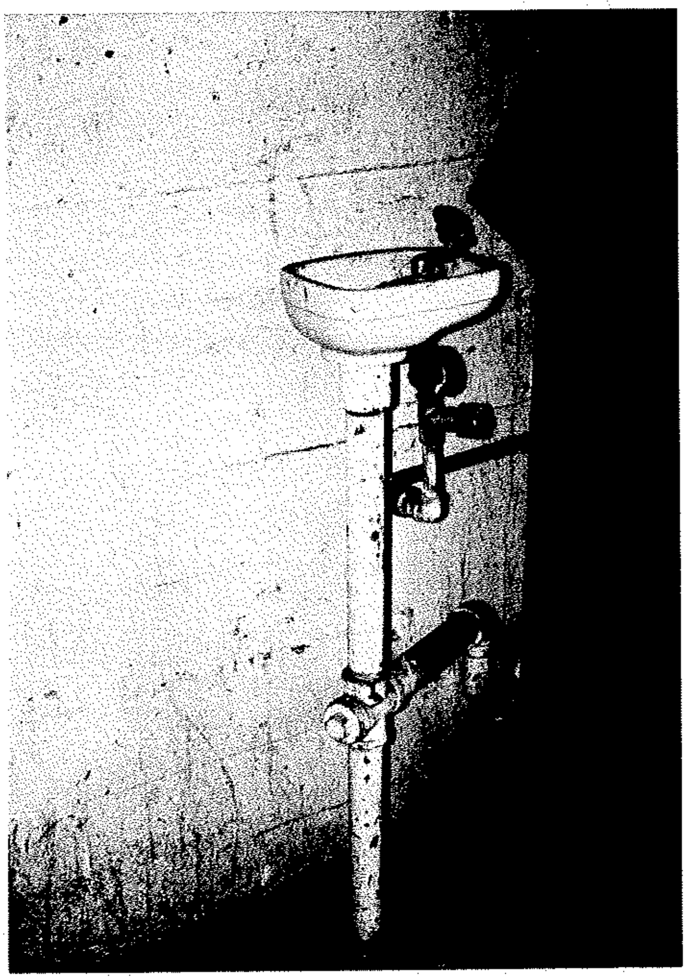


Primary # P-37-013708
HRI#/Trinomial CA-SDI-13717H

Resource Identifier: Aztec Bowl

☒ Continuation ☐ Update



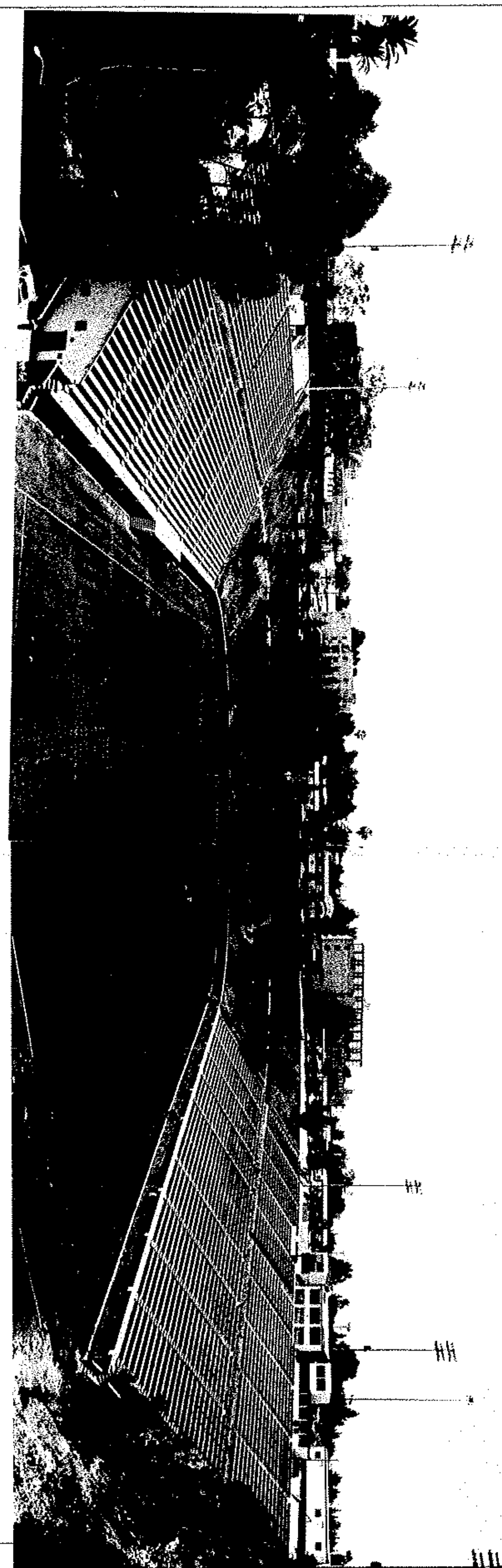


State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-37-013708
HRI#/Trinomial CA-SDI-13717H

Resource Identifier: Aztec Bowl

☒ Continuation Update



State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-37 015591
HRI #
Trinomial
NRHP Status Code
Other Listings
Review Code ______ Reviewer ______ Date ______

Page 1 **of** 2 ***Resource Name or #:** (Assigned by Recorder) C-1

P1. Other Identifier:m

***P2. Location:** ☒ **Not for Publication** ☐ **Unrestricted** ***a. County** San Diego County
and (P2b and P2c or P2d. Attach Location Map as required.)
***b. USGS Quad** La Mesa (7.5'/15') **Date** 1971 T _; R _1/4 of Sec _; S.B.B.M.
c. Address ______ City ______ Zip ______
d. UTM: (Give more than one for large and/or linear resources) **Zone** 11 / 493340 **m E**/ 3626730 **m N**
e. Other Locational Data (e.g. parcel #, directions to resources, elevation, etc., as appropriate):

Located on steep slope above and to the southwest of Adobe Falls drainage - approximately 100 m north of Interstate 8.

P3a. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, boundaries.):

A single quartzite core, olive green in color, less than 10% cortex, approximately 5 centimeters of worked edge. Good visibility in immediate area, vegetation dominated by "broom brush," fennel, and non-native grasses. A rough, graded road lies approximately 10 m west.

***P3b. Resource Attributes:** (List attributes and codes) AP1 - Unknown

***P4. Resources present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District

P5a. Photograph or Drawing (Photo required for buildings, structures, and objects)

P5. Description of Photo: (View, date, accession #)

***P6. Date Constructed/Age:**
☒ Prehistoric ☐ Historic ☐ Both

***P7. Owner and Address:**
Uknown

***P8. Recorded by** (Name, address, and affiliation)
L. Tift
Gallegos & Associates, 5671 Palmer Way, Suite A, Carlsbad, CA 92008

***P9. Date Recorded:** 9/13/96

***P10. Type of Survey:** (Describe:)

***P11. Report Citation** (Cite survey report and other sources, or enter "none"): Letter Report for the Adobe Falls Project (10/96 (attached).

Attachments: ☐ None ☒ Map Sheet ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Linear Res. Rec. ☐ Archaeological Rec. ☐ District Rec. Milling Station Rec. ☐ Rock Art Rec. ☐ Artifact Rec. ☐ Photo Rec.
Other (List): Letter Report

GOLF COURSE
Gravel Pits
MISSION
S A N D I E G O
ROAD
OLD CLIFFS RD
GREENBRIER
BRUNSWICK
ELGIN AVE
FONTAINE
CONESTOGA
LARAMIE WAY
Lewis Jr High Sch
Marvin Sch
Park
WARING
ELDRIDGE
ROAD
Library
DeAnza Sch
Foster Sch
ZION AVE
CRAWFORD ST
DELBARTON
ESTRELLA AVE
50TH ST
CARTHAGE
Grantville
Grantville Sch
ELSA
NAVAJO
RIDGE
EL PASO
MANOR
WANDERMERE
PARK RIDGE BLVD
GLENFLD
BOUNTY ST
LANCE
St Therese Academy
COLLEGE AVE
Radio Tower (KMA)
Res
LANCASTER
ROCKHURST
DEL CERRO BLVD
Phoebe Hearst Sch
C-1
MADRA
DEL CERRO PARK
SPILLWAY ELEV 641
Intake WT
Alvarado
Golf Course
Medical Center
DROVER
REDDING
YERBA SANTA DR
SAN DIEGO STATE COLLEGE
Hardy Sch
MONTEZUMA ROAD
DOROTHY DR
BAJA
COLLEGE
Montezuma Sch
Hosp
Muir Sch
SARANAC
AMHERST ST
BLVD
EL CAJON
Roland Park
YMCA
PO
Clay Sch
Library
COLLIER AVE
ADAMS AVE
MADISON AVE
Drive in theatre
SEMINOLE DR
ACORN ST
ESTELLE
TOWER ST
CENTER ST
Rolando Sch
Rolando Park
Jackson Sch
Mann Jr High Sch
LA MESA
STANFORD
HARRISON
70TH ST

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # P-37-017254
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code ______ Reviewer ______ Date ______

Page 1 of 2 *Resource Name or #: (Assigned by recorder) 5840-5846 Hardy Avenue

P1. Other Identifier:

*P2. Location: ☐ Not for Publication ■ Unrestricted * a. County San Diego

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad La Mesa Date ____ T ____; R ____; ____ ¼ of ____ ¼ of Sec ____; ____ B.M.

c. Address 5840-5846 Hardy Avenue City San Diego Zip 92115

d. UTM: (Give more than one for large or linear resources) Zone ____; ______ mE/ ______ mN

e. Other Locational Data (e.g., parcel #, directions to resource, elevation, etc., as appropriate):
Lot 3, Block 11, College Park Unit No.2, APN: 466-050-02

*P3a. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries):
This one-story apartment building was constructed in 1947. Designed in a Modern architectural style, the building is composed of a long, rectangular "C-shaped" plan and serves four square apartment units. The building consists of approximately 2,270 square feet of total living space. The size of the individual units vary from 24 x 30 feet and 23 x 20 feet; each unit averages approximately 567 square feet of living space. Of standard construction, the foundation is reinforced concrete with a sub-floor. The building consists of frame construction with floor joists. The exterior consists of plastered stucco-on-frame. The roof is hipped with a low pitch and modest roof overhang. Exposed 2" x 4" x 24" rafters are visible. Windows are double-hung standard with screens; surrounds are simple. Overall, the apartment is in fair condition.

*P3b. Resource Attributes: (List attributes and codes) HP3

*P4. Resources Present: ■ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #) View Facing North

*P6. Date Constructed/Age and Sources: ■ Historic ☐ Prehistoric ☐ Both
1947; Residential Building Records; City Directories

*P7. Owner and Address:
Harold, Carrie & Shane Webber
4968 Cresita Drive
San Diego, CA 92115

*P8. Recorded by (Name, affiliation, and address): Scott A. Moomjian
4933 Chaparral Way, San Diego, CA 92115

*P9. Date Recorded: July 1999

*P10. Type of Survey: (Describe)
None

P11. Report Citation (Cite survey report and other sources, or enter "none".) *Historical Assessment Of The 5840-5846 And 5840A & 5840B Hardy Avenue Apartments, San Diego, California 92115*

Attachments: ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Resource Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary # P-37-017254
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

Page 2 of 2 *NRHP Status Code 6Z

*Resource Name or # (Assigned by recorder) 5840-5846 Hardy Avenue

B1. Historic Name:

B2. Common Name: 5840-5846 Hardy Avenue

B3. Original Use: Residential-Multi-Family B4. Present Use: Residential-Multi-Family

*B5. Architectural Style: Modern

*B6. Construction History: (Construction date, alternations, and date of alterations)

Constructed in 1947

*B7. Moved? ■No ☐Yes ☐Unknown Date: Original Location:

*B8. Related Features:

5840A-5840B Hardy Avenue Apartment Building

B9a. Architect: Unknown b. Builder: Unknown

*B10. Significance: Theme N/A Area San Diego

Period of Significance 1947 Property Type Residential Applicable Criteria N/A

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

This apartment building was constructed in March 1947 for Orville Thompson, who acquired Lot 3 from the Dennstedt Company in 1946. The Thompson family retained possession of the property until it was conveyed to Vida L. Mueller in December 1958. The property has remained in the possession of Mueller's relatives continuously to the present time. Over the course of its existence, this apartment building has served an exclusive rental purpose. Beginning around 1955, tenants have included mostly students at the San Diego State College (University). Historical research has determined that this apartment building is historically and architecturally insignificant. The building has not been associated with any events or individuals important in local, state, or national history. Architecturally, the building does not embody the distinctive characteristics of a type, period, or method of construction, and does not represent the work of a master. As a common, utilitarian rental building, it is architecturally insignificant.

B11. Additional Resource Attributes: (List attributes and codes)

*B12. References: (partial list)

Brandes, Ray, *An Historical/Architectural Study of The Bell-Lloyd Commercial Block, 5186-5192 College Avenue, San Diego, California 92115*, August 25, 1992.

Chain of Title Conducted For Assessors Parcel Number 466-050-02, June 14, 1999.

San Diego City Water and Sewer Records.

San Diego City Directories, 1947-1984.

Webber, Harold, Interview with Scott A. Moomjian, June 29, 1999.

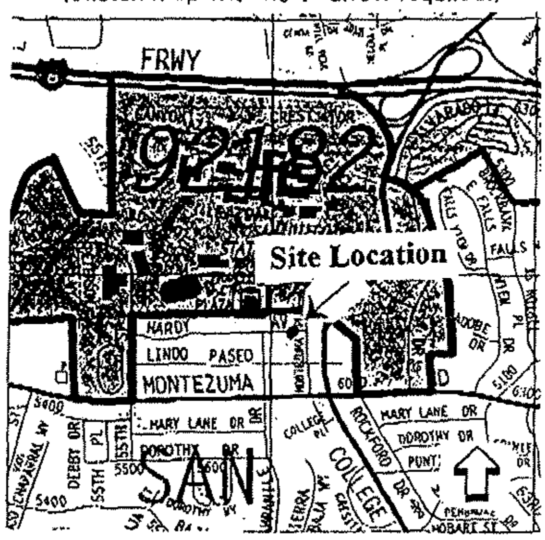
B13. Remarks:

*B14. Evaluator: Scott A. Moomjian

Date of Evaluation: July 1999

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # 37025491
HRI #
Trinomial
NRHP Status Code 7

Other Listings
Review Code | Reviewer | Date

*Resource Name or #: 5168-5172$^{1/2}$ College Avenue

***P1. Other Identifier:** Paseo at SDSU Project

***P2. Location:** ☐ Not for Publication X Unrestricted ***a. County:** San Diego
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** La Mesa-unsectioned **Date:** 1975 **T** ; **R** ; _ **of** _ **of Sec** ; M.D. **B.M.**
c. Address: 5168-5172 City: San Diego Zip: 92115
d. UTM: Zone: 11 ;115493528 mE/ 3625875 mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: 460 feet AMSL
This structure is located very near the southeast corner of the SDSU campus. The APN is 467-010-04-00.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
5168-5172$^{1/2}$ College Avenue is a Monterey style apartment house with white stucco exterior and a low-pitched red tile roof. This architectural style is indicative of the California tradition of Spanish eclectic architecture.. The building is two-story and has six apartments, three upstairs and three downstairs. The apartments are divided into two two-bedroom and four one-bedroom units. The building record identifies the apartment building as having been built in 1948. The multi-light windows are of the fixed, mullioned, and double hung styles. Access to the upstairs apartments is via outside concrete stairs that lead to the outside Monterey style balcony, which in turn allows access to all three upstairs apartments. Metal posts support the stairs and balcony, and the railings are decorative ironwork.

***P3b. Resource Attributes:** (List attributes and codes) HP3

***P4. Resources Present:** ✓Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

***P5a. Photo or Drawing** (Photo required for buildings, structures, and objects.)

***P5b. Description of Photo:** (View, date, accession #)
View of the southeast aspect of the apartment house

***P6. Date Constructed/Age and Sources:** ✓Historic ☐Prehistoric ☐Both
Built in 1948.

***P7. Owner and Address:**
SDSU Foundation
5500 Campanile
San Diego, CA 92116

***P8. Recorded by:** (Name, affiliation, and address)
Larry J. Pierson
Brian F. Smith and Associates
14010 Poway Road, Suite A
Poway, CA 92064

***P9. Date Recorded:** 11/5/03

***P10. Survey Type:** (Describe)
Archaeological/Historical with historic assessment of standing structures.

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") An Archaeological/Historical Study for the Paseo at San Diego State University Project.
***Attachments:** ☐NONE ✓Location Map ✓Sketch Map ☐Continuation Sheet ☑Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

37-025491

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
Primary # 37025491
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code 7

*Resource Name or # (Assigned by recorder) 5168-5172 1/2 College Avunue

B1. Historic Name:
B2. Common Name:
B3. Original Use: Apartment House B4. Present Use: Same
*B5. Architectural Style: Neoclectic...Monterey
*B6. Construction History: (Construction date, alterations, and date of alterations)

This two-story apartment house was constructed in 1948 and has remained with little change until the present. Minor repairs have been noted to the rear hand rail and other minor elements. The interiors of the individual apartments were not accessed for this study.

*B7. Moved? xNo ☐Yes ☐Unknown Date: Original Location:
*B8. Related Features: There is a garage original to the building, but without architecturally-redeeming features and is therefore not included in this registration.

B9a. Architect: unknown b. Builder: unknown
*B10. Significance: Theme: Hispanic California residentialarchitecture Area: California
Period of Significance: postwar Property Type: rental residential Applicable Criteria: N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

This apartment building represents the neoclectic Monterey architectural style in California which harkens back to the original Spanish and Mexican periods of architecture in this state. Because this style of architecture was more expensive to build, most apartment buildings built after World War II were plain stucco boxes. The Monterey style with its exterior balcony, white stucco, and red tile roof exemplifies one of the Hispanic period styles notable in California architecture.

B11. Additional Resource Attributes: (List attributes and codes) HP 3

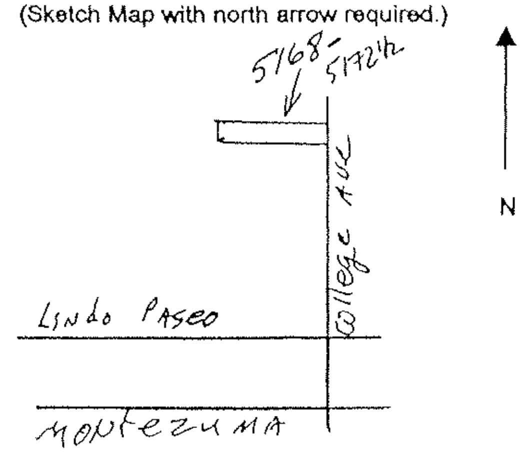
*B12. References:

B13. Remarks:

*B14. Evaluator: Larry J. Pierson

*Date of Evaluation: 11/11/03

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95) *Required information

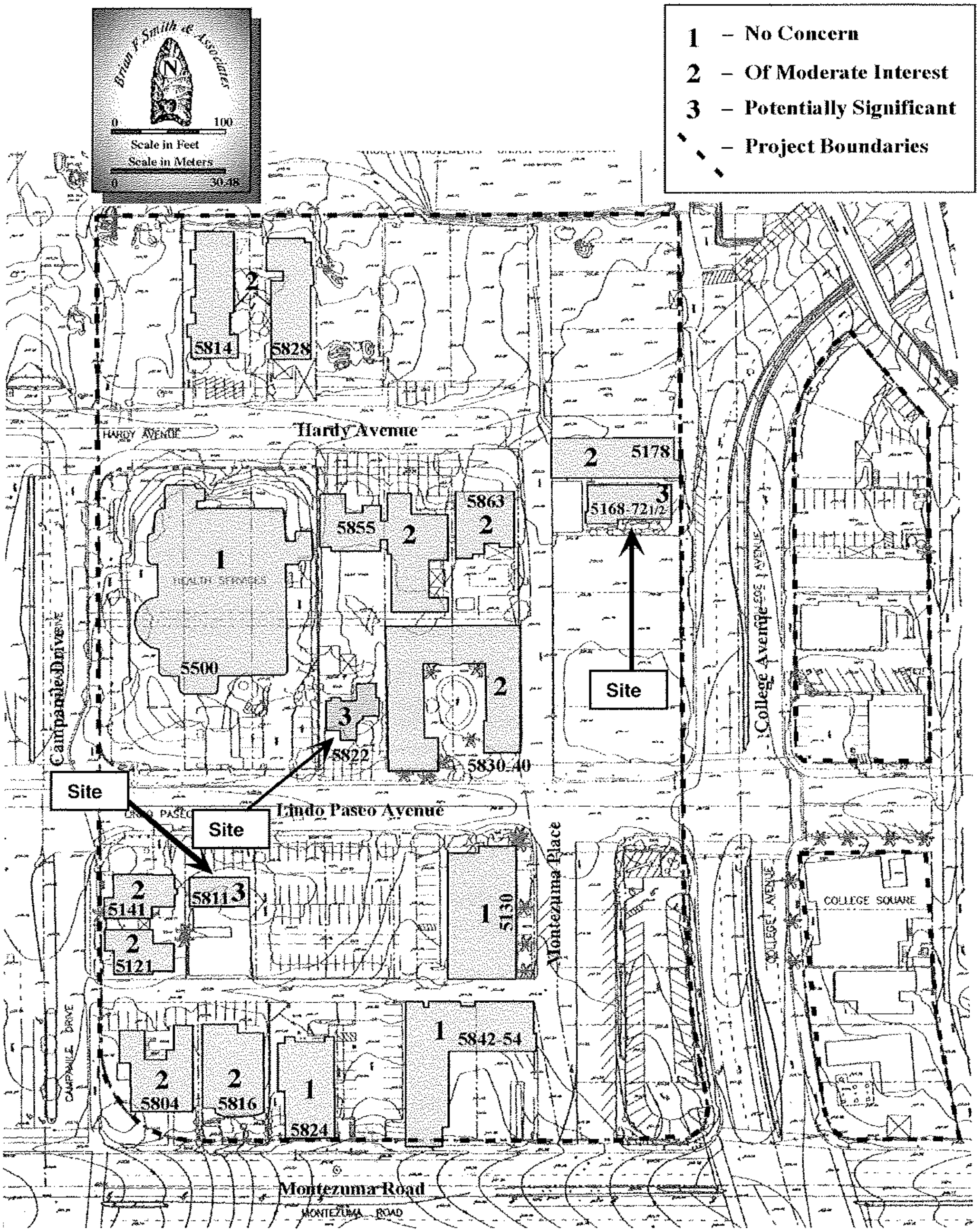
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary # 37025491
HRI#
Trinomial

***Resource Name or #** (Assigned by recorder) 5168-5172$^{1/2}$ College Avenue

***Drawn By:** Larry Pierson/ Robert Hernandez

***Date:** January 27, 2004



NOTE: Include bar scale and north arrow.

*Required information

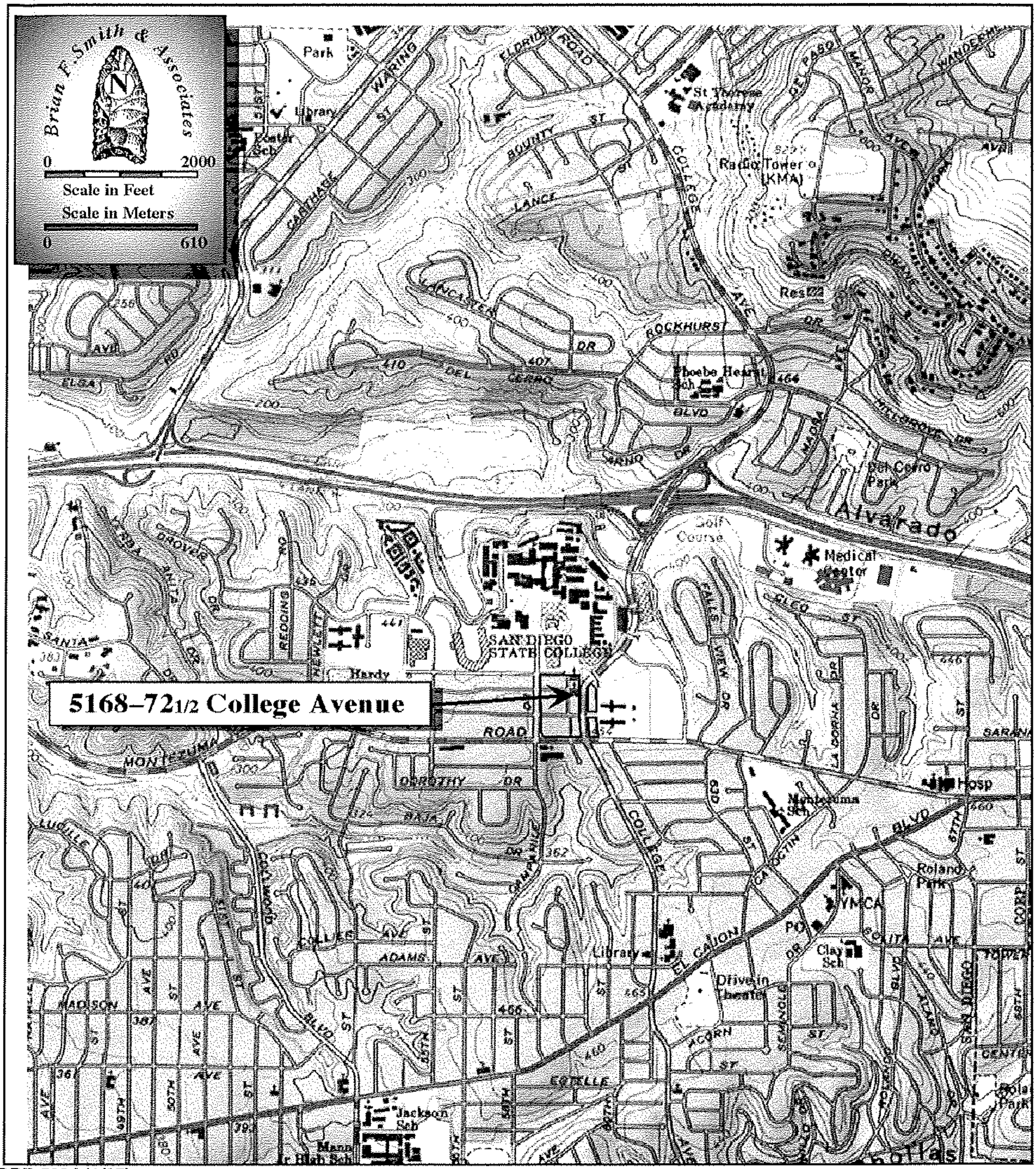
37-025491

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary # 37025491
HRI#
Trinomial

Page 4 of 4 *Resource Name or #: 5168-5172 1/2 College Avunue

*Map Name: *Scale: *Date of Map:



DPR 523J (1/95) *Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # 37025492
HRI #
Trinomial
NRHP Status Code 7

Other Listings
Review Code Reviewer Date

 ***Resource Name or #:** 5811 Lindo Paseo

***P1. Other Identifier:** Paseo at SDSU Project

***P2. Location:** ☐ Not for Publication X Unrestricted ***a. County:** San Diego

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** La Mesa-unsectioned **Date:** 1975 **T** ; **R** ; _ **of** _ **of Sec** ; M.D. **B.M.**

c. Address: 5811 Lindo Paseo **City:** San Diego **Zip:** 92115

d. UTM: Zone: 11 ; 115493383 mE/ 3625755 mN (G.P.S.)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: 460 feet AMSL
This structure is located very near the southeast corner of the SDSU campus. The APN is 466-050-38-00. The house is on the same lot as 5809 Lindo Paseo, an apartment building behind the house.

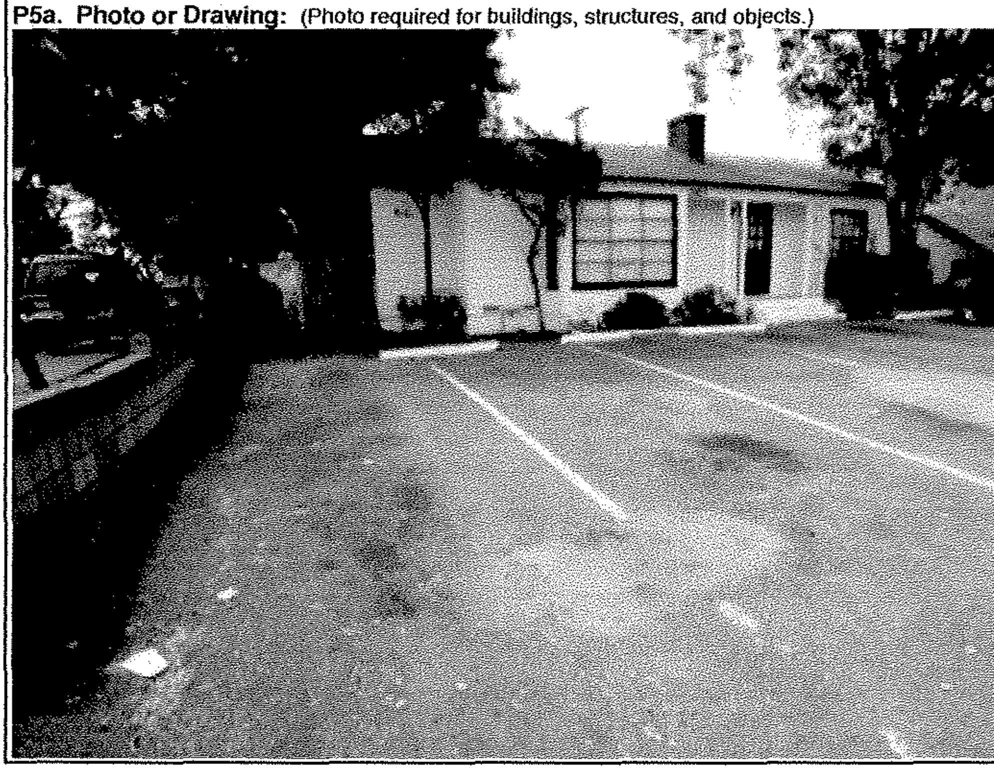
***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

This resource consists of a single family dwelling of undetermined age built in the National Folk style. Siding is wood clapboard, sashes are wood and glass fixed and double-hung, the roof is low-pitched, side-gabled, and covered with composition shingles. A small addition occupies the east end of the house. The fireplace chimney appears to be younger than the house. The house has not been identified as significant. The resident history suggests this is either more modern than it looks or it is a move-on structure.

***P3b. Resource Attributes:** (List attributes and codes) HP2

***P4. Resources Present:** ✓Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing: (Photo required for buildings, structures, and objects.)



***P5b.** Description of Photo: (View, date, accession #)
View of the north aspect of the house

***P6. Date Constructed/Age and Sources:** ✓Historic ☐Prehistoric ☐Both

***P7. Owner and Address:**
Hurst Family trust
1931 Mission Avenue
San Diego, CA 92116

***P8. Recorded by:** (Name, affiliation, and address)
Larry J. Pierson
Brian F. Smith and Associates
14010 Poway Road, Suite A
Poway, CA 92064

***P9. Date Recorded:** 11/5/03

***P10. Survey Type:** (Describe)
Archaeological/Historical with historic assessment of standing structures.

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") An Archaeological/Historical Study for the Paseo at San Diego State University Project.

***Attachments:** ☐NONE ✓Location Map ✓Sketch Map ☐Continuation Sheet ✓Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

37-025492

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary # 37025492
HRI#

*NRHP Status Code 7

*Resource Name or # (Assigned by recorder) 5811 Lindo Paseo

B1. Historic Name:

B2. Common Name:

B3. Original Use: Single Family Dwelling   B4. Present Use: offices

***B5. Architectural Style:** Tudor

***B6. Construction History:** (Construction date, alterations, and date of alterations)

This one-story single family dwelling was constructed at an unknown time. The address first appears in the City Directory Householder's list between 1945 and 1950. A small room addition is present on the east end, which may be a closet or bath. The interior of the building was not accessed for this study. A fireplace chimney in the center of the house appears to be younger than the house. Both occupation history and the new fireplace chimney suggest a move-on. The Building Record could not be accessed for this study.

***B7. Moved?** ☐No ☐Yes ✓Unknown **Date:** unknown **Original Location:** unknown

***B8. Related Features:** There is a two story apartment house on the same lot behind the building, but it is newer and without architecturally-redeeming features, and is therefore not included in this registration.

B9a. Architect: unknown   b. Builder: unknown

***B10. Significance: Theme:** National Folk style dwelling **Area:** California

Period of Significance: pre-WWII **Property Type:** Single family residential **Applicable Criteria:** N/A

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

This single-story residence represents the National Folk architectural style in California that is one of several styles constructed in large numbers during the Arts & Crafts period. This style is less frequently occurring than the Craftsman, Spanish eclectic, or Tudor styles. This residence is scheduled to be razed as part of a development project for SDSU. This building was not found to be a significant historic property.

B11. Additional Resource Attributes: (List attributes and codes) HP 2

***B12. References:**

B13. Remarks:

***B14. Evaluator:** Larry J. Pierson

***Date of Evaluation:** 11/11/03

(Sketch Map with north arrow required.)

See Attached

N

(This space reserved for official comments.)

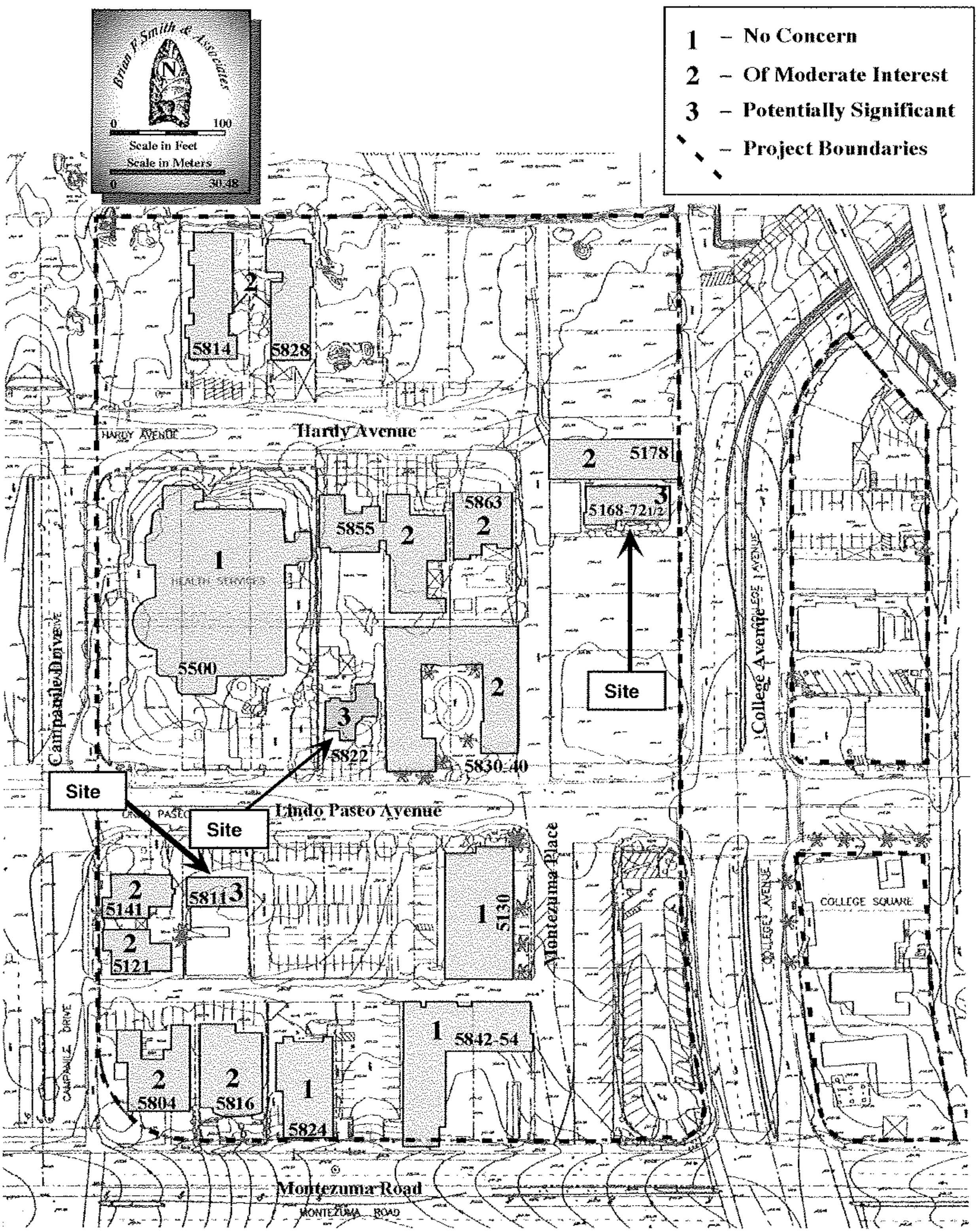
37-025492

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary # 37025492
HRI#
Trinomial

Page 3 of 4 *Resource Name or # (Assigned by recorder) 5811 Lindo Paseo

*Drawn By: Larry Pierson/ Robert Hernandez *Date: January 27, 2004



NOTE: Include bar scale and north arrow.

DPR 523K (1/95) *Required information

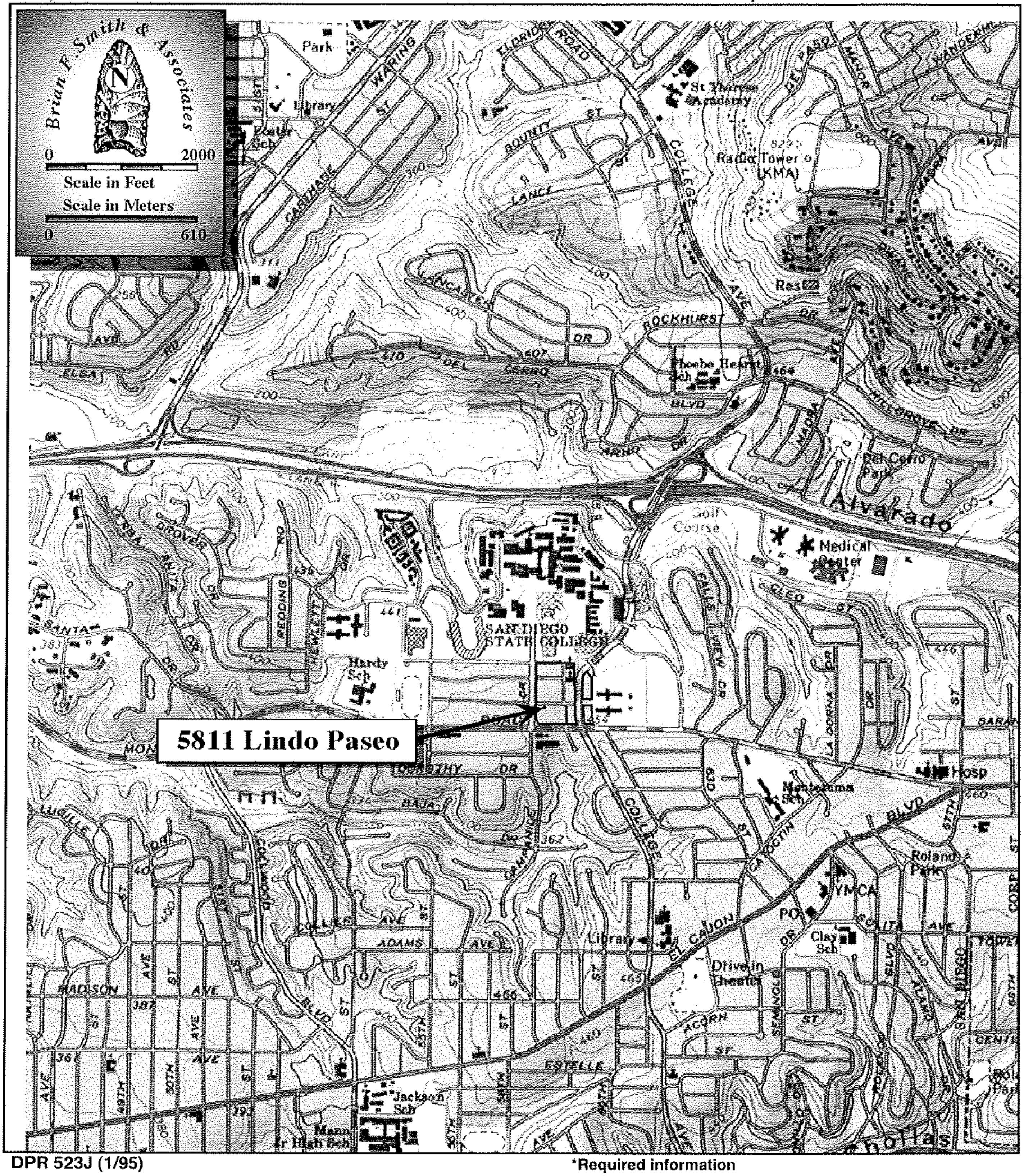
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary # 37025492
HRI#
Trinomial

*Resource Name or #: 5811 Lindo Paseo

*Map Name:

*Scale: *Date of Map:



DPR 523J (1/95)

*Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary # P-37-027607
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code 6Z

*Resource Name or # (Assigned by recorder) 6050 El Cajon Boulevard

B1. Historic Name: Aztec Motel

B2. Common Name: Aztec Budget Inn

B3. Original Use: Commercial/Residential B4. Present Use: Commercial/Residential

*B5. Architectural Style: Modern

*B6. Construction History: (Construction date, alternations, and date of alterations):
The motel building was constructed in ca. 1945; the apartment building was built in 1968.

*B7. Moved? ■No ☐Yes ☐Unknown Date: ______ Original Location: ______

*B8. Related Features: Parking areas

B9a. Architect: Unknown b. Builder: Scott King/Myron C. Lyon

*B10. Significance: Theme Modern Architecture Area San Diego Period of Significance 1945-Present Property Type Commercial/Residential Applicable Criteria C (Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.

The property was owned by a variety of owners prior to 1945. In 1945, the motel building was constructed by contractor Scott King for owners Scott King and Arthur McKee. The motel building was used as a motel from that time until 2005. The building was known as the Aztec Motel and later, the Aztec Budget Inn. The building was owned by various owners over the decades, including A. Leaman Davis (1945); Carl Engelhart (1945-1954); R.H. Hadley (1954); G.V. Larson (1954); Paul Timm (1956-1958); Paul Johnson (1958); Myron C. Lyon (1958-2001); Aztec Inn L.P. (2001-2005); Walgreen Company (2005); Interra-Vision LLC (2006-2006). The apartment building on the property was constructed in 1968 by owner Myron C. Lyon. As San Diego State University expanded, more residential space for college students was necessary. The building was constructed to fulfill that need and provide an investment opportunity for the owners.

B11. Additional Resource Attributes: (List attributes and codes) N/A

*B12. References: (partial list)

City of San Diego, Building Department Permits.
McAlester, Virginia & Lee, *A Field Guide To American Houses*, 2000.
Assessor's Building Records
San Diego City and County Directories.

B13. Remarks:

*B14. Evaluator: K. A. Crawford

Date of Evaluation: July 2006

(This space reserved for official comments.)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-37-027607
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code Reviewer Date

Page 1 of 2 ***Resource Name or #:** (Assigned by recorder) 6050 El Cajon Boulevard

P1. Other Identifier: Aztec Budget Inn

***P2. Location:** □ Not for Publication ■ Unrestricted * **a. County** San Diego
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** ~~Point Loma~~ La Mesa **Date** 1975 T ___; R ___; ___ ¼ of ___ ¼ of Sec ___; ___ B.M.
c. Address 6050 El Cajon Boulevard City San Diego Zip 92115
d. UTM: (Give more than one for large or linear resources) Zone ___; ___ mE/ ___ mN
e. Other Locational Data (e.g., parcel #, directions to resource, elevation, etc., as appropriate):
APN: 467-411-16, Lots 5-7, Lots 12-13, Block 7, Tract 1996

***P3a. Description** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries):

The property contains two structures - a 44 unit motel complex and a ten unit apartment building. The motel is an asymmetrical, U-shaped, Modern style, one-story motel complex. The building is constructed in one long structure that wraps around the parking area in the center of the complex. The building has a concrete foundation, painted brick walls, and a side gable roof with asphalt shingles and a Spanish tile spine along the roof ridge. The roof extends out over the entrance areas to the rooms and is supported by square wood posts. The doors and windows are boarded over so no determination of window or roof styles was possible. The doors are single doors. Air conditioning units were present on the front facades of each of the rooms; many have been removed. An apartment unit was created at the southeast corner of the complex, joining the east and west sides of the motel units. This section has a brick chimney. A motel sign is present at the front of the property. A two-story tower structure was added to the building on the southwest corner of the structure. The motel complex is in very poor condition and is surrounded by a chain link fence..

The apartment building is a two-story, rectangular shaped, asymmetrical, Modern style, ten unit apartment complex. The building has a concrete foundation, stucco exterior, and a roof with Spanish tile. The building has a centered entrance with an arch at the front, providing access to the recessed front doors. The first floor area is used for parking for the residents; the second floor is for the living units. The building has "Modern" style decorative screens along the front facade on the second floor. The doors and windows are boarded over so no style could be determined. The building is in poor condition and the property is surrounded by a chain link fence.

P3b. Resource Attributes: (List attributes and codes) HP 6: 1-3 Story Commercial Property/HP 3: Multiple Family Property

***P4. Resources Present:** ■ Building □ Structure □ Object □ Site □ District □ Element of District □ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #) View North/July 2006

***P6. Date Constructed/Age and Sources:** ■ Historic □ Prehistoric □ Both
ca. 1945/1968 Per Residential Building Record

***P7. Owner and Address:**
Mario Turner
AMCAL Multi-Housing Inc.
2082 Michelson Dr., Ste. 100
Irvine, CA 92612

P8. Recorded by (Name, affiliation, and address): Office of Marie Burke Lia, 427 C Street, Suite 416, San Diego, California 92101

***P9. Date Recorded:** July 23 2006

***P10. Type of Survey:** (Describe) Intensive

P11. Report Citation (Cite survey report and other sources, or enter "none".) *Historic Assessment of the Aztec Budget Inn Located at 6050 El Cajon Boulevard, San Diego, California 92115*

Attachments: □NONE □Location Map □Sketch Map □Continuation Sheet ■Building, Structure, and Object Record □Archaeological Record □District Record □Linear Resource Record □Milling Station Record □Rock Art Record □Artifact Record □Photograph Record □ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-37-027710
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code Reviewer Date

Page 1 **of** 2 ***Resource Name or #:** (Assigned by recorder) 6050 El Cajon Boulevard

P1. Other Identifier: Aztec Budget Inn

***P2. Location:** □ Not for Publication ■ Unrestricted * **a. County** San Diego
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** ~~Point Loma~~ La Mesa **Date** 1975 **T** ___; **R** ___; ___ ¼ of ___ ¼ of Sec ___; ___ **B.M.**
c. Address 6050 El Cajon Boulevard City San Diego Zip 92115
d. UTM: (Give more than one for large or linear resources) Zone ___; ___ **mE/** ___ **mN**
e. Other Locational Data (e.g., parcel #, directions to resource, elevation, etc., as appropriate):
APN: 467-411-16, Lots 5-7, Lots 12-13, Block 7, Tract 1996

***P3a. Description** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries):

The property contains two structures - a 44 unit motel complex and a ten unit apartment building. The motel is an asymmetrical, U-shaped, Modern style, one-story motel complex. The building is constructed in one long structure that wraps around the parking area in the center of the complex. The building has a concrete foundation, painted brick walls, and a side gable roof with asphalt shingles and a Spanish tile spine along the roof ridge. The roof extends out over the entrance areas to the rooms and is supported by square wood posts. The doors and windows are boarded over so no determination of window or roof styles was possible. The doors are single doors. Air conditioning units were present on the front facades of each of the rooms; many have been removed. An apartment unit was created at the southeast corner of the complex, joining the east and west sides of the motel units. This section has a brick chimney. A motel sign is present at the front of the property. A two-story tower structure was added to the building on the southwest corner of the structure. The motel complex is in very poor condition and is surrounded by a chain link fence..

The apartment building is a two-story, rectangular shaped, asymmetrical, Modern style, ten unit apartment complex. The building has a concrete foundation, stucco exterior, and a roof with Spanish tile. The building has a centered entrance with an arch at the front, providing access to the recessed front doors. The first floor area is used for parking for the residents; the second floor is for the living units. The building has "Modern" style decorative screens along the front facade on the second floor. The doors and windows are boarded over so no style could be determined. The building is in poor condition and the property is surrounded by a chain link fence.

P3b. Resource Attributes: (List attributes and codes) HP 6: 1-3 Story Commercial Property/HP 3: Multiple Family Property

***P4. Resources Present:** ■ Building □ Structure □ Object □ Site □ District □ Element of District □ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #) View North/July 2006

***P6. Date Constructed/Age and Sources:** ■ Historic □ Prehistoric □ Both
ca. 1945/1968 Per Residential Building Record

***P7. Owner and Address:**
Mario Turner
AMCAL Multi-Housing Inc.
2082 Michelson Dr., Ste. 100
Irvine, CA 92612

P8. Recorded by (Name, affiliation, and address): Office of Marie Burke Lia, 427 C Street, Suite 416, San Diego, California 92101

***P9. Date Recorded:** July 23 2006

***P10. Type of Survey:** (Describe) Intensive

P11. Report Citation (Cite survey report and other sources, or enter "none".) *Historic Assessment of the Aztec Budget Inn Located at 6050 El Cajon Boulevard, San Diego, California 92115*

Attachments: □NONE □Location Map □Sketch Map □Continuation Sheet ■Building, Structure, and Object Record □Archaeological Record □District Record □Linear Resource Record □Milling Station Record □Rock Art Record □Artifact Record □Photograph Record □ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary # P37-027710
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

Page 2 of 2 *NRHP Status Code 6Z

*Resource Name or # (Assigned by recorder) 6050 El Cajon Boulevard

B1. Historic Name: Aztec Motel

B2. Common Name: Aztec Budget Inn

B3. Original Use: Commercial/Residential B4. Present Use: Commercial/Residential

***B5. Architectural Style:** Modern

***B6. Construction History:** (Construction date, alternations, and date of alterations):
The motel building was constructed in ca. 1945; the apartment building was built in 1968.

***B7. Moved?** ■No □Yes □Unknown Date: ________ Original Location: ________

***B8. Related Features:** Parking areas

B9a. Architect: Unknown b. Builder: Scott King/Myron C. Lyon

***B10. Significance:** Theme Modern Architecture Area San Diego Period of Significance 1945-Present Property Type Commercial/Residential Applicable Criteria C (Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.

The property was owned by a variety of owners prior to 1945. In 1945, the motel building was constructed by contractor Scott King for owners Scott King and Arthur McKee. The motel building was used as a motel from that time until 2005. The building was known as the Aztec Motel and later, the Aztec Budget Inn. The building was owned by various owners over the decades, including A. Leaman Davis (1945); Carl Engelhart (1945-1954); R.H. Hadley (1954); G.V. Larson (1954); Paul Timm (1956-1958); Paul Johnson (1958); Myron C. Lyon (1958-2001); Aztec Inn L.P. (2001-2005); Walgreen Company (2005); Interra-Vision LLC (2006-2006). The apartment building on the property was constructed in 1968 by owner Myron C. Lyon. As San Diego State University expanded, more residential space for college students was necessary. The building was constructed to fulfill that need and provide an investment opportunity for the owners.

B11. Additional Resource Attributes: (List attributes and codes) N/A

***B12. References:** (partial list)
City of San Diego, Building Department Permits.
McAlester, Virginia & Lee, *A Field Guide To American Houses*, 2000.
Assessor's Building Records
San Diego City and County Directories.

B13. Remarks:

***B14. Evaluator:** K. A. Crawford

Date of Evaluation: July 2006

(This space reserved for official comments.)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-37-028223
HRI #
Trinomial CA-SDI-18326
NRHP Status Code 7

Other Listings
Review Code Reviewer Date

 *Resource Name or #: Temp 2

P1. Other Identifier: SDSU 2007 Master Plan Revision

***P2. Location:** ☑ Not for Publication ☐ Unrestricted ***a. County:** San Diego
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** *La Mesa,* California **Date:** 1996 **T** 16S **R** 2W **Unsectioned** S.B. **B.M.**
c. Address: Adobe Falls North Campus City: San Diego Zip:
d. UTM: Zone: 11 ; 493117mE/ 3627067mN (G.P.S.)
e. Other Locational Data:

The SDSU 2007 Master Plan Adobe Falls North Campus Project is located north of Highway 8 and west of College Avenue. Site Temp 2 is a prehistoric bedrock milling site located on the south side of Alvarado Creek some 890' (271 M) downstream of Adobe Falls. Elevation at the site is 202' (62m).

***P3a. Description:**
Site Temp 2 consists of a single bedrock milling feature, identified as BMF-A. The bedrock feature at Site Temp 2 contained a total of five grinding surfaces, all slicks. The entire surface of the site was thoroughly inspected for surface artifacts; only four artifact locations were identified. The potential for subsurface cultural deposits at Site Temp 2 was investigated by excavating nine STPs and one TU. Only a minimal subsurface component was identified in association with the bedrock milling feature at Site Temp 2.

***P3b. Resource Attributes:** AP4 Bedrock milling feature

***P4. Resources Present:** ☐Building ☐Structure ☐Object ☑Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5b. Description of Photo: N/A

***P6. Date Constructed/Age and Sources:** ☐Historic ☑Prehistoric ☐Both

***P7. Owner and Address:**
SDSU Foundation

***P8. Recorded by:**
Larry J. Pierson
Brian F. Smith & Assoc.
14010 Poway Rd, Suite A
Poway, CA 92064

***P9. Date Recorded:**
March 6, 2007

***P10. Survey Type:** Pedestrian survey and test

***P11. Report Citation:** Pierson, Larry (2007) *An Archaeological/ Historical Study for the SDSU 2007 Campus Master Plan Revision*

***Attachments:** ☐NONE ☑Location Map ☑Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☑Archaeological Record ☐District Record ☐Linear Feature Record ☑Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☑ Other (List): Artifact Catalog

***Resource Name or #:** Temp 2

***A1. Dimensions: a. Length:** 200 feet (E/W) × **b. Width:** 80 feet (N/S)
Method of Measurement: ☐ Paced ☐ Taped ☐ Visual estimate ☑ Other: GPS
Method of Determination (Check any that apply.): ☑ Artifacts ☑ Features ☐ Soil ☐ Vegetation ☐ Topography ☐ Cut bank ☐ Animal burrow ☑ Excavation ☐ Property boundary ☐ Other (Explain):
Reliability of Determination: ☑ High ☐ Medium ☐ Low Explain: Site was tested.
Limitations (Check any that apply): ☐ Restricted access ☐ Paved/built over ☐ Site limits incompletely defined ☑ Disturbances ☐ Vegetation ☐ Other (Explain):

A2. Depth: ☑ None ☐ Unknown Method of Determination: Excavation of nine shovel test pits and one test unit.

***A3. Human Remains:** ☐ Present ☑ Absent ☐ Possible ☐ Unknown (Explain):

***A4. Features**
A single bedrock milling feature was identified at the site, identified as BMF-A. The bedrock feature at Site Temp 2 contained a total of five grinding surfaces, all slicks. Slicks identified at Site Temp 2 range in length from 17 to 27 centimeters. The surfaces of the bedrock outcrops were extremely weathered; therefore, the edges of the grinding surfaces were often difficult to identify. No subsurface component was identified in association with the bedrock milling feature at Site Temp 2.

***A5. Cultural Constituents (**Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features.):
The entire surface of the site was thoroughly inspected for surface artifacts; only 4 artifact locations were identified. The potential for subsurface cultural deposits at Site Temp 2 was investigated by excavating nine STPs and one TU. Shovel test pits were positioned in areas containing sufficient soil in close proximity to the bedrock milling feature, in order to test for the presence of subsurface expression at the site. The STPs were negative for recovery and only three LPW were recovered from the 0-50 cm TU at Site Temp 2.

***A6. Were Specimens Collected?** ☐ No ☑ Yes

***A7. Site Condition:** ☐ Good ☐ Fair ☑ Poor: previous grading for pipelines, access roads, and freeway construction.

***A8. Nearest Water:** Seasonal drainage adjacent to the site.

***A9. Elevation:** 202 feet (62m) above mean sea level

A10. Environmental Setting: Vegetation at the site consists of riparian species and palm trees along the creek, and native inland sage scrub on the slopes of the hills north of the creek. The majority of the area surrounding the site has been completely disturbed by the construction of Interstate 8, a major water pipeline from Lake Murray, and a sewage pipeline.

A11. Historical Information:

***A12. Age:** ☑ Prehistoric ☐ Protohistoric ☐ 1542-1769 ☐ 1769-1848 ☐ 1848-1880 ☐ 1880-1914 ☐ 1914-1945 ☐ Post 1945 ☐ Undetermined **Describe position in regional prehistoric chronology or factual historic dates if known:**

A13. Interpretations (Discuss data potential, function[s], ethnic affiliation, and other interpretations):
The investigation of Site Temp 2 revealed few surface artifacts and a very sparse cultural deposit at the site. The single bedrock milling feature present at the site indicates that site activities were focused on floral food processing. Site Temp 2 exhibits no intact subsurface cultural deposits, and no potential for buried hearth features. The site exhibits no unique elements and no additional research potential.

A14. Remarks:

A15. References (Documents, informants, maps, and other references): Pierson, Larry (2005, 2007) "*An Archaeological/ Historical Study for the SDSU 2005 Campus Master Plan Revision,*" and "*An Archaeological/ Historical Study for the SDSU 2007 Campus Master Plan Revision.*"

A16. Photographs (List subjects, direction of view, and accession numbers or attach a Photograph Record.): None

Original Media/Negatives Kept at: Brian F. Smith and Associates

***A17. Form Prepared by:** Larry J. Pierson **Date:** March 6, 2007
Affiliation and Address: Brian F. Smith and Associates, 14010 Poway Road, Suite A, Poway, CA 92064

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
MILLING STATION RECORD

Primary # P-37-028223
Trinomial CA-SDI-18326

Resource Name or # (Assigned by Recorder): Temp 2

Form Prepared by: Larry J. Pierson

Date: March 6, 2007

Feature	Outcrop Dimensions (m) and Orientation			Bedrock Type and Condition
A	150cm	x 70cm	x Height 30cm	Granitic, weathered
		x	x Height	
		x	x Height	
		x	x Height	
		x	x Height	

Feature #	Milling Surface #	Type	Length (cm)	Width (cm)	Depth (cm)	Contents	Remarks
A	1	MS	21	16	<1		
A	2	MS	27	17	<1		
A	3	MS	17	12	<1		
A	4	MS	22	15	<1		
A	5	MS	18	21	<1		

Type Key:

CO Conical mortar
OM Oval mortar
SM Saucer mortar
Other:

PM Possible mortar
MS Milling slick
BM Basin milling feature

Contents Key:

S Filled with soil
L Filled with leaves
U Unexcavated
Other:

R Contains rock
P Contains pestle
M Contains mano

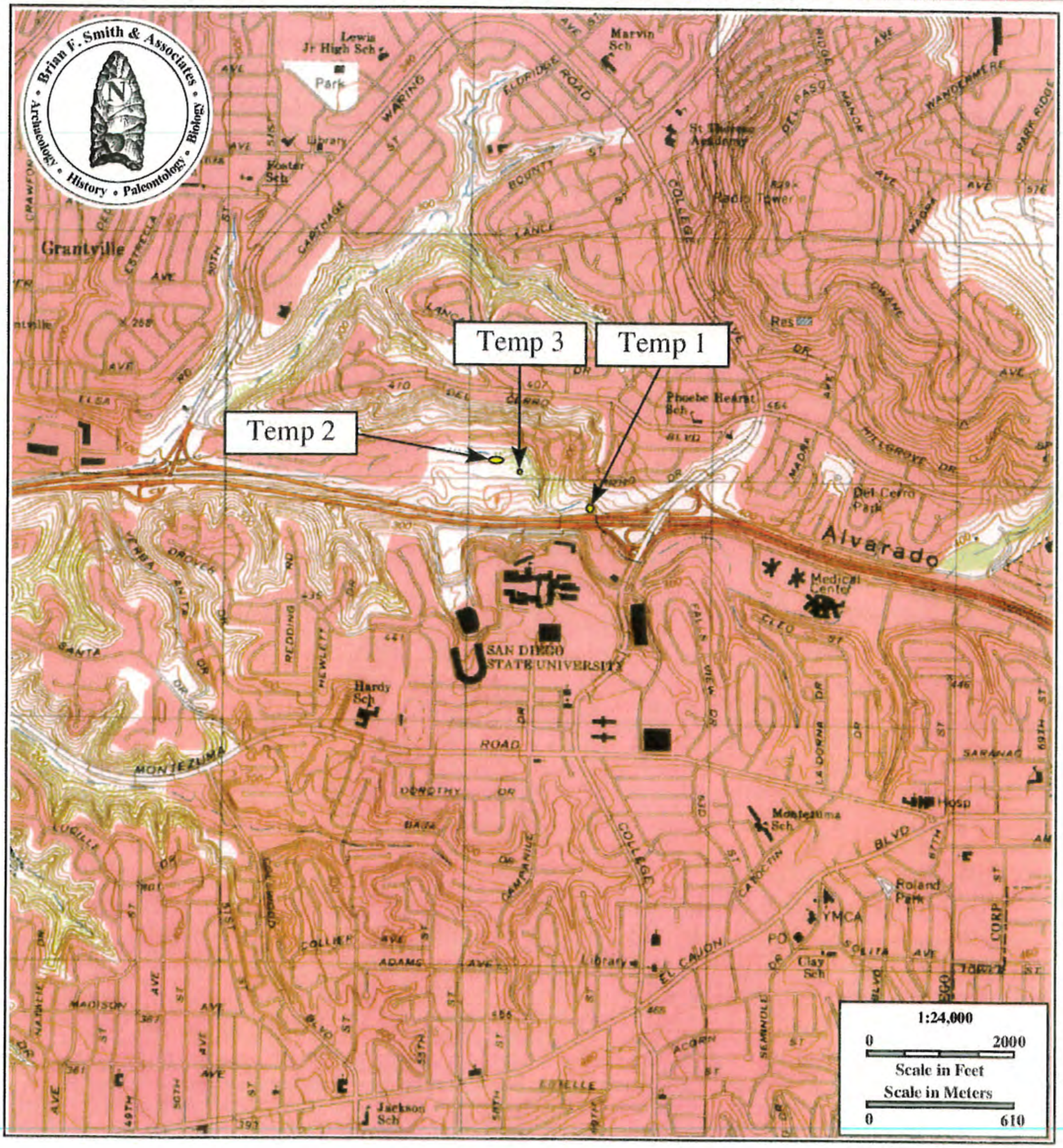
NOTE: Attach plan(s) of milling stations.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary # P-37-028223
HRI#
Trinomial CA-SDI-18326

*Resource Name or #:

*Map Name: La Mesa Quadrangle *Scale: 1:24,000 *Date of Map: 1996



Site Location Map

The 2007 SDSU Master Plan Project

USGS *La Mesa* Quadrangle (7.5 minute series)

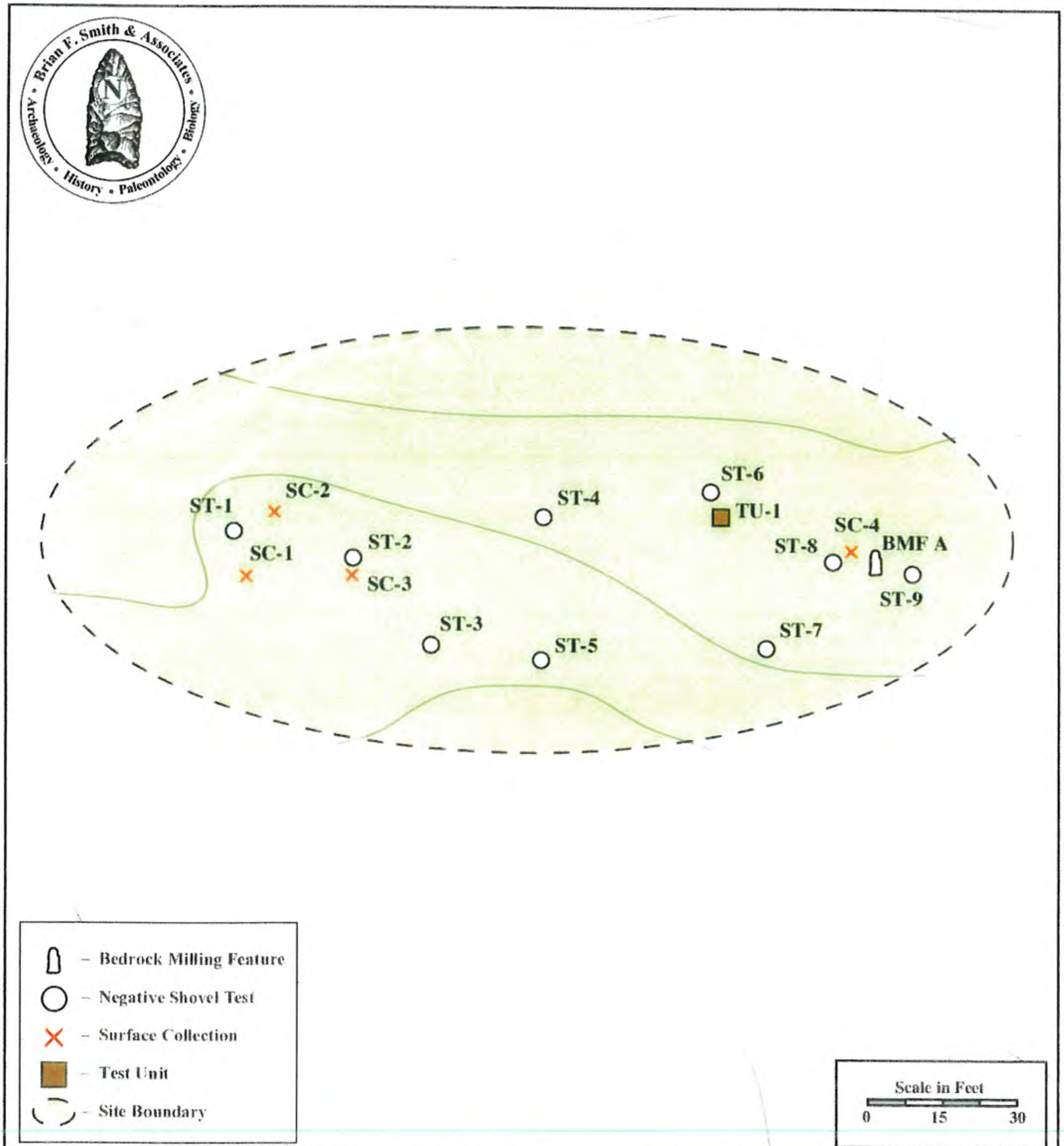
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary # P-37-028223
HRI#
Trinomial CA-SDI-18326

*Resource Name or # (Assigned by recorder)

*Drawn By: BFSA

*Date: March 1, 2007



Site Map
Site Temp 2
The 2007 SDSU Master Plan Project

temp 2

SDI Number	Project Name	Catalog #	Provenience Type	Provenience Number	Datum	Azimuth Range Feet	Depth	Material Class	Material Type	Quantity	Weight (g)	Artifact Class	Artifact Type	Portion Of Artifact	Portion Elaborate	Measurement 1	Measurement 2	Measurement 3
Temp 2	SDSU Master Plan	1	Surface	1				Lithic	Granite	1	1007	Groundstone Tools	Mano(s)	whole	bi/pol/peck/light/FC	13.2	9.9	4.9
Temp 2	SDSU Master Plan	2	Surface	1				Lithic	Quartzite	1	229.2	Precision Tools	Core Tool(s)	fragment(s)		10.5	9.2	2.3
Temp 2	SDSU Master Plan	3	Surface	2				Lithic	Quartzite	1		Lithic Production Waste	Core(s)	fragment(s)				
Temp 2	SDSU Master Plan	4	Surface	3				Lithic	Medium-grained	1		Lithic Production Waste	Flake(s)					
Temp 2	SDSU Master Plan	5	Surface	4				Lithic	Granite	1	570	Groundstone Tools	Mano(s)	fragment(s)	50-75%/bi/pol/peck/FC/burn/med wear	10.2	7.9	5.6
Temp 2	SDSU Master Plan	6	Surface	4				Lithic	Quartzite	4		Lithic Production Waste	Flake(s)					
Temp 2	SDSU Master Plan	7	Shovel Test	1			0-10	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	8	Shovel Test	1			10-20	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	9	Shovel Test	1			20-30	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	10	Shovel Test	1			30-40	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	11	Shovel Test	2			0-10	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	12	Shovel Test	2			10-20	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	13	Shovel Test	2			20-30	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	14	Shovel Test	3			0-10	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	15	Shovel Test	3			10-20	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	16	Shovel Test	3			20-30	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	17	Shovel Test	4			0-10	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	18	Shovel Test	4			10-20	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	19	Shovel Test	4			20-30	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	20	Shovel Test	4			30-40	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	21	Shovel Test	5			0-10	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	22	Shovel Test	5			10-20	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	23	Shovel Test	5			20-30	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	24	Shovel Test	6			0-10	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	25	Shovel Test	6			10-20	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	26	Shovel Test	6			20-30	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	27	Shovel Test	6			30-40	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	28	Shovel Test	7			0-10	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	29	Shovel Test	7			10-20	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	30	Shovel Test	7			20-30	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	31	Shovel Test	7			30-40	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	32	Shovel Test	8			0-10	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	33	Shovel Test	8			10-20	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	34	Shovel Test	8			20-25	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	35	Shovel Test	9			0-10	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	36	Shovel Test	9			10-20	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	37	Shovel Test	9			20-30	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	38	Test Unit	1			0-10	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	39	Test Unit	1			10-20	Lithic	Medium-grained	1		Lithic Production Waste	Flake(s)					
Temp 2	SDSU Master Plan	40	Test Unit	1			10-20	Lithic	Quartzite	1		Lithic Production Waste	Flake(s)					
Temp 2	SDSU Master Plan	41	Test Unit	1			20-30	Lithic	Medium-grained	1		Lithic Production Waste	Flake(s)					
Temp 2	SDSU Master Plan	42	Test Unit	1			30-40	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 2	SDSU Master Plan	43	Test Unit	1			40-50	No Recovery	No Recovery			No Recovery	No Recovery					

P-37-028223
CA-SDI-18326

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-37-028224
HRI #
Trinomial CA-SDI-18327
NRHP Status Code 7

Other Listings
Review Code Reviewer Date

 *Resource Name or #: Temp 3

P1. Other Identifier: SDSU 2007 Master Plan Revision

***P2. Location:** ☑ Not for Publication ☐ Unrestricted ***a. County:** San Diego
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** *La Mesa,* California **Date:** 1996 **T** 16S **R** 2W **Unsectioned** S.B. **B.M.**
c. Address: Adobe Falls North Campus City: San Diego Zip:
d. UTM: Zone: 11 ;493210mE/ 3627024mN (G.P.S.)
e. Other Locational Data:
The SDSU 2007 Master Plan Adobe Falls North Campus Project is located north of Highway 8 and west of College Avenue. Site Temp 2 is a prehistoric bedrock milling site located on the south side of Alvarado Creek some 440' (134 M) downstream of Adobe Falls. Elevation at the site is 207' (63m).

***P3a. Description:**
Site Temp 3 consists of a single bedrock milling feature, identified as BMF-A. The bedrock feature at Site Temp 3 contained a total of nine grinding surfaces, all slicks. The entire surface of the site was thoroughly inspected for surface artifacts; no artifact locations were identified. The potential for subsurface cultural deposits at Site Temp 3 was investigated by excavating three STPs and one TU. Only a minimal subsurface component was identified in association with the bedrock milling feature at Site Temp 3.

***P3b. Resource Attributes:** AP4 Bedrock milling feature

***P4. Resources Present:** ☐Building ☐Structure ☐Object ☑Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5b. Description of Photo: N/A

***P6. Date Constructed/Age and Sources:** ☐Historic ☑Prehistoric ☐Both

***P7. Owner and Address:**
SDSU Foundation

***P8. Recorded by:**
Larry J. Pierson
Brian F. Smith & Assoc.
14010 Poway Rd, Suite A
Poway, CA 92064

***P9. Date Recorded:**
March 6, 2007

***P10. Survey Type:** Pedestrian survey and test

***P11. Report Citation:** Pierson, Larry (2007) *An Archaeological/ Historical Study for the SDSU 2007 Campus Master Plan Revision*

***Attachments:** ☐NONE ☑Location Map ☑Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☑Archaeological Record ☐District Record ☐Linear Feature Record ☑Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☑ Other (List): Artifact Catalog

***Resource Name or #:** Temp 3

***A1. Dimensions: a. Length:** 65 feet (**E/W**) × **b. Width:** 65 feet (**N/S**)

Method of Measurement: ☐ Paced ☐ Taped ☐ Visual estimate ☑ Other: GPS

Method of Determination (Check any that apply.): ☐ Artifacts ☑ Features ☐ Soil ☐ Vegetation ☐ Topography ☐ Cut bank ☐ Animal burrow ☑ Excavation ☐ Property boundary ☐ Other (Explain):

Reliability of Determination: ☑ High ☐ Medium ☐ Low Explain: Site was tested.

Limitations (Check any that apply): ☐ Restricted access ☐ Paved/built over ☐ Site limits incompletely defined ☑ Disturbances ☐ Vegetation ☐ Other (Explain):

A2. Depth: ☑ None ☐ Unknown Method of Determination: Excavation of three shovel test pits and one test unit.

***A3. Human Remains:** ☐ Present ☑ Absent ☐ Possible ☐ Unknown (Explain):

***A4. Features**

A single bedrock milling feature was identified at the site, identified as BMF-A. The bedrock feature at Site Temp 3 contained a total of nine grinding surfaces, all slicks. Slicks identified at Site Temp 3 range in length from 16 to 26 centimeters. The surfaces of the bedrock outcrops were extremely weathered; therefore, the edges of the grinding surfaces were often difficult to identify. No subsurface component was identified in association with the bedrock milling feature at Site Temp 3.

***A5. Cultural Constituents** (Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features.):

The entire surface of the site was thoroughly inspected for surface artifacts; no artifact locations were identified. The potential for subsurface cultural deposits at Site Temp 2 was investigated by excavating three STPs and one TU. Shovel test pits were positioned in areas containing sufficient soil in close proximity to the bedrock milling feature, in order to test for the presence of subsurface expression at the site. The STPs were negative for recovery and only two LPW were recovered from the 0-50 cm TU at Site Temp 3.

***A6. Were Specimens Collected?** ☐ No ☑ Yes

***A7. Site Condition:** ☐ Good ☐ Fair ☑ Poor: previous grading for pipelines, access roads, and freeway construction.

***A8. Nearest Water:** Seasonal drainage adjacent to the site.

***A9. Elevation:** approximately 207 feet (63m) above mean sea level

A10. Environmental Setting: Vegetation at the site consists of riparian species and palm trees along the creek, and native inland sage scrub on the slopes of the hills north of the creek. The majority of the area surrounding the site has been completely disturbed by the construction of Interstate 8, a major water pipeline from Lake Murray, and a sewage pipeline.

A11. Historical Information:

***A12. Age:** ☑ Prehistoric ☐ Protohistoric ☐ 1542-1769 ☐ 1769-1848 ☐ 1848-1880 ☐ 1880-1914 ☐ 1914-1945 ☐ Post 1945 ☐ Undetermined **Describe position in regional prehistoric chronology or factual historic dates if known:**

A13. Interpretations (Discuss data potential, function[s], ethnic affiliation, and other interpretations):

The investigation of Site Temp 3 revealed no surface artifacts and a very sparse cultural deposit at the site. The single bedrock milling feature present at the site indicates that site activities were focused on floral food processing. Site Temp 3 exhibits no intact subsurface cultural deposits, and no potential for buried hearth features. The site exhibits no unique elements and no additional research potential.

A14. Remarks:

A15. References (Documents, informants, maps, and other references): Pierson, Larry (2005, 2007) *"An Archaeological/ Historical Study for the SDSU 2005 Campus Master Plan Revision,"* and *"An Archaeological/ Historical Study for the SDSU 2007 Campus Master Plan Revision."*

A16. Photographs (List subjects, direction of view, and accession numbers or attach a Photograph Record.): None

Original Media/Negatives Kept at: Brian F. Smith and Associates

***A17. Form Prepared by:** Larry J. Pierson **Date:** March 6, 2007

Affiliation and Address: Brian F. Smith and Associates. 14010 Poway Road, Suite A, Poway, CA 92064

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
MILLING STATION RECORD

Primary # P-37-028224
Trinomial CA-SDI-18327

Resource Name or # (Assigned by Recorder): Temp 3

Form Prepared by: Larry J. Pierson

Date: March 6, 2007

Feature	Outcrop Dimensions (m) and Orientation			Bedrock Type and Condition
A	160cm	x 120cm	x Height 48cm	Granitic, weathered
		x	x Height	
		x	x Height	
		x	x Height	
		x	x Height	

Feature #	Milling Surface #	Type	Length (cm)	Width (cm)	Depth (cm)	Contents	Remarks
A	1	MS	26	15	<1		
A	2	MS	20	9	<1		
A	3	MS	24	14	<1		
A	4	MS	23	10	<1		
A	5	MS	20	13	<1		
A	6	MS	16	12	<1		
A	7	MS	22	17	<1		
A	8	MS	21	13	<1		
A	9	MS	18	10	<1		

Type Key:
CO Conical mortar
OM Oval mortar
SM Saucer mortar
PM Possible mortar
MS Milling slick
BM Basin milling feature
Other:

Contents Key:
S Filled with soil
L Filled with leaves
U Unexcavated
R Contains rock
P Contains pestle
M Contains mano
Other:

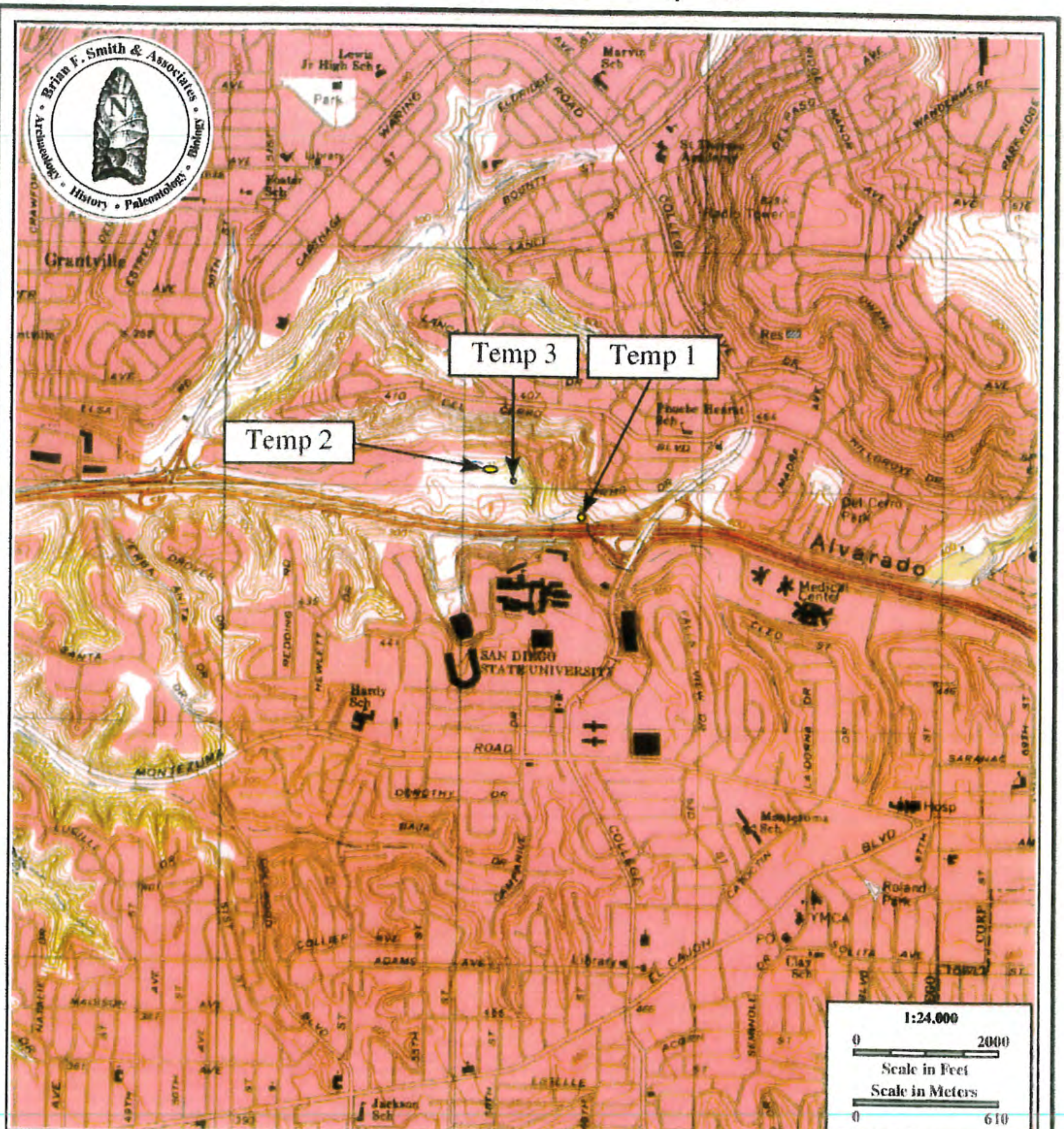
NOTE: Attach plan(s) of milling stations.

LOCATION MAP

Primary # P-37-028224
HRI#
Trinomial CA-SDI-18327

Page 4 of 6 *Resource Name or #:

*Map Name: La Mesa Quadrangle *Scale: 1:24,000 *Date of Map: 1996



Site Location Map

The 2007 SDSU Master Plan Project

USGS *La Mesa* Quadrangle (7.5 minute series)

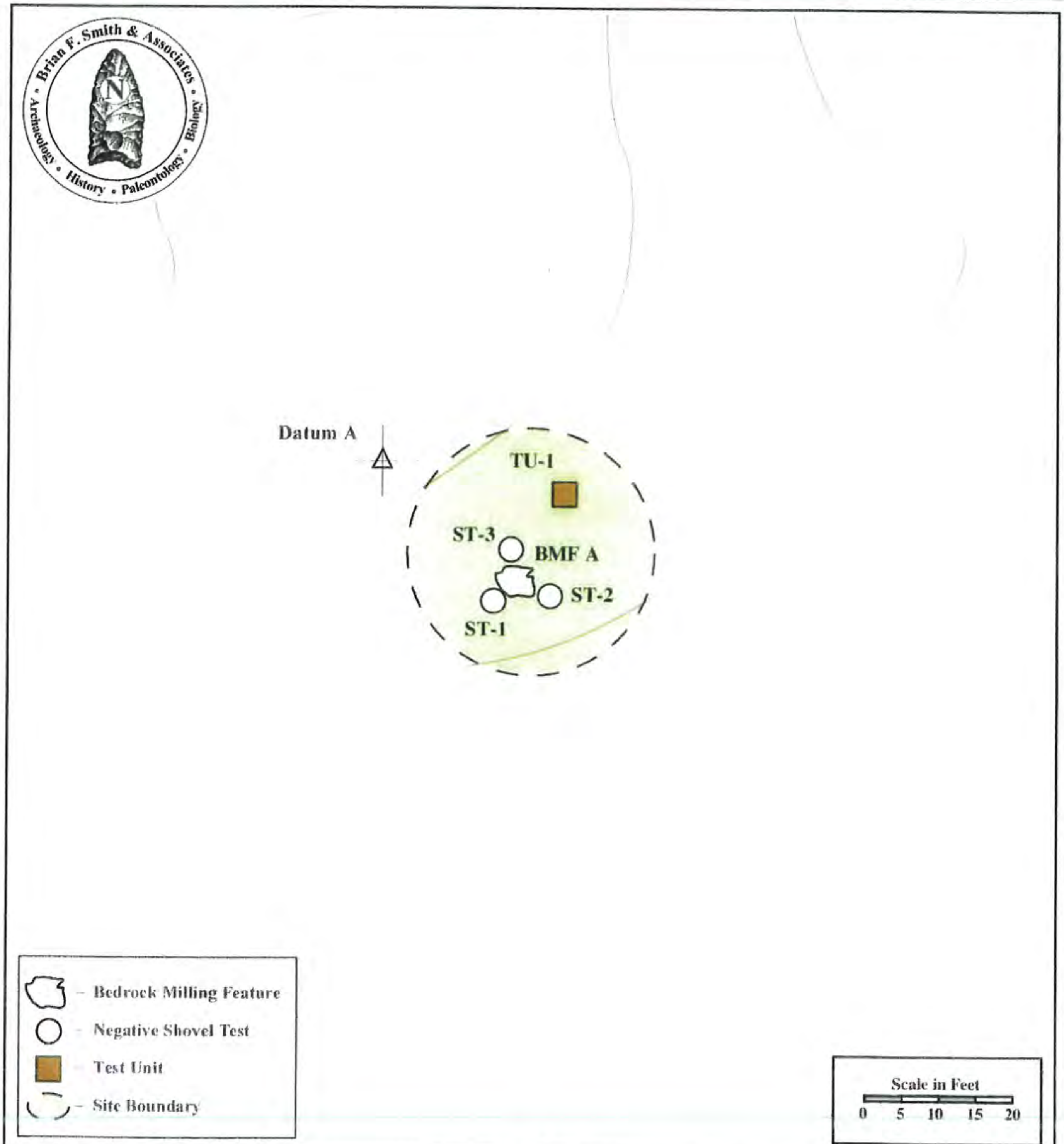
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary # P-37-028224
HRI#
Trinomial CA-SDI-18327

***Resource Name or #** (Assigned by recorder) Temp 3

***Drawn By:** BFSA

***Date:** March 1, 2007



Site Map
Site Temp 3
The 2007 SDSU Master Plan Project

*Required information

temp 3

SDI Number	Project Name	Catalog #	Provenience Type	Provenience Number	Datum	Azimuth Range Feet	Depth (cm)	Material Class	Material Type	Quantity	Weight (g)	Artifact Class	Artifact Type	Portion Of Artifact	Portion Elaborate	Measurement 1	Measurement 2	Measurement 3
Temp 3	SDSU Master Plan	1	Shovel Test	1	A	142/24'	0-10	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 3	SDSU Master Plan	2	Shovel Test	1			10-20	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 3	SDSU Master Plan	3	Shovel Test	1			20-30	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 3	SDSU Master Plan	4	Shovel Test	2	A	129/29'	0-10	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 3	SDSU Master Plan	5	Shovel Test	2			10-20	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 3	SDSU Master Plan	6	Shovel Test	2			20-30	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 3	SDSU Master Plan	7	Shovel Test	3	A	125/21'	0-10	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 3	SDSU Master Plan	8	Shovel Test	3			10-20	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 3	SDSU Master Plan	9	Shovel Test	3			20-30	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 3	SDSU Master Plan	10	Test Unit	1	A	97/7'	0-10	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 3	SDSU Master Plan	11	Test Unit	1			10-20	Lithic	Medium-grained Metavolcanic	1		Lithic Production Waste	Flake(s)					
Temp 3	SDSU Master Plan	12	Test Unit	1			20-30	Lithic	Quartzite	1	14.7	Expedient Tools	Utilized Flake(s)	fragment(s)		5.3	3.2	0.6
Temp 3	SDSU Master Plan	13	Test Unit	1			30-40	No Recovery	No Recovery			No Recovery	No Recovery					
Temp 3	SDSU Master Plan	14	Test Unit	1			40-50	No Recovery	No Recovery			No Recovery	No Recovery					

P-37-028224
CA-SDI-18327

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #: P-37-029023
HRI #:
Trinomial: CA-SDI-18589
NRHP Status Code:

Other Listings:
Review Code: Reviewer: Date:

 Resource Name or #: (Assigned by recorder): CN-S-1

P1. Other Identifier:

P2. **Location:** ■ Not for Publication □ Unrestricted **a. County**: Imperial
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
b. **USGS 7.5' Quad**: La Mesa Date: 1967 (Photorevised 1975) T16 S; R2W; Unsectioned Mission Lands; S.B.B.M.
c. Address: 5553 Toyon Road City: San Diego Zip: 92108
d. UTM: Zone 11; NAD 27; 491659mE/ 3626417mN
e. Other Locational Data (e.g., parcel #, directions to resource, elevation, etc., as appropriate): The 1.52-acre project area is located in the College Area Community in the eastern portion of the City of San Diego. The project area is south of Interstate 8 and west of San Diego State University. It is located at 5553 Toyon Road on the upper slope of a canyon. The site is located near the northwest corner of the property in relatively dense brush.

P3a. **Description** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries): The site consists of a can and bottle scatter with more than 50 items. The site measures approximately 10 m north/south by 5 m east/west. It appears to represent a roadside dump without subsurface deposits. Artifacts include 1 clear glass salt shaker with "#4" on the bottom, 1 clear drinking glass with no mark, 1 Coke bottle, 1 Squirt bottle, 1 Canada Dry water bottle, 1 wine bottle, 2 liquor bottles, and 6+beer bottles, 1 chrome car part, 1 television tube, 5 cone top cans, 30 sanitary cans with church key openings (beer-size) and 4 other sanitary cans.

P3b. **Resource Attributes** (List attributes and codes): AH4. Trash Scatter

P4. **Resources Present:** □Building □Structure □Object ■ Site □District □Element of District □Other (Isolates, etc.)

P5a. Photograph or Drawing (Photo required for buildings, structures, and objects)

P5b. Description of Photo (View, date, accession #):

P6. **Age and Sources:** ■ Historic □ Prehistoric □Both

P7. **Owner and Address**:
Steve Connor
351 Park Place Ranch
CA 92025

P8. **Recorded by** (Name, affiliation, and address):
Andrew Pigniolo
Laguna Mountain Environmental, Inc.
7969 Engineer Road, Suite 208
San Diego, CA 92111

P9. **Date Recorded**: 5 November 2007

P10. **Survey Type** (Describe):
Intensive Pedestrian Survey

P11. **Report Citation** (Cite survey report and other sources, or enter "none"):
Andrew Pigniolo
2007 Cultural Resource Survey For The Conner Residence Located At 5553 Toyon Road, City of San Diego, California

Attachments: □NONE ■ Location Map ■ Sketch Map □ Continuation Sheet □Building, Structure, and Object Record ■ Archaeological Record □District Record □Linear Feature Record □Milling Station Record □Rock Art Record □Artifact Record □Photograph Record □Other (List):

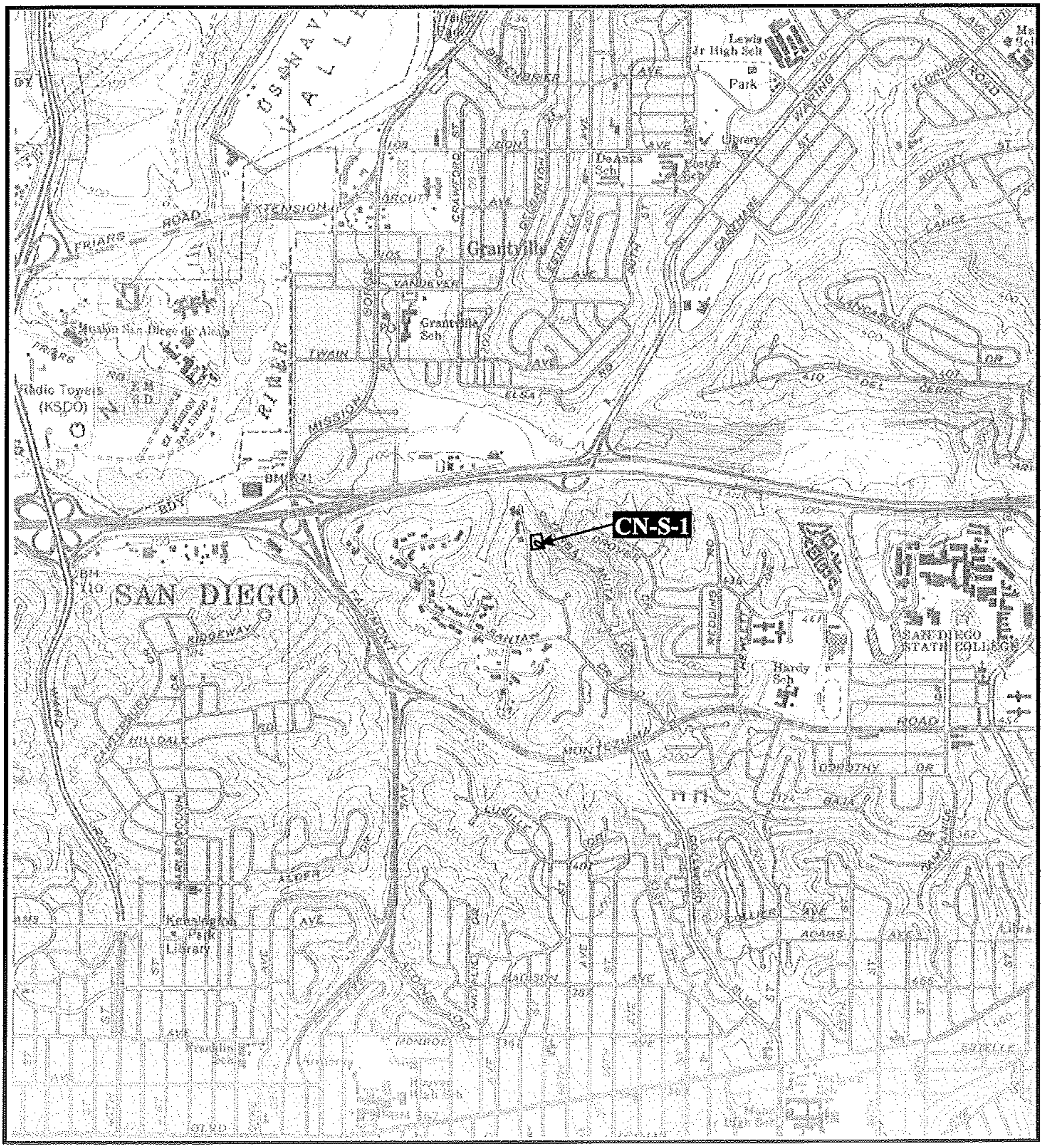
State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #: P-37-029023
Trinomial: CA-SDI-18589

LOCATION MAP

Resource Name or #: (Assigned by Recorder) CN-S-1

Map Name: USGS Quad Map (La Mesa) **Scale:** 1:24,000 **Date of Map:** 1967 (Photorevised 1975)



Required information is bold

Resource Name or #: (Assigned by recorder): CN-S-1

A1. **Dimensions:** a. Length: 10m N/S x b. Width: 5m E/W
Method of Measurement: ☐ Paced ☐ Taped ■ Visual estimate ☐ Other:
Method of Determination (check any that apply.): ■ Artifacts ☐ Features ☐Soil ☐Vegetation ☐Topography ☐Cut bank ☐Animal burrow ☐Excavation ☐Property boundary ☐Other (Explain):
Reliability of Determination: ☐ High ■ Medium ☐Low Explain: Good visibility of surface artifacts
Limitations (check any that apply): ☐Restricted access ☐Paved/built over ☐Site limits incompletely defined ■ Disturbances ☐Vegetation ☐Other (Explain):

A2. Depth: ☐None ■ Unknown Method of Determination: Subsurface deposits are unlikely.

A3. **Human Remains:** ☐ Present ☐Absent ☐Possible ■ Unknown (Explain): None observed on surface.

A4. **Features** (Number, briefly describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map.): None.

A5. **Cultural Constituents** (Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features.): Artifacts include 1 clear glass salt shaker with "#4" on the bottom, 1 clear drinking glass with no mark, 1 Coke bottle, 1 Squirt bottle, 1 Canada Dry water bottle, 1 wine bottle, 2 liquor bottles, and 6+beer bottles, 1 chrome car part, 1 television tube, 5 cone top cans, 30 sanitary cans with church key openings (beer-size) and 4 other sanitary cans. Time diagnostic items included a brown beer bottle with an "I" in a pentagon with "68" to the left, "52" to the right and "2" and "1 way" at the bottom along with "no deposit no return." Another brown beer bottle has with an "I" in a pentagon with "20" to the left, "51" to the right and "4A" and "Duraglas" "1 way" at the bottom along with "no deposit no return." One additional brown glass and three clear glass beer bottles also showed Owens Illinois maker's marks with "52" in the date position. Other maker's marks included two brown glass beer bottles with an "MG" and a "52" in the date position. A green Squirt bottle with a Owens Illinois maker's mark showed "52" in the date position. Another brown beer bottle has a Foster-Forbes Glass Company mark with the number "52" to the right, suggesting a date.

A6. **Were Specimens Collected?** ■ No ☐Yes (If yes, attach Artifact Record or catalog and identify where specimens are curated.)

A7. **Site Condition:** ■ Good ☐ Fair ☐ Poor (Describe disturbances.): The site retains good integrity probably due to its location in the brush.

A8. **Nearest Water** (Type, distance, and direction.): The closest fresh water source in the area was a small unnamed seasonal drainage located east of the project area. This seasonal drainage feeds into Alvarado Creek to the north which is a more perennial source of water.

A9. **Elevation:** 268 ft above mean sea level

A10. Environmental Setting (Describe culturally relevant variables such as vegetation, fauna, soils, geology, landform, slope, aspect, exposure, etc.): The project area is located on a small finger ridge of a larger ridge between Alvarado Canyon and an unnamed canyon to the south. Elevations range between 325 to 205 feet above mean sea level (AMSL). The area is a suburban mix of houses and open space canyons. Drought deciduous coastal sage scrub vegetation of the region is present along with some small open areas of native grass.

A11. Historical Information: N/A

A12. Age: ☐ Prehistoric ☐Protohistoric ☐1542-1769 ☐1769-1848 ☐1848-1880 ☐1880-1914 ☐1914-1945 ■ Post 1945 ☐Undetermined **(Describe position in regional prehistoric chronology or factual historic dates if known):**

A13. Interpretations (Discuss data potential, function(s), ethnic affiliation, and other interpretations): None

A14. Remarks: The overall deposit suggests a deposition in 1952 with some items showing minor curation, and is likely associated with illegal dumping.

A15. References (Documents, informants, maps, and other references): None

A16. Photographs (List subjects, direction of view, and accession numbers or attach a Photograph Record.):
Original Media/Negatives Kept at: Laguna Mountain Environmental, Inc.

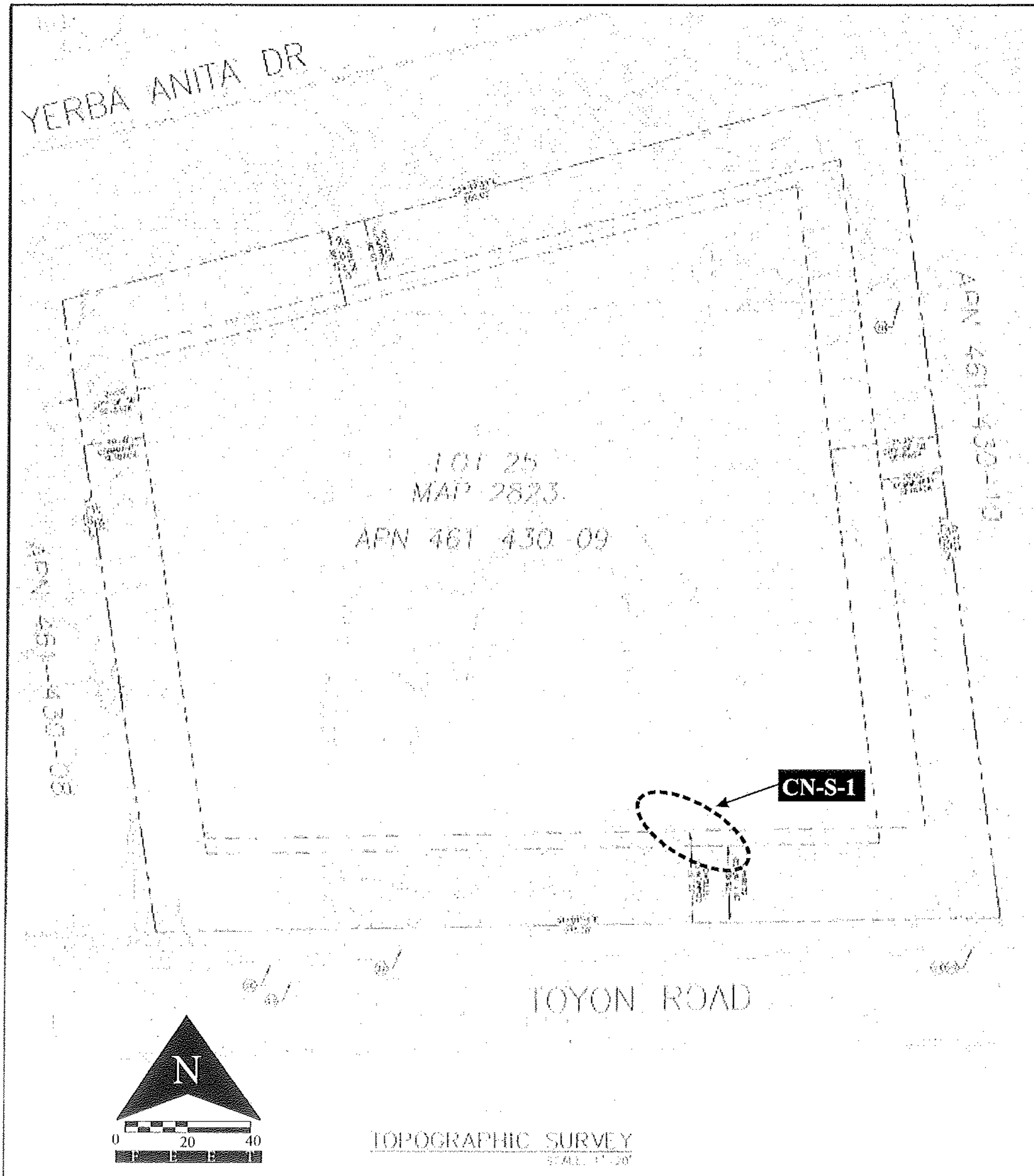
A17. Form Prepared by: Natalie Brodie Date: 19 December 2007
Affiliation and Address: Laguna Mountain Environmental, Inc.; 7969 Engineer Road, Suite 208; San Diego, CA 92111

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary #: P-37-029023
Trinomial: CA-SDI-18589

Resource Name or #: (Assigned by recorder): CN-S-1

Drawn By: A. Pigniolo **Date: 5 November 2007**



State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #: P-37-032674
HR #: CA-SDI-20702
Trinomial:
NRHP Status Code:
Other Listings:
Review Code: Reviewer: Date:

 Resource Name or #: TAL-I-1

P1. Other Identifier:

P2. **Location**: ■ Not for Publication ☐ Unrestricted **a. County:** San Diego
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
b. **USGS 7.5' Quad:** La Mesa Date: 1994 T 16 S; R 2 W; Unsectioned; S.B.**B.M.**
c. Address: southwest of 4828 Lila Drive
d. UTM: Zone 11 ; NAD83; 491558 m E/ 3625514 m N
e. Other Locational Data: The deposit was uncovered in the street southwest of 4828 Lila Drive near the intersection with Lorraine Drive, in the Talmadge area of San Diego, southwest of San Diego State University, at approximately 400 ft. elev.

P3a.**Description**: This resource consists of an isolated trash deposit encountered near the corner of Lila Dr. and Lorraine Dr.. The deposit was located just southwest of a storm drain between 4905 Lorraine Dr. and 4828 Lila Dr. (approximately across the sidewalk from the SW corner of 4828 Lila property), in the main line utility trench. The deposit consists of bottle glass fragments and concrete in disturbed fill soil. The collected artifacts represent 2 Coca-cola bottles (base marked 'SAN DIEGO, CALIF.'), 1 7-Up bottle, 2 amber (brown) liquor bottles, 1 blue bottle (probably medicinal), and pieces of a leather shoe. Concrete chunks were not retained. The artifacts were contained within the trench; the deposit did not appear to extend into the sidewalls. The liquor bottle base has a 1943 manufacture date code and the Coke bottles would have been made between 1937 and 1951. The neighborhood was developed in the late 1940s; the trash could be the result of illicit dumping prior to development or was transported in with fill-dirt during construction of the storm drain in 1949.

P3b.**Resource Attributes**: AH4. Trash Scatter

P4. **Resources Present:** ☐ Building ☐ Structure ☐ Object ■ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing: None
P5b. Description of Photo:

P6. **Age and Sources**
■ Historic ☐ Prehistoric ☐ Both

P7. **Owner and Address:**
City of San Diego ROW

P8. **Recorded by**:
N. Brodie
Laguna Mountain Environmental, Inc.
7969 Engineer Road, Suite 208
San Diego, CA 92111

P9. **Date Recorded:** January 26, 2007

P10. **Survey Type**: Construction Monitoring

P11. **Report Citation**:
2009 Pigniolo, Andrew R. and Natalie J. Brodie. *Cultural Resource Monitoring Report for the Block 3FF Talmadge Utility Undergrounding Project, City of San Diego, California*.

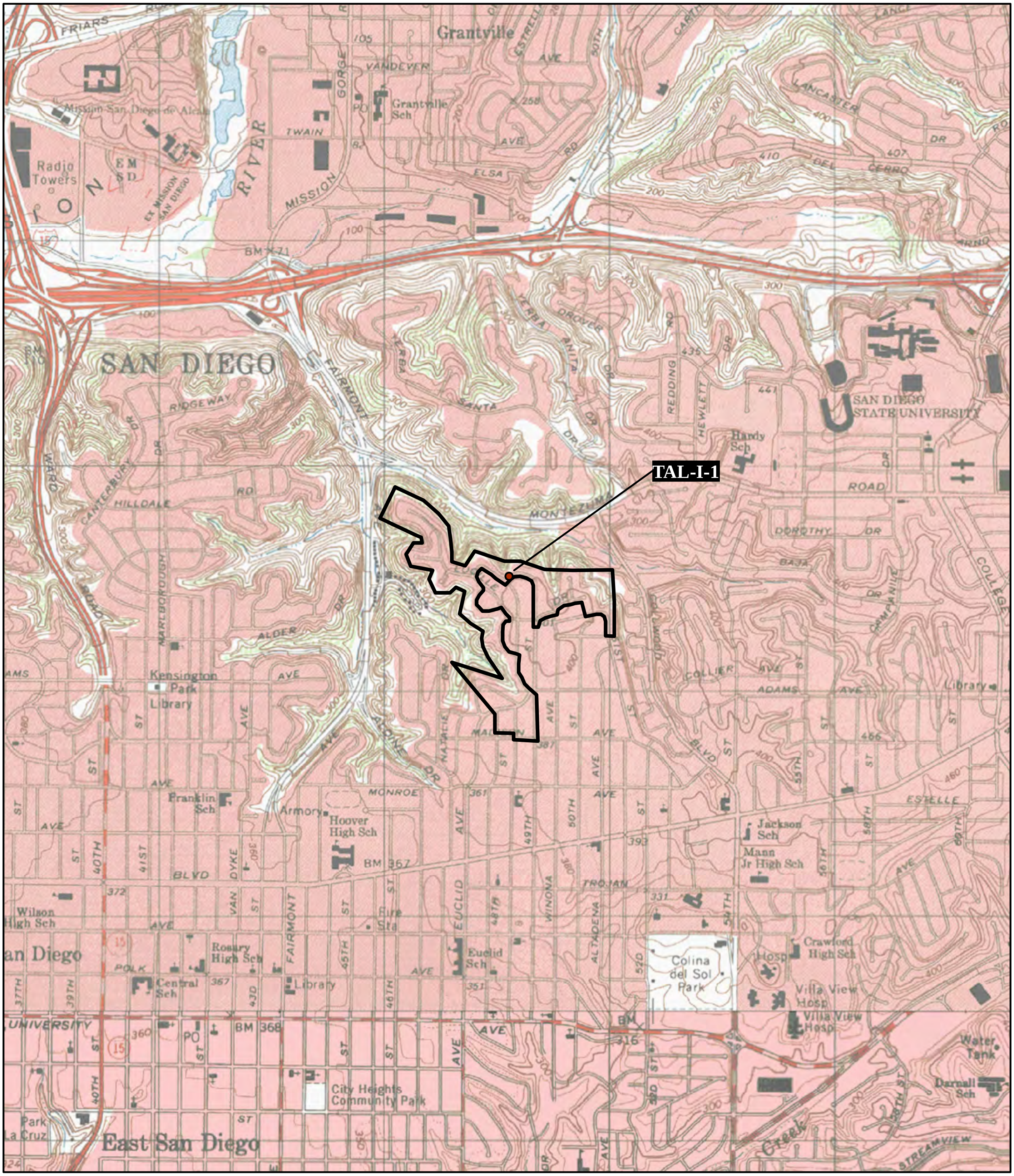
Attachments: ☐ NONE ■ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building ☐ Structure, and Object Record
■ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other (List):

State of California- The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #:
Trinomial: P-37-032674
CA-SDI-20702

Resource Name or #: TAL-I-1

Map Name: USGS 7.5' La Mesa Quadrangle **Scale: 1:24,000** **Date of Map: 1994**



Resource Name or #: TAL-I-1

A1. Dimensions: a. Length: <1 foot × **b. Width:** <1 foot
Method of Measurement: ☐ Paced ☐ Taped ■ Visual estimate ■ Other: dimension limits of trenching tool
Method of Determination (Check any that apply.): ■ Artifacts ☐ Features ☐ Soil ☐ Vegetation ☐ Topography ☐ Cut bank ☐ Animal burrow ■ Excavation ☐ Property boundary ■ Other (Explain): Trench excavation
Reliability of Determination: ■ High ☐ Medium ☐ Low Explain: Observed in trench
Limitations (Check any that apply): ☐ Restricted access ☐ Paved/built over ■ Site limits incompletely defined ☐ Disturbances ☐ Vegetation ■ Other (Explain): Trench width

A2. Depth: unknown ☐ None ☐ Unknown Method of Determination: found in spoils

A3. Human Remains: ☐ Present ■ Absent ☐ Possible ☐ Unknown (Explain):

A4. Features: n/a

A5. Cultural Constituents: Collected items represent 2 aqua Hobble skirt type embossed Coca-cola bottles, 1 Kelly green 7-Up bottle, 2 amber (brown) liquor bottles, 1 blue bottle (probably medicinal, like Milk of Magnesia), and pieces of a mans leather shoe. Both of the D-105529 type Coke bottles have base marks of an arched "SAN DIEGO" over straight across (in center) "CALIF." The slightly lighter tinted bottle has CALIF misspelled as CAILF however.

The leather shoe pieces seem to have a blue tint. The non-ferrous eyelets are very fragile and most have desintigrated. The shoe measures approximately 3.5" across the vamp ("ball" of foot area), indicating a mans size. The eyestay ("lacing strip") has 8 lace holes. The sole portion is missing; the layers appear to have been connected with rivet type fasteners (not nails).

A6. Were Specimens Collected? ☐ No ■ Yes Temporarily curated at Laguna Mountain Environmental, Inc.

A7. Site Condition: ☐ Good ■ Fair ☐ Poor (Describe disturbances.): material may be fill for storm drain construction

A8. Nearest Water: n/a for historic site

A9. Elevation: 400 ft.

A10. Environmental Setting**:** Urban residential.

A11. Historical Information: The cylinder liquor bottle has an Owens-Illinois Glass Co. **1943** date code. The Coke bottles have city name base markings used between 1937 & 1951 (Lockhart & Miller 2007:102). The ACL type of label on the 7-Up bottle was used between 1939 & 1963 (Lockhart 2005:21).

A12. Age: ☐ Prehistoric ☐ Protohistoric ☐ 1542-1769 ☐ 1769-1848 ☐ 1848-1880 ☐ 1880-1914 ■ 1914-1945 ☐ Post 1945 ☐ Undetermined **Describe position in regional prehistoric chronology or factual historic dates if known:**

A13. Interpretations: The deposit appears to represent a single discard episode of refuse prior to the 1944, or possibly the result of importing fill soil for storm drain construction.

A14. Remarks: 4828 Lila Dr. was built in 1947; other houses in the neighborhood were built in 1949-1951.

A15. References: Lockhart, Bill. 2005. The Other Site of the Story: A Look at the Back of Seven-Up Bottles. *Soda Fizz* 3(1)20-24**.**
Lockhart, Bill, and Michael R. Miller, 2007. *The Bottles, Marks, and History of the Southwestern Coca-Cola Bottling Co., New Mexico and Arizona, 1917-1947*. Lulu Publishing.

A16. Photographs: none

A17. Form Prepared by: C. Serr **Date:** June 22, 2012
Affiliation and Address: Laguna Mountain Environmental, Inc. 7969 Engineer Road, Suite 208 San Diego, CA 92111

State of California
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #_____________ P-37-035445
HRI #__________________
Trinomial_______________
NRHP Status Code____
Other Listings ________________________________
Review Code______Reviewer_______Date______

***Page** 1 of 12 ***Resource Name or #:** T-Mobile West LLC SD06026A/SDSU Physical Plant

***P1. Other Identifier**: San Diego State University Physical Plant

***P2: Location**: Not for publication Unrestricted **X** a. County: San Diego
And (P2b and P2c or P2d. Attach a location map as necessary.)

***b. USGS Quad** Point Loma ***Date**: 1975 T; R; ¼ of ¼ of Sec. ______ B.M.__________

c. Address: 5300 Montezuma Road City: San Diego Zip: 92115

d. UTM: (Give more than one large or linear resources) Zone: Me/ mN

e. Other Locational Data (e.g. parcel #, directions to resource, elevation, etc. as appropriate);
APN: 462-930-19

***P3a. Description** (Describe resource and its major elements, include design, materials, condition, alterations, size, setting and boundaries.)

The subject property is a multistory, multilevel, asymmetrical, irregular shaped, Modern style, physical plant building located on the campus of San Diego State University. The building has a concrete foundation, stucco and concrete exterior and a flat roof with multiple levels. The building steps down the hillside on a sloping lot. The building has multiple single metal doors leading to various departments. Many of the doors have small windows. Windows vary in size, shape and placement around the facades and include metal framed, fixed pane and casement style windows. A parking lot is present on the main level of the building. The building is in good condition with no major exterior alterations noted.

***P3b. Resource Attributes:** (List attributes and codes) HP 15: Educational Building

P4. Resources Present: **Building X** Structure Object Site District Element of District

P5b. Description of Photo: (View, date Accessions #) View NE/11/20/2013

***P6. Date Constructed/Age and Source** **Historic** **X** Prehistoric Both c. 1962/San Diego State University's Records ***P7. Address**: San Diego State University, 5300 Montezuma Road, San Diego, CA 92115 ***P8: Recorded by**: (Name, Affiliation, Address) K.A. Crawford, Crawford Historic Services, P.O. Box 634, La Mesa, CA ***P9. Date Recorded**: 11/20/2013

***P10. Type of Survey:** (Describe) Intensive ***P11: Report Citation** (Cite Survey Report and other sources, or enter "None".) None

***Attachments:** None Location Map Sketch Map **Continuation Sheet X Building, Structure and Object Record X** Archaeological Record District Record Liner Resource Record Milling Station Record Rock Art Record Artifact Record Photograph Record Other (List):

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
RESIDENCE, STRUCTURE, AND OBJECT RECORD

Primary #
HRI# P-37-035445
***NRHP Status Code**

***Page** 2 **of** 12 ***Resource Name or # (Assigned by Recorder):** T-Mobile West LLC SD06026A/SDSU Physical Plant

B1. Historic Name: San Diego State University Physical Plant

B2: Common Name: San Diego State University Physical Plant

B3. Original Use: Educational/Physical Plant

B4: Present Use: Educational/Physical Plant

***B5: Architectural Style:** Modern

***B6: Construction History:** (Construction Date, alterations and dates of alterations)
The subject building was constructed in approximately 1962. No major alterations to the building were noted.

***B7. Moved?** X **No** Yes Unknown Date: Original Location

***B8. Related Features:** San Diego State University campus

B9a. Architect: Unknown **b. Builder:** Unknown

***B10. Significance:** Development of San Diego State University and Modern Architecture **Area:** San Diego **Period of Significance:** 1962-Present **Property Type:** Educational/Industrial **Applicable Criteria:** A and C

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The subject property is located on the campus of San Diego State University. The University is the oldest educational institution in san Diego. Founded in 1897 as the San Diego Normal school, the original school was located in the downtown San Diego area. The school's original mission was to train local women to be elementary school teachers. In 1923, the school's name was changed to San Diego State Teacher's College. By the 1930s, the school had outgrown its original campus in University Heights and a decision was made to move the school to an undeveloped mesa on the eastern edge of the city. The school changed its name again in 1935 when it expanded its offerings beyond teacher training and became San Diego State College. The school continued to grow with new buildings and facilities built each decade until the present time. The campus continues to evolve as new buildings are constructed and older ones renovated or removed. The university became part of the California State University system in 1970 and the name was changed to San Diego State University (SDSU). The subject building was built as the Physical Plant in 1962. The building continues to operate in this capacity to the present time. No major alterations were noted and the university records do not indicate that the building is one the National Register of Historic Places. Several buildings, including the original sports stadium, are on the Register, but this building is not considered to be a contributing structure at this time.

B11. Additional Resource Attributes: (List attributes and codes) None

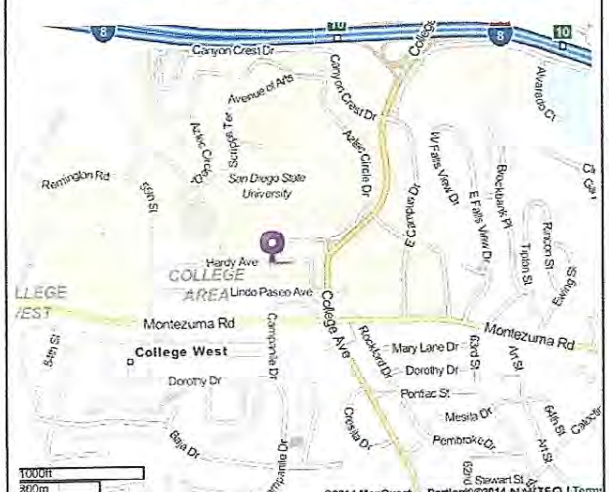
***B12. References:** McAlester and McAlester, *A Guide to American Houses*, 1991; Historicaerials.com; County of San Diego Assessor's Records; City of San Diego Building Department Records; San Diego State University Records

B13. Remarks: None

***B14: Evaluators:** K.A. Crawford

***Date of Evaluation:** 11/20/2013

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

(Continued from page 2)

Integrity Statement

In regard to the seven aspects of integrity – location, design, setting, materials, workmanship, feeling and association – the c. 1962 Modern style industrial building on this property has retained its original location. The building has not been moved. The setting, feeling, and association have not remained intact as the campus area surrounding the structure has changed. The design, materials and workmanship have basically remained the same. The integrity level is good and the condition of the building is good.

National Register of Historic Places Eligibility Evaluation

The property was assessed under National Register of Historic Places **Criterion A** for its potential significance as part of any historic trends or events that may have made a significant contribution to the broad patterns of our history. The building was constructed as part of the overall continuing commercial and residential development of the San Diego area which began in the 1850s and continues to the present time. There is no significant trend or event associated with the property. **Therefore, the property does not appear to meet the criteria for significance under Criterion A: Event.**

The property was assessed under National Register of Historic Places **Criterion B** for its potential significance and association with a person of importance in national history. There is no evidence to suggest that any of the persons associated with the construction or development of the building were considered important in the history of the property or nation. None of the persons associated with the property appear to be historically significant at the level necessary to meet the criteria for National Register of Historic Places. **Therefore, the property does not appear to meet the criteria for significance under Criterion B: Person.**

The property was assessed under National Register of Historic Places **Criterion C** for its potential significance as a property which embodies the distinctive characteristics of a type, period, method of construction or style of Modern architecture, represents the work of a master architect, builder or craftsman, possesses high artistic values, or represents a significant or distinguishable entity whose components lack individual distinction. The building's style does not rise to a level of significance to qualify for the National Register of Historic Places. The building is not a good example of the work of a master architect or craftsman as the no persons associated with the design or construction were identified. Therefore, the building cannot be considered to represent the work of a master architect, builder or craftsman. **Therefore, the property does not appear to meet the criteria for significance under Criterion C: Architecture as a good example of Modern style architecture**.

The property was assessed under National Register of Historic Places **Criterion D** for its potential significance and its ability to convey information. The property does not yield, or may not be likely to yield, information important in prehistory or history. In order for buildings, structures, or objects to be significant under Criterion D, they need to "be, or must have been, the principal source of information." This is not the case with this property. **Therefore, the property does not appear to meet the criteria for significance under Criterion D: Information Potential.**

In summary, the property does not appear to qualify for the National Register of Historic Places under any of the above criteria. Therefore, the building is not considered to be an historic resource for the purposes of the NHPA. The property was not accessed for eligibility under the California Register or local San Diego Register eligibility.

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ________________
HRI# ________________
Trinomial ________________

Page 4 of 12 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06026A/SDSU Physical Plant
*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013
Continuation X Update

T-Mobile West LLC SD06026A/SDSU Physical Plant
San Diego State University Physical Plant, 5300 Montezuma Road, San Diego, CA 92115
View Southeast
November 20, 2013

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ______________________
HRI# ______________________
Trinomial ______________________

Page 6 of 12 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06026A/SDSU Physical Plant
*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013
Continuation X Update

T-Mobile West LLC SD06026A/SDSU Physical Plant
San Diego State University Physical Plant, 5300 Montezuma Road, San Diego, CA 92115
View East
November 20, 2013

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ____________
HRI# ____________
Trinomial ____________

Page 6 of 12 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06026A/SDSU Physical Plant

*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013

Continuation X Update

T-Mobile West LLC SD06026A/SDSU Physical Plant
San Diego State University Physical Plant, 5300 Montezuma Road, San Diego, CA 92115
View North
November 20, 2013

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ________________
HRI# ________________
Trinomial ________________

 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06026A/SDSU Physical Plant
*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013
Continuation X Update

T-Mobile West LLC SD06026A/SDSU Physical Plant
San Diego State University Physical Plant, 5300 Montezuma Road, San Diego, CA 92115
View East
November 20, 2013

P-37-035445

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ______________________________
HRI# ______________________________
Trinomial ______________________________

Page 8 of 12 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06026A/SDSU Physical Plant
*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013
Continuation X Update

T-Mobile West LLC SD06026A/SDSU Physical Plant
San Diego State University Physical Plant, 5300 Montezuma Road, San Diego, CA 92115
View East
November 20, 2013

P-37-035445

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ________________________
HRI# ________________________
Trinomial ________________________

Page 9 of 12 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06026A/SDSU Physical Plant
*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013
Continuation X Update

T-Mobile West LLC SD06026A/SDSU Physical Plant
San Diego State University Physical Plant, 5300 Montezuma Road, San Diego, CA 92115
View North
November 20, 2013

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ______________
HRI# ______________
Trinomial ______________

Page 10 of 12 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06026A/SDSU Physical Plant
*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013
Continuation X Update

T-Mobile West LLC SD06026A/SDSU Physical Plant
San Diego State University Physical Plant, 5300 Montezuma Road, San Diego, CA 92115
View West
November 20, 2013

P-37-035445

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ___________________
HRI# ___________________
Trinomial ___________________

Page 11 of 12 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06026A/SDSU Physical Plant
*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013
Continuation X Update

T-Mobile West LLC SD06026A/SDSU Physical Plant
San Diego State University Physical Plant, 5300 Montezuma Road, San Diego, CA 92115
View West
November 20, 2013

P-37-035445

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ______________________________
HRI# ______________________________
Trinomial ______________________________

Page 11 of 12 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06026A/SDSU Physical Plant
*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013
Continuation X Update

T-Mobile West LLC SD06026A/SDSU Physical Plant
San Diego State University Physical Plant, 5300 Montezuma Road, San Diego, CA 92115
View West
November 20, 2013

P-37-035445

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION

CONTINUATION SHEET

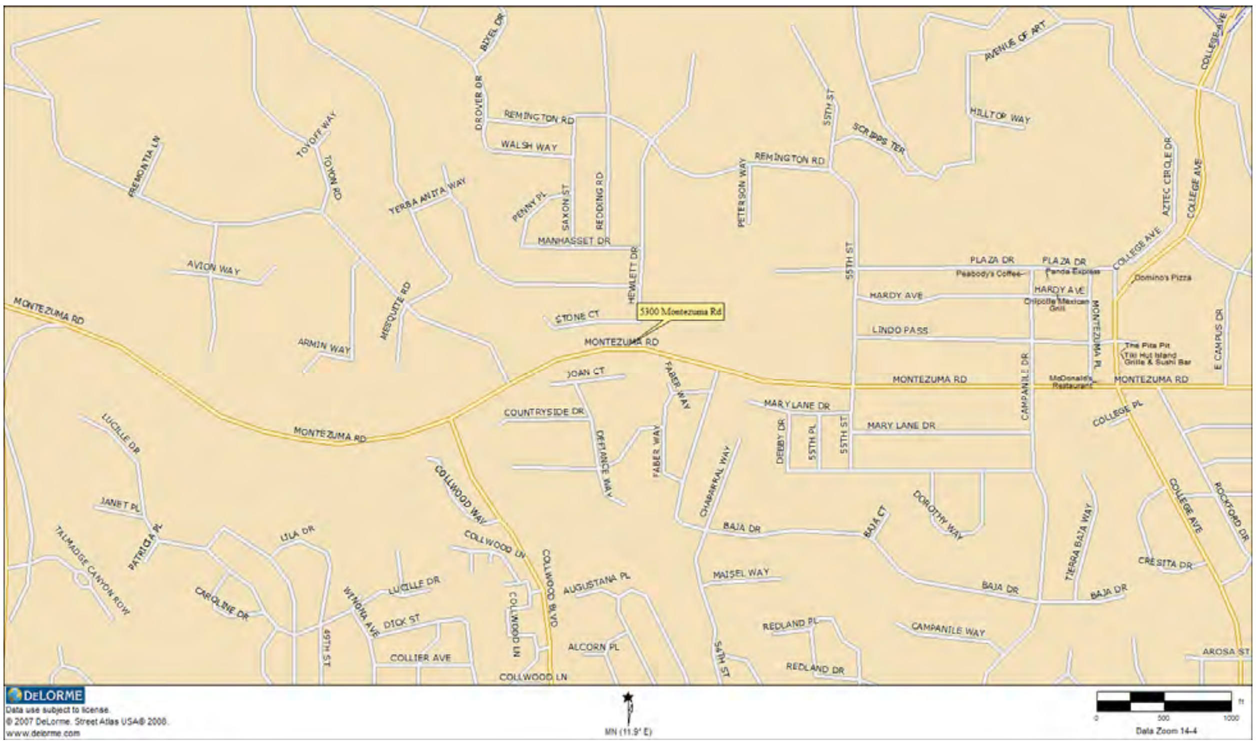
Primary # ______________
HRI# ______________
Trinomial ______________

Page 12 of 12 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06026A/SDSU Physical Plant

*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013

Continuation X Update

T-Mobile West LLC SD06026A/SDSU Physical Plant
San Diego State University Physical Plant, 5300 Montezuma Road, San Diego, CA 92115



State of California
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #_____________ P-37-035449
HRI #__________________
Trinomial_______________
NRHP Status Code____
Other Listings ________________________________
Review Code______Reviewer_______Date______

***Page** 1 of 11 ***Resource Name or #:** T-Mobile West LLC SD06417A/SDSU Recital Hall
***P1. Other Identifier**: San Diego State University Smith Recital Hall
***P2: Location**: Not for publication Unrestricted **X** a. County: San Diego
And (P2b and P2c or P2d. Attach a location map as necessary.)
***b. USGS Quad** Point Loma ***Date**: 1975 T; R; ¼ of ¼ of Sec. ______ B.M.___________
c. Address: 5300 Montezuma Road City: San Diego Zip: 92115
d. UTM: (Give more than one large or linear resources) Zone: Me/ mN
e. Other Locational Data (e.g. parcel #, directions to resource, elevation, etc. as appropriate);
APN: 462-230-19
***P3a. Description** (Describe resource and its major elements, include design, materials, condition, alterations, size, setting and boundaries.)
The subject property is a two-story with basement, rectangular shaped, Modern style, education building located on the campus of San Diego State University. The building has a concrete foundation, concrete block exterior and a flat roof. The building includes arched detailing with vertical columns dividing the facades into even spaces. The columns rise to the roofline, creating arched openings. The second floor has an open balcony around all four sides. The east façade contains a wide set of concrete steps leading to the ground floor of the building. The building contains classrooms with single metal doors. Open metal staircases are present at various points around the building to provide second floor access. The building is in good condition with no major alterations noted.
***P3b. Resource Attributes:** (List attributes and codes) HP 15: Educational Building

P4. Resources Present: **Building X** Structure Object Site District Element of District
P5b. Description of Photo: (View, date Accessions #) View E/11/20/2013
***P6. Date Constructed/Age and Source Historic X** Prehistoric Both c. 1969/San Diego County Assessor's Records ***P7. Address**: San Diego State University, 5300 Montezuma Road, San Diego, CA
***P8: Recorded by**: (Name, Affiliation, Address) K.A. Crawford, Crawford Historic Services, P.O. Box 634, La Mesa, CA ***P9. Date Recorded**: 11/20/2013
***P10. Type of Survey:** (Describe) Intensive ***P11: Report Citation** (Cite Survey Report and other sources, or enter "None".) None
***Attachments:** None Location Map Sketch Map **Continuation Sheet X Building, Structure and Object Record X** Archaeological Record District Record Liner Resource Record Milling Station Record Rock Art Record Artifact Record Photograph Record Other (List):

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
RESIDENCE, STRUCTURE, AND OBJECT RECORD

Primary #
HRI# P-37-035449
***NRHP Status Code**

***Page** 2 of 11 ***Resource Name or # (Assigned by Recorder)**: T-Mobile West LLC SD06417A/SDSU Recital Hall

B1. Historic Name: San Diego State University,Smith Recital Hall

B2: Common Name: San Diego State University,Smith Recital Hall

B3. Original Use: Educational/recital Hall

B4: Present Use: Educational/Recital Hall

***B5: Architectural Style**: Modern

***B6: Construction History**: (Construction Date, alterations and dates of alterations)
The subject building was constructed in approximately 1969. No major alterations to the building were noted.

***B7. Moved?** X **No** Yes Unknown Date: Original Location

***B8. Related Features**: San Diego State University campus

B9a. Architect: Unknown **b. Builder:** Unknown

***B10. Significance:** Development of San Diego State University and Modern Architecture **Area:** San Diego **Period of Significance:** 1969-Present **Property Type:** Educational **Applicable Criteria:** A and C
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The subject property is located on the campus of San Diego State University. The University is the oldest educational institution in san Diego. Founded in 1897 as the San Diego Normal school, the original school was located in the downtown San Diego area. The school's original mission was to train local women to be elementary school teachers. In 1923, the school's name was changed to San Diego State Teacher's College. By the 1930s, the school had outgrown its original campus in University Heights and a decision was made to move the school to an undeveloped mesa on the eastern edge of the city. The school changed its name again in 1935 when it expanded its offerings beyond teacher training and became San Diego State College. The school continued to grow with new buildings and facilities built each decade until the present time. The campus continues to evolve as new buildings are constructed and older ones renovated or removed. The university became part of the California State University system in 1970 and the name was changed to San Diego State University (SDSU). The subject building was built as the Smith Recital Hall in 1967 and includes multiple classrooms, rehearsal halls, and a small performing space. The building has remained in essentially original condition with no major exterior alterations. The building has undergone general tenant improvements over the decades to maintain the building. The building continues to be used for educational and performing purposes.

B11. Additional Resource Attributes: (List attributes and codes) None

***B12. References**: McAlester and McAlester, *A Guide to American Houses*, 1991; Historicaerials.com; County of San Diego Assessor's Records; City of San Diego Building Department Records.

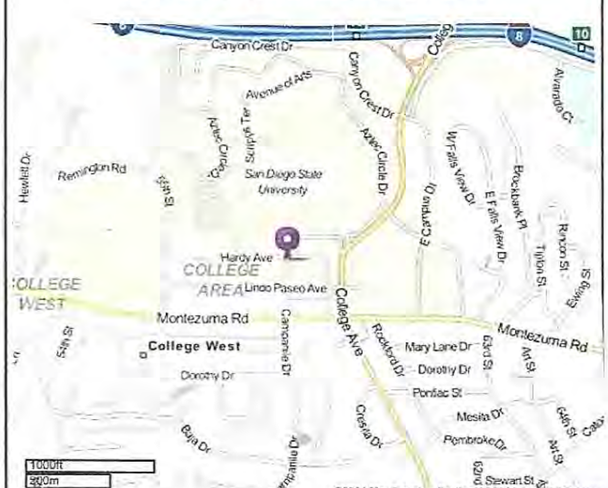
B13. Remarks: None

***B14: Evaluators**: K.A. Crawford

***Date of Evaluation**: 11/20/2013

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



(Continued from page 2)

Integrity Statement

In regard to the seven aspects of integrity – location, design, setting, materials, workmanship, feeling and association – the c. 1969 Modern style educational building on this property has retained its original location. The building has not been moved. The setting, feeling, and association have not remained intact as the campus area surrounding the structure has changed. The design, materials and workmanship have basically remained the same. The integrity level is good and the condition of the building is good.

National Register of Historic Places Eligibility Evaluation

The property was assessed under National Register of Historic Places **Criterion A** for its potential significance as part of any historic trends or events that may have made a significant contribution to the broad patterns of our history. The building was constructed as part of the overall continuing commercial and residential development of the San Diego area which began in the 1850s and continues to the present time. There is no significant trend or event associated with the property. **Therefore, the property does not appear to meet the criteria for significance under Criterion A: Event.**

The property was assessed under National Register of Historic Places **Criterion B** for its potential significance and association with a person of importance in national history. There is no evidence to suggest that any of the persons associated with the construction or development of the building were considered important in the history of the property or nation. None of the persons associated with the property appear to be historically significant at the level necessary to meet the criteria for National Register of Historic Places. **Therefore, the property does not appear to meet the criteria for significance under Criterion B: Person.**

The property was assessed under National Register of Historic Places **Criterion C** for its potential significance as a property which embodies the distinctive characteristics of a type, period, method of construction or style of Modern architecture, represents the work of a master architect, builder or craftsman, possesses high artistic values, or represents a significant or distinguishable entity whose components lack individual distinction. The building's style does not rise to a level of significance to qualify for the National Register of Historic Places. The building is not a good example of the work of a master architect or craftsman as the no persons associated with the design or construction were identified. Therefore, the building cannot be considered to represent the work of a master architect, builder or craftsman. **Therefore, the property does not appear to meet the criteria for significance under Criterion C: Architecture as a good example of Modern style architecture**.

The property was assessed under National Register of Historic Places **Criterion D** for its potential significance and its ability to convey information. The property does not yield, or may not be likely to yield, information important in prehistory or history. In order for buildings, structures, or objects to be significant under Criterion D, they need to "be, or must have been, the principal source of information." This is not the case with this property. **Therefore, the property does not appear to meet the criteria for significance under Criterion D: Information Potential.**

In summary, the property does not appear to qualify for the National Register of Historic Places under any of the above criteria. Therefore, the building is not considered to be an historic resource for the purposes of the NHPA. The property was not accessed for eligibility under the California Register or local San Diego Register eligibility.

P-37-035449

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ________________
HRI# ________________
Trinomial ________________

Page 4 of 11 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06417A/SDSU Recital Hall

*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013

Continuation X Update

T-Mobile West LLC SD06417A/SDSU Recital Hall
Smith Recital Hall, San Diego State University, 5300 Montezuma Road, San Diego, CA 92115
View East
November 20, 2013

P-37-035449

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ________________________________
HRI# ____________________________________
Trinomial _________________________________

Page 5 of 11 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06417A/SDSU Recital Hall
*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013
Continuation X Update

T-Mobile West LLC SD06417A/SDSU Recital Hall
Smith Recital Hall, San Diego State University, 5300 Montezuma Road, San Diego, CA 92115
View South
November 20, 2013

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

P-37-035449

Primary # ______________________
HRI# ______________________
Trinomial ______________________

Page 6 of 11 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06417A/SDSU Recital Hall

*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013

Continuation X Update

T-Mobile West LLC SD06417A/SDSU Recital Hall
Smith Recital Hall, San Diego State University, 5300 Montezuma Road, San Diego, CA 92115
View West
November 20, 2013

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ____________________
HRI# ____________________
Trinomial ____________________

Page 7 of 11 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06417A/SDSU Recital Hall
*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013
Continuation X Update

T-Mobile West LLC SD06417A/SDSU Recital Hall
Smith Recital Hall, San Diego State University, 5300 Montezuma Road, San Diego, CA 92115
View West
November 20, 2013

P-37-035449

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ______________________
HRI# ______________________
Trinomial ______________________

Page 8 of 11 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06417A/SDSU Recital Hall
*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013
Continuation X Update

T-Mobile West LLC SD06417A/SDSU Recital Hall
Smith Recital Hall, San Diego State University, 5300 Montezuma Road, San Diego, CA 92115
View West
November 20, 2013

P-37-035449

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ______
HRI# ______
Trinomial ______

Page 9 of 11 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06417A/SDSU Recital Hall
*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013
Continuation X Update

T-Mobile West LLC SD06417A/SDSU Recital Hall
Smith Recital Hall, San Diego State University, 5300 Montezuma Road, San Diego, CA 92115
View West
November 20, 2013

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ___
HRI# ___
Trinomial ___

 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06417A/SDSU Recital Hall
*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013
Continuation X Update

T-Mobile West LLC SD06417A/SDSU Recital Hall
Smith Recital Hall, San Diego State University, 5300 Montezuma Road, San Diego, CA 92115
View East
November 20, 2013

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

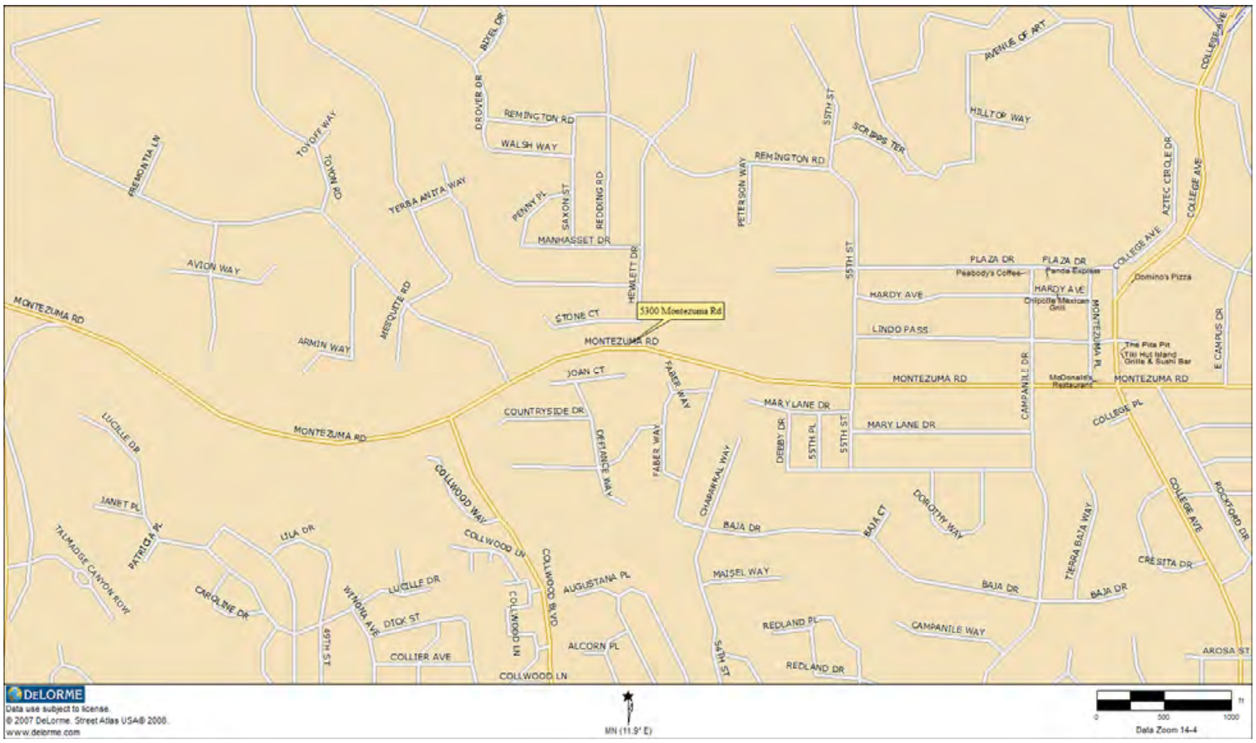
Primary # ______________
HRI# ______________
Trinomial ______________

Page 11 of 11 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06417A/SDSU Recital Hall

*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013

Continuation X Update

T-Mobile West LLC SD06417A/SDSU Recital Hall
Smith Recital Hall, San Diego State University, 5300 Montezuma Road, San Diego, CA 92115



P-37-035560

State of California
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #____________
HRI #________________
Trinomial_____________
NRHP Status Code____
Other Listings ______________________________
Review Code______Reviewer_______Date______

***Page** 1 of 11 ***Resource Name or #:** T-Mobile West LLC SD06702A/SD702 Alliance for Africa
***P1. Other Identifier**: Alliance for African Assistance
***P2: Location**: Not for publication Unrestricted **X** a. County: San Diego
And (P2b and P2c or P2d. Attach a location map as necessary.)
***b. USGS Quad** Point Loma ***Date**: 1975 T; R; ¼ of ¼ of Sec. ______ B.M.__________
c. Address: 5952 El Cajon Boulevard City: San Diego Zip: 92115
d. UTM: (Give more than one large or linear resources) Zone: Me/ mN
e. Other Locational Data (e.g. parcel #, directions to resource, elevation, etc. as appropriate);
APN: 566-602-3200
***P3a. Description** (Describe resource and its major elements, include design, materials, condition, alterations, size, setting and boundaries.)

The building is a two-story, asymmetrical, rectangular shaped, Modern style, commercial office building located on a main commercial artery in the East San Diego area of the City of San Diego. The building has a concrete foundation, stucco exterior, and a flat roof with penthouse. The building has an entrance located at the junction of the south and west walls and includes metal and glass doors. Above the tower is a circular detail, providing a contrast to the strong horizontal and vertical lines. The south façade contains metal framed, fixed pane, full height windows on the two floors. The west façade contains includes narrow, vertical window section sections with fixed pane windows. The north and east facades are blank facades. Signage is present on the building. The building has been altered with door and window changes. The building is in good condition. .

***P3b. Resource Attributes:** (List attributes and codes) HP 6: 1-3 Story Commercial Building

P4. Resources Present: **Building X** Structure Object Site District Element of District
P5b. Description of Photo: (View, date Accessions #) View N/11/20/2013
***P6. Date Constructed/Age and Source Historic X** Prehistoric Both c. 1940/San Diego County Assessor's Records
***P7. Address**: Alliance for African Assistance, 5952 El Cajon Boulevard, San Diego, CA 92115
***P8: Recorded by**: (Name, Affiliation, Address) K.A. Crawford, Crawford Historic Services, P.O. Box 634, La Mesa, CA
***P9. Date Recorded**: 11/20/2013

***P10. Type of Survey:** (Describe) Intensive ***P11: Report Citation** (Cite Survey Report and other sources, or enter "None".) None ***Attachments:** None Location Map Sketch Map **Continuation Sheet X Building, Structure and Object Record X** Archaeological Record District Record Liner Resource Record Milling Station Record Rock Art Record Artifact Record Photograph Record Other (List):

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
RESIDENCE, STRUCTURE, AND OBJECT RECORD

Primary #____________
HRI #________________
***NRHP Status Code____**

***Page** 1 of 11 ***Resource Name or # (Assigned by Recorder):** T-Mobile West LLC SD06702A/SD702 Alliance for Africa

B1. Historic Name: None

B2. Common Name: Alliance for African Assistance

B3. Original Use: Commercial/Office

B4. Present Use: Commercial/Office

***B5. Architectural Style:** Modern

***B6. Construction History:** (Construction Date, alterations, and dates of alterations)

The subject building was constructed in approximately 1940. The south and west facades have undergone alterations to the doors and windows. The interior has undergone various changes to accommodate new occupants and general tenant improvements.

***B7. Move?** X **No** Yes Unknown Date: Original Location

***B8. Related Features:** Parking Lot

B9a. Architect: Unknown **b. Builder:** Unknown

***B10. Significance:** Development of San Diego and Modern Architecture **Area:** East San Diego **Period of Significance:** 19-Present **Property Type:** Commercial **Applicable Criteria:** A and C

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

In 1911, Oscar Cotton, a major developer of Pacific Beach, purchased 6,000 lots in the east San Diego area, including some in the City Heights section. One year later, the City of East San Diego was incorporated and by this time, the surrounding population had reach over 5,000 people, all of whom required jobs, goods, services and reliable transportation. The newly formed City of East San Diego began to build infrastructure elements such as city offices and fire stations. A Carnegie Library was built near the subject property area. Difficulties with supporting city services such as water and sewer systems led to a move in 1924 to annexation and the East San Diego area was annexed to the city of San Diego. Normal Heights and Kensington were added to the city in 1925. The subject property was built in approximately 1940 as part of the overall general commercial expansion and development of the El Cajon Boulevard area. The building has been used as a commercial office property since its construction with a variety of tenants. It is currently occupied by the Alliance for African ASSISTANCE. The group was formed in 1989 by Walter Lam, a refugee from Africa. The subject property was chosen to be accessible to the rapidly growing African population in the East San Diego area. The group provides financial assistance, counseling, social, cultural and educational support and assistance with the resettlement process. The group has operating at this location for over twenty years.

B11. Additional Resources Attributes: (List attributes and codes) None

***B12. References:** McAlester and McAlester, *A Guide to American Houses,* 1991; Historicaerials.com; County of San Diego Assessor's Records; City of San Diego Building Department Records.

B13. Remarks: None

***B14. Evaluations:** K.A. Crawford

***Date of Evaluation:** 11/20/2013

(This space reserved for official comments)

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ____
HRI# ____
Trinomial ____

 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06702A/SD702 Alliance for Africa

*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013

Continuation X Update

(Continued from page 2)

Integrity Statement

In regard to the seven aspects of integrity – location, design, setting, materials, workmanship, feeling and association – the c.1940 Modern style commercial building on this property has retained its original location. The building has not been moved. The setting, feeling, and association have not remained intact as the urban area surrounding the structure has changed. The design, materials and workmanship have been altered by door and window changes. The integrity level is fair and the condition of the building is good.

National Register of Historic Places Eligibility Evaluation

The property was assessed under National Register of Historic Places **Criterion A** for its potential significance as part of any historic trends or events that may have made a significant contribution to the broad patterns of our history. The building was constructed as part of the overall continuing commercial and residential development of the East San Diego area which began in the 1910s and continues to the present time. There is no significant trend or event associated with the property. **Therefore, the property does not appear to meet the criteria for significance under Criterion A: Event.**

The property was assessed under National Register of Historic Places **Criterion B** for its potential significance and association with a person of importance in national history. There is no evidence to suggest that any of the persons associated with the construction or development of the building were considered important in the history of the property or nation. None of the persons associated with the property appear to be historically significant at the level necessary to meet the criteria for National Register of Historic Places. **Therefore, the property does not appear to meet the criteria for significance under Criterion B: Person.**

The property was assessed under National Register of Historic Places **Criterion C** for its potential significance as a property which embodies the distinctive characteristics of a type, period, method of construction or style of Modern architecture, represents the work of a master architect, builder or craftsman, possesses high artistic values, or represents a significant or distinguishable entity whose components lack individual distinction. The building's style does not rise to a level of significance to qualify for the National Register of Historic Places. The building is not a good example of the work of a master architect or craftsman as the no persons associated with the design or construction were identified. Therefore, the building cannot be considered to represent the work of a master architect, builder or craftsman. **Therefore, the property does not appear to meet the criteria for significance under Criterion C: Architecture as a good example of Modern style architecture.**

The property was assessed under National Register of Historic Places **Criterion D** for its potential significance and its ability to convey information. The property does not yield, or may not be likely to yield, information important in prehistory or history. In order for buildings, structures, or objects to be significant under Criterion D, they need to "be, or must have been, the principal source of information." This is not the case with this property. **Therefore, the property does not appear to meet the criteria for significance under Criterion D: Information Potential.**

In summary, the property does not appear to qualify for the National Register of Historic Places under any of the above criteria. Therefore, the building is not considered to be an historic resource for the purposes of the NHPA. The property was not accessed for eligibility under the California Register or local San Diego Register eligibility.

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ______
HRI# ______
Trinomial ______

Page 4 of 11 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06702A/SD702 Alliance for Africa

*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013

Continuation X Update

T-Mobile West LLC SD06702A/SD702 Alliance for Africa
Alliance for African Assistance, 5952 El Cajon Boulevard, San Diego, CA 92115
View Northeast
November 20, 2013

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ______________________
HRI# ______________________
Trinomial ______________________

Page 5 of 11 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06702A/SD702 Alliance for Africa

*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013

Continuation X Update

T-Mobile West LLC SD06702A/SD702 Alliance for Africa
Alliance for African Assistance, 5952 El Cajon Boulevard, San Diego, CA 92115
View North
November 20, 2013

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ______
HRI# ______
Trinomial ______

 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06702A/SD702 Alliance for Africa

*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013
Continuation X Update

T-Mobile West LLC SD06702A/SD702 Alliance for Africa
Alliance for African Assistance, 5952 El Cajon Boulevard, San Diego, CA 92115
View North
November 20, 2013

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ______________________
HRI# ______________________
Trinomial ______________________

Page 7 of 11 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06702A/SD702 Alliance for Africa
*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013
Continuation X Update

T-Mobile West LLC SD06702A/SD702 Alliance for Africa
Alliance for African Assistance, 5952 El Cajon Boulevard, San Diego, CA 92115
View Northwest
November 20, 2013

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ______________________
HRI# ______________________
Trinomial ______________________

Page 8 of 11 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06702A/SD702 Alliance for Africa

*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013

Continuation X Update

T-Mobile West LLC SD06702A/SD702 Alliance for Africa
Alliance for African Assistance, 5952 El Cajon Boulevard, San Diego, CA 92115
View South
November 20, 2013

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ______
HRI# ______
Trinomial ______

Page 9 of 11 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06702A/SD702 Alliance for Africa

*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013

Continuation X Update

T-Mobile West LLC SD06702A/SD702 Alliance for Africa
Alliance for African Assistance, 5952 El Cajon Boulevard, San Diego, CA 92115
View Southeast
November 20, 2013

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ______________
HRI# ______________
Trinomial ______________

Page 10 of 11 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06702A/SD702 Alliance for Africa

*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013

Continuation X Update

T-Mobile West LLC SD06702A/SD702 Alliance for Africa
Alliance for African Assistance, 5952 El Cajon Boulevard, San Diego, CA 92115
View East
November 20, 2013

State of California – The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # ____________
HRI# ____________
Trinomial ____________

Page 11 of 11 *Resource Name or # (Assigned by recorder) T-Mobile West LLC SD06702A/SD702 Alliance for Africa

*Recorded by K.A. Crawford/Crawford Historic Services Date November 20, 2013

Continuation X Update

T-Mobile West LLC SD06702A/SD702 Alliance for Africa
Alliance for African Assistance, 5952 El Cajon Boulevard, San Diego, CA 92115

State of California ! The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
P-37-035594
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

 ***Resource Name or #:** Martin & Enid Gleich/Henry Hester & Ronald K Davis House APN: 461-600-04

P1. Other Identifier:
***P2. Location:** ☐ **Not for Publication** ☐ **Unrestricted** ***a. County:**
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** **Date:** **T** ; **R** ; **¼ of** **¼ of Sec** **;** M.D. **B.M.**
c. Address: 5120 Norris Road City: San Diego Zip: 92115
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: This property is located in the U.S.G.S. quadrangle San Diego as a portion of Lot 4 of the Alvarado Terrace Subdivision Map #3509. The Subdivision Map #3509 was approved by the Union Title Insurance and Trust Company on June 20, 1956, by the San Diego Planning Commission on September 19, 1956 and by the County of San Diego on September 25, 1956. The house at 5120 Norris Road is in an area generally known today as Alvarado Estates, near San Diego State University.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The 1957 Martin & Enid Gleich/Henry Hester & Ronald K. Davis House is an excellent example of a Post & Beam/Organic Geometric Modernism house. The 5,345 square feet, six bedroom, five and one-half bathroom Modernism house sits on nearly a full acre of property and is a custom and highly individual module design and creatively sited taking full advantage of the lot shape and size. Organic features also include the emphasis on rectilinear geometry, asymmetrical facades and angular shapes. The house features courtyards and a central interior courtyard. The Gleich/Hester& Davis house is a wood frame house with vertical siding and desert fieldstone and on a concrete slab.

It includes many character-defining features of a mid-century Modernism house, including indoor/outdoor spaces with the swimming pool as a focal point; free-flowing floor plan; post and beam construction, expansive use of glass throughout the perimeter facing the interior courtyard and the backyard, most of which are floor-to-ceiling with sliding glass doors permitting a blurring of the indoors and outdoors. Other character-defining features include a flat roof, horizontal massing, wide overhanging eaves and exposed wood beams, privacy toward the street and large portico carport.

***P3b. Resource Attributes:** (List attributes and codes)
***P4. Resources Present:** ☒ Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)
P5b. Description of Photo: (View, date, accession #) West elevation, November 23, 2013

P5a. Photo or Drawing (Photo required for building structures and objects)

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both

***P7. Owner and Address:**
Julie Dunne
5120 Norris Road
San Diego CA 92115

***P8. Recorded by:** (Name, affiliation, and address)
Allen Hazard and Janet O'Dea
1824 Sunset Blvd.
San Diego CA 92103

***P9. Date Recorded:** January 20, 2014
***P10. Survey Type:** (Describe) Intensive.

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☒Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code**

***Resource Name:** Martin & Enid Gleich/Henry Hester & Ronald K Davis House

B1. Historic Name: Martin & Enid Gleich/Henry Hester & Ronald K Davis House

B2. Common Name:

B3. Original Use: Single Family Residence B4. Present Use: Single Family Residence

***B5. Architectural Style:** Post & Beam/Organic Geometric Modernism

***B6. Construction History:** (Construction date, alterations, and date of alteration)

Martin L. Gleich and Enid P. Gleich are listed as the owners of Lot 4 of Alvarado Terrace on December 5, 1956; they bought the empty lot from Union Title Insurance and Trust Company. The water record lists February 19, 1957 as the date of water connection. The sewer record reflects March 15, 1957 as the date of sewer connection. The building permit application is dated February 27, 1957. The dating of the house includes its national feature in the September 29, 1958 Life Magazine, while the Life Magazine article does not mention its age (year built) and despite the fact that a notice of completion could not be found, the built date would appear to be sometime in 1957. The 1956 Sanborn Map did not include Alvarado Terrace (Alvarado Estates) as only a small handful of houses had been built by then. Therefore, this designation nomination opines 1957 as the most likely date of record for construction. A review of building permits lists an application for a building permit on February 27, 1957 signed by architect Ronald K. Davis.. The application for the swimming pool is dated February 27, 1957 with recommend Approval by the City Planning Commission on March 12, 1957 (May 14 through October 18, 1957 stages). The electrical permit is dated August 29, 1957. Additional permits after initial construction include permits for plumbing on October 1, 1962; a permit for the original (1957) architects Henry H. Hester & Robert E. Jones to add a "game room and extend bedroom" to the rear of the property on October 19, 1962; a permit for electrical work on November 15, 1962; a permit for plumbing (repipe) on November 29, 1965; a permit for plumbing (water heater) on March 26, 1968; an electrical permit for fireplace repair on March 27, 1968; a permit for a fence on June 19, 1969 and a permit for a service upgrade to 400 AMP on July 12, 1994. Some window were being repaired and replaced in-kind during photographing the house in November, 2013.

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown** **Date: Original Location:**

***B8. Related Features:** **Storage**

B9a. Architect: Henry H. Hester and Ronald K. Davis (Hester & Davis) b. Builder:

***B10. Significance: Theme:** Residential Architecture **Area:** Alvarado Estates

Period of Significance: 1957 **Property Type:** Single-family dwelling **Applicable Criteria:** C, D

The house at 5120 Norris Road merits historical designation under Criteria C and D, Architecture for its integrity as a Post and Beam/Organic Geometric Modernism design and for its association with mid-century Master Architect, Henry H. Hester.

The 1957 Martin & Enid Gleich/Henry Hester & Ronald K. Davis House is an excellent example of the Post and Beam/Organic Geometric Modernism style. The house at 5120 Norris Road retains its architectural integrity in location, design, setting, materials, workmanship and feeling. *See Continuation Sheet*

B13. Remarks:

***B14. Evaluator:** Allen Hazard and Janet O'Dea

***Date of Evaluation:** January 20, 2014

(Sketch Map with n

North arrow required.)

Google Maps N ⇧

(This space reserved for official comments.)

BUILDING, STRUCTURE, AND OBJECT RECORD

P3 a. Description (continued):
The house is mostly hidden from the street view with its most stunning views from inside the private courtyards. This layout was site specific and is a character-defining feature of Organic Architecture. It is laid out like the letter F on its side. Each elevation has multiple angles.

The roof is flat, copper and features three horizontal redwood bands as a cornice. The roofline also features wide overhanging eaves with exposed wood beams. These character-defining features emphasize horizontal massing. The siding is formed from vertical redwood bands. The interior U-shaped courtyard surrounding an original pool is dominated by a continuous wall of floor-to-wall glass permitting natural light throughout the interior spaces and is a significant feature of the house though not visible from the street. The foundation is concrete slab.

A wide circular brick driveway leads off the street to the house and is defined by a low carport leading to a service entry door. Four thick wood posts on the west or house side and two wood posts and a heavy desert/fieldstone pier anchor the large carport. The flat-cantilevered roof line with three horizontal thick bands give further horizontal emphasis and create a dynamic and compressed spatial feeling at the informal/side entrance.

The formal entry is separated from the street by a front yard perimeter redwood fence with alternating narrow bands of vertical redwood and one thicker band of wood capped by a two-by-four. A low-slung parabolic exterior desert stone wall is adjacent to the fence. Nine rows of brick steps lead along a curved path to the private, hidden, front metal door. The chimney is painted round sheet metal. Bushes line either side of the curved brick walkway. On the other side of the front entry path is a private area just off the dining room, which is defined by a series of five pergola post & beams. Two large, floor-to-ceiling siding glass doors leading into the formal dining room define a brick patio beside the main entry.

The informal or southern side entry from the carport leads through the redwood fence into an interior courtyard on a red brick walkway. Tongue and groove redwood boards forming a post & beam pergola cover the walkway. The exterior of the south side of the house features sliding glass doors and vertical redwood siding. There is a series of rectangular forms, which follow 90-degree turns. Following the side entry into the laundry room, there is a 90-degree turn onto a small red brick patio outside the kitchen, which is accessible through sliding glass doors. The south side of the house has a small siding glass window then a bank of windows. Following another 90-degree turn, the west side of the house features two narrow vertical windows, sliding glass doors, and two large siding windows interspersed with vertical redwood siding. There follows an opening toward the interior courtyard and a guest addition on the northwest corner of the house. On the north side of the house, outside the rear, guest cottage are utilities. On the north side of the house, outside the living room, is a rock wall made of desert stone.

The original swimming pool and a large outdoor dining area define the large interior courtyard and is the focal point for all of the rooms that surround it. The surface is tile and a series of red brick patio areas. The house is somewhat transparent because large floor-to-ceiling sliding glass doors that define the living room and broad overhanging eaves with exposed beams.

Vertical redwood siding continues around the interior courtyard, there is large sliding glass doors opening to the interior dining room area, outside is another dining area, defined by another red brick patio. The materials intersperse sliding doors with redwood and desert stone. A large floor-to-ceiling plate window is outside the interior hallway then an additional vertical redwood siding and another pair of sliding glass doors and another floor-to-ceiling plate glass window follows. A small wall of desert stones is featured on the western wall of the interior courtyard. A guest cottage lies at the northern side of the courtyard; it also is entered through glass siding doors.

The west side of the house features a pergola, supported by two posts, over another red brick patio and entry toward the open spaces that are mostly grass, which leads down into a canyon with a series of cobblestone pathways. The western exterior of the home is vertical siding and three large glass plate windows followed by two glass doors to a rear bedroom, a 90 degree turn and a western exterior wall of vertical wood.

The Post & Beam Modernism style interior is not part of the designation nomination, however it does reinforce the attention to detail and exemplifies the high standards of craftsmanship by the Master Architect, Henry H. Hester and architect Ronald K. Davis. This interior was featured in Life Magazine on September 29, 1958 it included several photographs and a brief story. The interior also features a massive parabolic desert stone fireplace, which extends outdoors, a dramatic low ceiling, original red brick floors, redwood ceiling with exposed redwood beams, copper trim, beam and floor-to-ceiling sliding glass doors in the living room, which was photographed by famous Modernism photographer Julius Shulman.

See Continuation Sheet

B. 10. Significance (continued)

Criterion C – ***Embodies distinctive characteristics of a style, type, period or method of construction or is a valuable example of the use of indigenous materials or craftsmanship.***

SIGNIFICANCE STATEMENT FOR CRITERIA C – The Martin & Enid Gleich/Henry Hester & Ronald K. Davis House embodies the distinctive characteristics of the Post & Beam/Organic Geometric Modernism style by its use and adaptation of style, period and method of construction. The house reflects the mid-century Modernism movement. The house is significant for illustrating the Post & Beam/Organic Geometric Modernism architecture style features. The house retains its original and superb massing, spatial relationships, proportion, pattern of floor-to-ceiling glass doors and windows, its vertical wood siding. The Post & Beam Modernism character-defining-features such horizontal massing, the use of natural items such as redwood, glass, desert stonework, overhanging eaves, exposed beams all contribute to the significance of this house. The carport is dramatic and provides the street view of the house with its massive exposed redwood beams and Post & Beam construction. The posts being both redwood and a massive desert stone pier reflect the highly individual mid-century design of a highly individual custom house.

The house is also significant for illustrating the Organic Geometric Modernism style. A main defining character defining feature of Organic Geometric Modernism is the site-specific design, which Hester and Davis executed masterfully here. The house is sited to take advantage of the site and interior courtyards for privacy. The entire design if based upon a difficult, odd-shaped lot, Hester and Davis was able to make maximal use of the lot by turning the attention inward. They did this by first designing a wall around the street view and opening the interior views onto a series of interior courtyards, decks and a pool.

Organic Geometric designs are rare in San Diego. The blending of both Post & Beam and Organic Geometric Modernism is very unique and is another reason it is significant. Besides its siting, the horizontally orientated house grounds the house to the site, further tying it to the Organic Geometric style. The expansive cantilevered roofline, especially over the living room onto the central courtyard is characteristic of the Organic style as is the use of natural building materials such as glass, desert stone and wood. The floor-to-ceiling use of glass is a design feature of Post & Beam and the Organic Geometric Modernism styles. The glass is used to minimize the separation between the interior and the exterior. Organic features also include the emphasis on rectilinear geometry, asymmetrical facades and angular shapes, such as the parabolic desert stone main entry.

Harriet Wimmer and Joseph Yamada designed the original gardens. Yamada believed that screens, benches, decks and fences provided both utility and richness to the site. The house is significant because it retains much of Yamada's hardscape features, such as the main entry fence, the pool deck, bench and screens. Most of the original plantings are gone, except for a few Asian pine trees. Harriett B. Wimmer (1900-1980) operated from Lloyd Ruocco's Design Center in Hillcrest and was one of the first licensed landscape architects in California. She first opened her office in 1950, she later hired Joseph Yamada (b. 1930), a graduate of UC Berkeley, and they became partners in 1960. They worked together at the UCSD campus, Sea World, earning several important design awards-accolades. Yamada was also one of San Diego's leading midcentury landscape architects, also working out of Ruocco's Design Center. He worked with local Modernist architects Ruocco, Delawie, Mosher, Drew, Deems, Lewis and others. Yamada is credited as creating beautifully detailed redwood screens, such as the one at 5120 Norris Road.

The house is also significant because it was featured in Life Magazine (September 29, 1958); it was featured along with a handful of American residential designs that were significant for their vision and leading style of a new type of architecture, Modernism. The house belongs to a specific time and place, post-war optimism of a new era. Julius Shulman (1910-2009) photographed this house. Shulman is the leading American architectural photographer, best known for his "Case Study House #22, Los Angeles, 1960. Pierre Koenig, Architect". Shulman photographed homes by Frank Lloyd Wright, Richard Neutra and other leading architects in the country.

The house is also significant because it retains a high degree of integrity. It displays a high degree of individualism. Its Post & Beam/Organic Geometric Modernism style is both rare and intact. It was a design by an important Master Modernism Architect, Henry Hester and Ronald K. Davis who met the challenge of creating a celebrated masterpiece on what was considered a difficult lot.

The Post & Beam Modernism style embodies the post-war Modernism movement that gained popularity after the Second War World. In a broader sense, the Modernism movement began at the turn of the 20th century with important changes seen in architecture and with the rapid technological advancements and modernization of society. Important architects following WW2 included Le Corbusier, Ludwig Mies van der Rohe, Walter Gropius, Frank Lloyd Wright and others. Louis Sullivan's famous and most misunderstood mantra, "form follows function" from the early 20th century was a dictum for the Modernism movement. Wright's Unity Temple (1905) and the Robie House (1909) were among the first examples of modern architecture in the United States. Walter Gropius, the founder of the German Bauhaus, claimed that Wright's 1911 Wasmuth Portfolio (100 Wright plates published in Germany) served as the Bible for European Modernism. The Deutscher Werkbund, a German association of architects and designers would pave the way for the Modernism movement in Germany following World War One, Peter Behrens was one of the Deutscher Werkbund's most famous artists, he trained Le Corbusier, Gropius and Mies van der Rohe in Europe.

See Continuation Sheet

B. 10. Significance (continued)

Modernism is a complex movement. It has roots in other parallel movements, including Futurism, Art Deco, Streamline Moderne, and Expressionism, all of which rejected Nineteenth Century styles. All were searching for a new post-WW1 and later post-WW2 aesthetic in art, design and architecture. World War Two and its aftermath were also major factors in driving innovation in building technology and later, architectural designs. The lack of wartime supplies would encourage experiments with prefabricated building, including Quonset huts, the post-war enameled-steel Lustron House (1947-1950) and Buckminster Fuller's experimental aluminum Dymaxion House.

In 1932, the International Exhibition of Modern Architecture was held at the Museum of Modern Art in New York City. Philip Johnson and Henry-Russell Hitchcock brought together many different components in design and architecture that would later be called the International style. With the rise of Nazism in Germany, several key Modernism figures would flee to America, including Marcel Breuer, Walter Gropius and Mies van der Rohe. High style Modernism design would dominate commercial architecture but never residential homes, with few exceptions. Early residential examples in America include the Lovell House in Los Angeles by Richard Neutra in the 1920s, the Case Study Houses, commissioned between 1945 and 1966, some twenty homes that were built in the greater Los Angeles area by architects including Neutra, Charles and Ray Eames and others. Many of these designs employed a blurring the indoors with the outdoors. The Farnsworth House by Mies van der Rohe and the Glass House by Philip Johnson were classic examples of embracing "the box". While most viewed such houses as too cold and static for the average person, most Modernism architects viewed them as a necessary tenant of Modernism, uncluttered and pure Minimal designs.

As the International style took hold, other architects strayed from its purely functionalist forms, while retaining highly Modernist characteristics. Eero Saarinen, Alvar Aalto and Oscar Niemeyer were three of the most prolific architects and designers of this movement, which would influence contemporary Modernism. Le Corbusier once described buildings as "machines for living", but people were not machines and it was suggested that people would not want to live in such impersonal buildings and homes. During the middle of the Twentieth Century, some architects began experimenting in organic forms that were more human and accessible. Mid-century Modernism or organic architecture became popular due to its democratic and playful nature. Frank Lloyd Wright coined the term, organic architecture. Organic architecture meant that materials, motifs and basic ordering principles that continue to repeat themselves throughout the house were some of its tenants. The best-known example is Wright's 1936 Fallingwater in rural Pennsylvania.

San Diego's Modernism would begin with Irving Gill. Gill borrowed from the Arts and Crafts movement and the Prairie School styles. He was also influenced by his stay with Louis Sullivan's Adler and Sullivan firm in Chicago between 1891 and 1893. During this time, he would work side-by-side with Sullivan's leading draftsman, Frank Lloyd Wright. The earliest Modern designs in San Diego were Prairie School homes by Irving Gill and William S. Hebbard along Seventh Avenue. The include the Alice Lee Residence (1905), the Katherine Teats Cottage (1905), the Alice Lee Cottage (1905), the Cossitt Residence (1906) as well as the demolished Hamilton Residence (1908).

In the 1916, *The Craftsman,* Gill would describe architecture as straight lines, simple cubes and shear plain walls unadorned by cornices, overhangs or anything but a simple vine growing along its structure. Gill would emphasize simplicity and the importance of indoor-outdoor living. Gill's influence and use of reinforced concrete and stark geometry is also seen in Lillian Rice's clean lines of her Rancho Santa Fe homes (while she was employed by Richard Requa and Henry Jackson). Her residential designs would stress the blending of house and garden. Many of Gill and Rice's design philosophies would carry forward in the indoor-outdoor living concepts by local post-war Modernists. Following his employment with Gill, Requa and Frank Mead would pursue "Southern California Architecture", the design of buildings and homes where "…landscaping and the terrain would be compatible and compliment each other". Requa would utilize Gill's concepts on the 1935 California Pacific International Exposition, stressing stucco exteriors, tiled roofs, Moorish arches and unique chimney designs. Wright's son, John Lloyd Wright first worked in San Diego for Harrison Albright (Workingman's Hotel, also called the Golden West Hotel, 1913), John Lloyd Wright returned to San Diego following WW2 and designed several noteworthy Mid-Century homes in Del Mar. These houses were mostly reflective of his father's Prairie School style, but with a local Modernist sensibility. Another key local Modernist designer was Rudolf Schindler who experimented in low-cost housing. After Schindler worked with Frank Lloyd Wright on the Hollyhock House in Los Angeles he built the Pueblo Ribera Courts (1923) in La Jolla. He sought to redesign the California modern home and create communal indoor-outdoor living.

The post-war Case Study House Program is credited as being the most influential on the development of San Diego Modernism, The use of contemporary style meant "…each architect might wish to change his idea or a part of his idea when time for actual building arrives". The contemporary style became popular locally as a result of the Case Study Homes, such features as indoor-outdoor living spaces with large patios; open, free-flowing floor plans; liberal use of glass; simple, economical structure and materials; low maintenance materials and landscape.

See Continuation Sheet

B. 10. Significance (continued)

Three Case Study Homes were completed in San Diego, known as the Case Study Triad Houses. Killingsworth, Brady and Smith in La Jolla completed these Post and Beam homes in 1959. Post and Beam was a highly individualized method of construction where structural framing consists of load bearing beams supported by columns rather than solid bearing wall, allowing for expansive use of glass along the perimeter of the building. Architects also used the natural slopes and landscape as well as the orientation of the structures to provide views and indoor-outdoor living opportunities while maintaining a certain level of privacy. Post and Beam houses are characteristically rectilinear with open floor plans that are grid-like in layout and based on a consistent module or beam length. The roofs are usually flat, with wide overhangs; they are also usually custom designed and involve high degrees of individualism. In San Diego, the majority of Post and Beam Modernism homes are found in Mission Hills, La Jolla, Point Loma, Del Cerro, Mt. Helix and Alvarado Estates.

Post and Beam Modernism is an important branch of Modernism architecture, however other Modernism styles have also been identified; including suburbia tract homes that included mostly Minimal Traditional affordable homes for the returning WW2 veterans in new neighborhoods locally such as Rolando, College area, Clairemont, Allied Gardens, Oak Park, Del Cerro, Lake Murray, San Carlos, University City and other communities. In 1958, the Tract Ranch style was also a dominant residential post-war style that traces its origins to Cliff May's haciendas. Sunset Magazine's *Western Ranch Homes by Cliff May* was essential toward the birth and growth of this popular genre. Other important sub-styles of local Modernism include Streamline Moderne, Futurist-Googie, Tiki-Polynesian, Custom Ranch, Contemporary, Brutalism, Organic Geometric, Organic Free-Form as well as Post and Beam (c. 1950-1970).

Lloyd Ruocco is regarded as the father of post-war Modernism, his designs mostly featured organic materials in their natural forms, and his later designs became less complex and were based more on the Los Angeles Case Study Homes. Ruocco worked in the offices of Requa and William Templeton Johnson following his graduation from U.C. Berkeley, he also worked under Rice on the master plan of Rancho Santa Fe. Ruocco's early designs (1937-1952) were mostly exposed redwood siding with flat roofs. Other important San Diego Modernists include Homer Delawie who was a proponent of the Post & Beam branch of Modernism, Cliff May, William Cody, Loch Crane, Craig Ellwood, Frank Hope, James Hubbell, Frederick Liebhardt, Paul McKim, C.J. Paderewski, Herb Turner, Richard Wheeler and many other talented architects.

In addition to Lloyd Ruocco, Sim Bruce Richards (1908-1983) would represent some of San Diego's finest organic architecture. Richards was also an artist and a designer. Following graduation from U.C. Berkeley, Richards designed rugs, which led to further training, but this time at Frank Lloyd Wright's very non-traditional Taliesin fellowship program. Learning about the sensuality of wood and organic designs at Taliesin, Richards would return to San Diego and work at William Templeton Johnson's office. During the 1950s and 1960s, Richards would design simple wood homes for loving clients, sometimes working with artist James Hubbell and Rhoda Lopez. The influence of both Lloyd Ruocco and Sim Bruce Richards organic designs upon Henry Hester's and Ronald Davis's house at 5120 Norris Road is visually evident.

Organic Geometric (c. 1955-1975) is another important sub-style of Modernism, as stated above, its roots lie with Frank Lloyd Wright, who integrated structures into their surroundings, used local materials such as wood and stone and designed buildings that were respectful to their site. Like their Post and Beam Modern contemporaries, Organic Geometric architects also used glass to minimize the separation between interior and exterior and encourage indoor/outdoor living. Buildings were carefully sited to take advantage of views and other site features, often built on steep slopes and boasting large balconies. In terms of shape, architects designed these buildings with an emphasis on rectilinear geometry. Asymmetrical façades, unusual rooflines, and angular shapes characterize the designs.

Examples of Organic Geometric architecture are rare in San Diego. Residential buildings in the Organic Geometric style were built by architects such as Sim Bruce Richards, who worked under Frank Lloyd Wright, Lloyd Ruocco, and John August Reed, who was at one time an assistant to Lloyd Ruocco and later worked with Sim Bruce Richards. These architects used the principles of organic design within the structure of geometric forms as a means of emphasizing both the man-made and natural elements of the buildings. Organic Geometric architectural designs were built primarily in the La Jolla and Point Loma areas; however examples of this style are extant throughout the region and should be treated as significant resources.

The recognized exterior elements and characteristics associated with Post & Beam and Organic Geometric Modernism include:

Character-Defining Features of Post and Beam Modernism:

Primary

- Direct expression of the structural system, usually wood or steel frames
- Horizontal massing
- Flat or shallow pitch roofs (with deep overhangs or no parapet)
- Floor-to-ceiling glass *See Continuation Sheet*

B. 10. Significance (continued)

Secondary
- Repetitive façade geometry
- Minimal use or solid load bearing walls
- Absence of applied decoration
- Strong interior/exterior connections
- Open interior floor plans
- Exterior finish materials usually include wood, steel, and glass

Character-Defining Features of Organic Geometric:

Primary
- Exposed structure and materials
- Square, diamond, polygon design motifs
- Natural materials (wood, stone, glass)

Secondary
- Sharp Angular massing
- Asymmetrical facades
- Complex roof forms
- Site specific design

The house at 5120 Norris Road clearly reflects the Post & Beam and Organic Geometric Modernism architectural aesthetic and time in which it was built.

The following is an analysis of how the Martin & Enid Gleich/Henry Hester and Ronald K. Davis House meets the U.S Secretary of the Interior, National Parks Service criteria for integrity.

1. Location. The 1956 Sanborn Fire Maps did not include Alvarado Terrace, as there were too few homes in the immediate area to warrant such mapping at the time. However, based on the 1959 City Directory and the September 29, 1958 Life Magazine, which shows footprint and relationship of the house to the driveway it can be concluded that the house has not been moved from its original location and thus has excellent location.

2. Design. The house is an excellent example of post-war, Post & Beam/Organic Geometric Modernism architectural style. It has many character-defining features of a Post & Beam Modernism house, including a flat roof; little to no applied decoration; post and beam construction allowing the use of expansive floor-to-ceiling glass windows and sliding glass windows; horizontal massing; the use of natural materials, including desert stonework, wood and glass; large overhanging eaves, which emphasize the horizontal elements; a strong interior/exterior feel; a site specific design and an asymmetrical design. The Organic Geometric characteristics are primarily rooted in its unique and creative siting. The house is integrated into the oddly shaped lot and surroundings. The horizontally orientated house grounds the house to the site, further tying it to the Organic Geometric style. The expansive cantilevered roofline, especially over the living room onto the central courtyard characterize the Organic style as does the use of natural building materials such as glass, desert stone and wood. The floor-to-ceiling use of glass is both a feature of the Post & Beam as well as the Organic Geometric Modernism styles. The glass is used to minimize the separation between the interior and the exterior. Organic features also include the emphasis on rectilinear geometry, asymmetrical facades and angular shapes, such as the parabolic desert stone main entry. Overall, the shape, bulk, scale and design of the house appears to have excellent integrity.

3. Setting. The house in Alvarado Estates remains situ. Alvarado Estates is a post-war suburban neighborhood that features contemporary, custom and Modernism homes, several Modernism architects designed excellent examples of Post & Beam Modernism homes, including Lloyd Ruocco (4727 Avion Way, 1970); Richard Neutra (Bond Residence, 4449 Yerba Santa, 1960; Byrum Residence, 5460 Toyon Road, 19590; Cliff May (4777 Avion Way, 1964); Sim Bruce Richards (1955); John Mortenson, Rex Lotery, William See, Louis Bodmer, Donald Goldman, Leonard Veitzer and Richard Wheeler Jr. The houses surrounding 5120 Norris Road are reflective of post-war high-end custom home building and provide excellent setting.

4. Materials. The house has a copper roof, vertical redwood siding and floor-to-ceiling glass and glass siding doors. The house has its original character-defining-feature carport, which consists of exposed redwood beams, cantilevered flat roof and a heavy natural desert stone pier. A parabolic desert stone wall with a copper roof defines the formal entry. The foundation is concrete slab. Overall, the materials aspect of the integrity is excellent.

See Continuation Sheet

B. 10. Significance (continued)

5. Workmanship. The house was designed and built by Master Architect Henry H. Hester and important Modernism architect, Ronald K. Davis; it reflects excellent craftsmanship of a Post & Beam/Organic Geometric Modernism house during the Modernism Mid-century era. The house's interior also features a massive parabolic desert stone fireplace, which extends outdoors, original red brick floors, redwood ceiling with exposed redwood beams, copper beam and floor-to-ceiling sliding glass doors in the living room, which was photographed by famous Modernism photographer Julius Shulman. Overall, the workmanship aspect is excellent.

6. Feeling. The overall feeling of the neighborhood is that of a post-war, 1950s through 1980s neighborhood, with large lots of high-end, custom homes. The house at 5120 Norris Road is one of the earliest homes built in the immediate neighborhood. The historical senses and feel of a person walking down the street would be nearly the same as the 1960s or 1970s. The 1957 Post & Beam/Organic Geometric Modernism house has excellent integrity; therefore, the feeling aspect is excellent.

7. Association. While Martin L. Gleich was the founder of American Housing Guild, company that is responsible for large housing tracts in Serra Mesa, Mission Village, Clairemont, Grossmont and other local post-war communities. Gleich also founded Guild Mortgage Company, providing residential mortgages to homebuyers in American Housing Guild's new home developments. During the 1960s, Robert Jones partnered with Master Architect Henry H. Hester on a number of distinguished projects, including the American Housing Guild Subdivision House (1961); later Jones & Hester sold designs to American Housing Guilds. These homes mostly featured flat or low-hipped roofs, post & beam construction, floor-to-ceiling glass and other Modernism features, several of the American Guild Housing homes were photographed by master Modernism photographer Julius Shulman. The association of Gleich with American Guild Housing and Mortgage Company and Modernism in San Diego is significant, however, Gleich currently is not on the official list of San Diego Historical Persons. It is hoped that he will be added to the City of San Diego's list of important persons with this designation. Architect Henry H. Hester is listed on the City of San Diego's HRB List of Master Architects.

Ronald K. Davis, an important Modernism architect is also credited with designing the house, while not on the HRB List of Master Architects; Davis is listed in the San Diego Modernism Historic Context Statement developed by the City of San Diego. The house is also associated with important mid-century landscape architects Harriett Wimmer and Joseph Yamada. Harriett B. Wimmer (1900-1980) operated from Lloyd Ruocco's Design Center in Hillcrest and was one of the first licensed landscape architects in California, she first opened her office in 1950, she later hired Joseph (b. 1930), a graduate of UC Berkeley (1922), and they became partners in 1960. They worked together designing parts of the UCSD campus, Sea World, Scripps Institution of Oceanography, the Copley Estate, Seaport Village and Embarcadero Marina Park and countless other commercial and residential gardens, earning several important design awards-accolades. Therefore, the house as excellent association.

The house at 5120 Norris Road clearly reflects the Post & Beam and Organic Geometric Modernism architectural aesthetic and time in which it was built. It also meets Standards of criteria defined by the U.S. Secretary of the Interior, National Parks Service.

B. 10. Significance

Criteria D – Is representative of the notable work of a master builder, designer, architect, engineer, landscape architect, interior designer, artist or craftsman?

SIGNIFICANCE STATEMENT FOR CRITERIA D – The Martin & Enid Gleich/Henry H. & Ronald K. Davis House is an excellent example of the work of midcentury Master Architect Henry H. Hester and important Modernism architect Ronald K. Davis. The house is one of Hester's finest residential designs and in fact, would be the first residential design by Hester to be historically designated. The only Hester designated structure in the City of San Diego is the Sixth Avenue Salomon Apartments (3200 6th Avenue, 1959, Hester & Davis, HRB #801), which was built two years after the Gleich/Hester & Davis House. The house is also significant for being an early Hester design. His first house (1955) is just two years before this house. This house is likely among Hester's third to fifth design. This house received national attention when it was covered in the September 29, 1958 edition of *Life Magazine,* a leading magazine of the 1950s.

The article states that the house was built for $150,000.00 for the Gleich family. Henry Hester is identified as the architect. Hester built a "*…practical, if luxurious answer to an everyday problem, how to make the best of a poor site"*. The house also *"…had to meet their demand for sunny, outdoor living"*. The article stated that it was highly unusual for a "*…high wall"* to be facing the street, but Hester created a very private house with no windows facing the street, Hester created *"….several lush courts, which enclose a swimming pool, an outdoor dining area, a terrace, verdant gardens. House walls facing the courts are nearly all glass*". Hester designed a highly original, highly personal home for a wealthy client, which also beautiful and sited uniquely. The Hester design incorporated landscaping and the interiors in a Modern classic, the house has been described as one of San Diego's finest Modernism residential designs. The house received an Award of Excellence by the local branch of the AIA in 1960.
See Continuation Sheet

B. 10. Significance (continued)

While not on the City of San Diego's List of Master Landscape Architects, the house is also significant for its association with Harriet Wimmer and Joseph Yamada. The City of San Diego's Modernism Historic Context Statement lists both Wimmer and Yamada on their list of significant Landscape Architects. Wimmer was the first female licensed landscape architect in San Diego, she worked out of Lloyd Ruocco's Design Center in Hillcrest and was responsible for landscaping at UCSD, Sea World, Scripps Institution of Oceanography, the Copley Estate, Seaport Village and Embarcadero Marina Park and countless other commercial and residential gardens.

Joseph Yamada was also one of San Diego's leading midcentury landscape architects, also working out of Ruocco's Design Center. He worked with local Modernist architects Ruocco, Delawie, Mosher, Drew, Deems, Lewis and others. Wimmer and Yamada partnered on several important designs, including the landscaping at this house. Yamada is credited as creating beautifully detailed redwood screens, such as the one at 5120 Norris Road. Yamada believed that screens, benches, decks and fences provided both utility and richness to the site.

The house is more than a representative example of Master Architect Henry Hester; it is one of his finest designs. It retains nearly all of its physical features that illustrates the Post & Beam/Organic Geometric Modernism features in terms of massing, spatial relationships, proportion, pattern of floor-to-ceiling glass sliding doors and windows and texture of materials. Therefore, the house is significant for representing one of Hester's best designs and one of San Diego's best Post & Beam designs as well as a rare example of Organic Geometric Modernism designs. It is important and significant because it was prominently featured in a national magazine and because it is an early design by Henry Hester. Hester is one of San Diego's celebrated, artful and creative Modernism architects.

Master Architect Henry Hartwell Hester

Henry Hartwell Hester was born May 30, 1925 in Vinta, Oklahoma to Loraine Burgess Hester and Alfred Vernon Hester and was named after his two grandfathers. The 1898-1914 Index and Final Rolls of Citizens and Freedmen of the Cherokee Tribe listed Alfred as 1/32 Cherokee. Loraine was Cherokee. Alfred was born on June 4, 1900. His father worked as an agent for Pickwick Bus in Oklahoma. His mother, Lorraine was born about 1904 in Iowa.

According to the 1930 U.S. Census, the Hester's were lived in Miami City, Ottawa County, Oklahoma. Alfred's father was what was then called mixed blood. By 1935, Henry's parents had divorced. His father remarried and lived in Long Beach California. The 1940 U.S. Census shows Lorraine, age 33 years old, married to Perl A. Sparks, age 48 years old, with 14-year-old Henry resided at 3605 Wawona Drive, San Diego. Lorraine's profession was listed as a dental assistant. Perl has no listed profession. The 1940 U.S. Census showed Alfred Hester was remarried to Jennie L. Hester, age 39 years and lived in Chelsea, Rogers County, Oklahoma. Alfred died in October 1976.

Henry Hester attended Roosevelt Junior High and Brown Military Academy in San Diego until World War II broke out. Hester served three years in the US Coast Guard and then attended USC. According Hal Sadler, "I knew him at USC and he was a talent even then," in the San Diego Union Tribune, Sadler said. "He was recognized by a group of USC people who came to San Diego as one of the early stand outs in design."

In 1947, the same day he graduated from USC's School of Architecture, he moved to La Jolla. He designed two homes for himself (also photographed by Julius Shulman) in addition to a wide array of residential and commercial commissions, Hester had the good fortune of a small personal inheritance that allowed him to pick the clients and projects he felt strongly about. Through the years, Hester would join in partnership with Frederick Liebhardt (ca. 1957), Ronald K. Davis (ca. 1958-60 as Hester & Davis), William F. Cody (ca. 1958-1960 as Cody & Hester), fellow USC-grad Robert E. Jones (ca. 1960-67 as Hester & Jones and Hester, Jones & Associates), with Fred Livingstone (as Hester & Livingstone) as well as Roger Zucchat and David Lorimer. According to his obituary, Hester worked alongside Lloyd Ruocco in some capacity. Projects, while mainly focused in the San Diego area, stretched to Denver, Albuquerque, Florida and throughout California.

Over the years he was published in over 30 architectural magazines and three hard cover books noting his status as a significant local architect. The City of San Diego Historic Resources Board and the San Diego Modern Historic Context Statement list Henry H. Hester as a Master Architect.

See Continuation Sheet

B. 10. Significance (continued)
His local and national AIA awards are numerous across a wide range of projects. One of Hester's most famous San Diego designs occurred in 1958 when Col. Irving Salmon, an industrialist, diplomat and philanthropist, commissioned Hester to design a luxury apartment building with 30 spacious units and a posh penthouse at 3200 Sixth Avenue across the street from Balboa Park. The one-to-three bedroom units were showcased in a 1960 edition of San Diego Magazine. Hester was selected over John Lloyd Wright to design the apartment building, Hester created an airy and free-flowing atmosphere with floor-to-ceiling doors and windows that took advantage of its Balboa Park views. The Salomon Apartments were marketed as *San Diego's Most Distinguished Place to Live.* Ironically, the only Charles and Henry Greene design in San Diego, (1912 Kew House) was demolished for the development of these apartments.

The Colonel Irving Salomon/Henry Hester Apartments are historically designated as landmark #801. The 2005 historic report for the Salomon Apartments states:

> "*Renowned architect Henry H. Hester was selected to design the building. Well ahead of his time, Hester's design style was characterized by a keen sensitivity to environmental color and light as well as the importance of a visual-indoor-outdoor connection. He brought stunning views of Balboa Park and a patio garden inside with floor-to-ceiling windows and full-height doors. Refined attention to detail throughout was paramount.*"

The apartments also won an Award of Merit AIA San Diego award in 1960 and in 2006 an Orchid Award for Historic Preservation San Diego. The City of San Diego HRB lists other Hester notable Works as the Butler Realty/Professional Building (1625 Rosecrans Street, Hester & Davis) and the Mr. and Mrs. John A. Detchone Residence (4284 Ibis Street, Mission Hills).

Hester had an important connection with Julius Shulman (1910-2009), the famous American architectural photographer best known for his mid-century photography of buildings and homes by Pierre Koenig (Case Study House #22, Los Angeles), Frank Lloyd Wright, Richard Neutra, Charles Eames and other significant architects. Shulman photographed several important San Diego County mid-century homes by Hester, including the 1958 Salomon Apartment building, Butler Reality, Edwards Residence (Escondido), Hill Residence, Horizon Home (University City), Jerome Residence (La Jolla), Jones Residence, Mueller Residence, Mueller Tuckett Office (Point Loma) and including the subject house, 1957 Martin Gleich Residence.

In 1986, Hester designed a $6 million Coast Walk residence on a cul-de-sac with views of La Jolla Cove. Julius Shulman made a comment about Henry Hester's timing as a design professional. Shulman stated, "(Hester's designs peaked during) a good period of architecture when San Diego was just beginning to express itself in favor of modernism… In the early years, the International Style was not accepted… Hester and others warmed up the work quite a bit and edited it in a way that clients would accept."

Henry Hester raced Formula One cars nationally, rode motorcycles in Mexico and held a multi-engine pilot's license throughout his career. He sailed with the Coronado Yacht Club and Isla Del Sol Yacht Club (in St. Petersburg, FL), In addition to his interest in windsurfing, water skiing and dominoes. Hester was a devoted golfer at La Jolla Country Club, Fairbanks Ranch Country Club, and Indian Ridge Country Club (in Palm Desert).

The September 1983 *San Diego Magazines* review of San Diego's architectural firms included a very brief description of his firm: "*In the last seven years Hester has limited his practice to custom residential projects. A solid contemporary architect …His designs run a broad gamut, from designing houses with limited budgets to designing houses with no budgets at all. He also incorporates landscaping and interior work into his practice.*"

In May 2006, Dwell Magazine profiled Henry Hester regarding the restoration of the Salomon Apartments on 6th Avenue. Refusing to be aligned with the renovation, he felt the alteration of the project was significant enough that is was no longer his work.

Hester died in November 2006 at his home in Palm Desert at the age of 81. He was survived by his wife of 38 years, Nancy (Hester's first marriage was to Piretta) along with daughters Loraine Dyson, Heather Duckett, son Henry Hester Jr.

See Continuation Sheet

BUILDING, STRUCTURE, AND OBJECT RECORD

B. 10. Significance (continued)

Partnerships:

- Hester & Davis
- Cody & Hester
- Hester & Jones
- Hester, Jones & Associates
- Hester & Livingstone

Henry H. Hester, A Partial List of Projects:

- Private Residence, 6632 Via Manona, La Jolla (1955)
- Carl Mueller Residence, 3515 Carleton Street Point Loma (1956).
- Henry Hester Residence #1, 1630 Mimulus Way La Jolla (1956) (Hester), Featured in *Architectural Record,* August 1962
- **Martin L. & Enid Gleich Residence 5120 Norris Road, College Area (1957) (Hester & Davis), Award of Excellence AIA (1960) (Landscape by Wimmer & Yamada)**[1]
- Cornelius Residence, 10385 Bonnie Lane, (1958).
- Givler Residence, 329 Catarina Drive, Borrego Springs (1958) (Hester & Davis)
- Richard Silverman Residence, 4021 Miller, Mission Hills (1958) (Cody & Hester)
- Lyn Schwartz Residence, 5483 Drover, College Area (1959) (Hester & Davis)
- Salomon Apartments, 3200 6th Avenue, Bankers Hill (1959) (Hester & Davis)
- Casey, McClenahan & Christensen, northeast corner of 1st and Laurel Street (1961) (Hester & Davis)
- Gerald W. Jerome Town House, 7930 Prospect Place, La Jolla (1961) (Hester, Jones & Associates)
- American Housing Guild Subdivision House, (1961).
- Jonathan Edwards Residence, (1962).
- Del Mar Residence (1962) (Hester, Jones and Associates) - San Diego AIA Award of Merit (1963)
- El Patio Building, Ivanhoe Avenue, La Jolla (1962) (Hester & Davis)
- Robert E. Jones Residence, 2041 Balboa Avenue, Pacific Beach (1962) (Hester & Jones)
- Palmer Hughes Office Building, 7863 Herschel Avenue, La Jolla (1962) (Hester, Jones & Associates)
- Borrego Springs Park, Borrego Springs Resort, Tilting T and Borrego Valley Road (1963)
- Henry Hester Residence #2, Torrey Pines Road, La Jolla (1964)
- Herbert Solomon Residence, 6827 Elaine Way, Del Cerro (1964)
- Pearson Ford, Fairmount and El Cajon Blvd. (c. 1966)
- PSA Building (1968) (Hester & Livingston)
- Horizon Home Contest Winner, 2608 Angel Avenue, University City
- Private Residence, 1595 Coast Walk, La Jolla
- Mr. & Mrs. John A. Detchone Residence, 4284 Ibis Street, Mission Hills (Hester) (Landscape by Yamada)
- Horizon Home Contest Winner, 2608 Angell Avenue, University City

The Martin & Enid Gleich/Henry Hester & Ronald K Davis House is a notable work of Henry Hester's and is one of his finest residential designs. It would in fact, be the first residential design by Hester to be historically designated and meets the standards for this recognition.

B11. Additional Resource Attributes: (List attributes and codes)

See Continuation Sheet

***B12. References:**

Books
Fame or Fortune: Giants of the Housing Industry Revealed, by Ned Eichler (online), publisher, iUniverse, Incorporated. 2005.
San Diego City Directories, City and County, San Diego.
San Diego Architecture, Dirk Sutro, 2002.
Virginia and Lee McAlester, A Field Guide to American Homes.

Maps
Goggle Maps
1921, 1956 Sandborn Fire Maps, California Room, San Diego Public Library
USGS Historic Topo: LaJolla: 1930, reprinted 1941, Scale 1: 62500
City of San Diego 800 scale maps
Site Plan, Johnson & Johnson Architecture

Photos and Photo Archives
Present Day Photos: Allen Hazard
San Diego History Center Photograph Collection

Interviews
Todd Pitman, Modernist landscape architect, via email. November, 2013.

Historic Reports
2005 Historic Nomination of the Salomon Apartments 1958, 3200 Sixth Avenue San Diego CA 92103, submitted to the City of San Diego in November 2005. Kathleen Crawford, M.A..

Government Documents
County of San Diego, Assessor, Mapping Division archive records, deeds and miscellaneous records.
Residential Building Records, County of San Diego
Water and Sewer Records: Permits application records - City of San Diego
U.S. Census Records, 1890, 1900, 1910, 1920, 1930, 1940
Subdivision Map

Newspapers and Magazines
Architectural Record, August 1962, Henry Hester La Jolla house
A Guide to Modern San Diego, the Pre-War Roots of Local Mid-Century Modernism, by Keith York, Save Our Heritage Organisation Reflections Magazine, 2004, Vol. 35, Issue 3.
Life Magazine, September 29, 1958.

Newspapers and magazines
The Journal of San Diego History, "Harriett Wimmer, A Pioneer San Diego Woman Landscape Architect", by Carol Greentree. Summer 1988, Volume 34, No. 3.
San Diego Union-Tribune, November 4, 1996, Henry Hester Obituary
San Diego Union-Tribune, October 8, 2011, Martin Gleich Obituary
Sim Bruce Richards, A Legacy in Wood, by Keith York, Save Our Heritage Organisation Reflections Magazine, Volume 38, No. 2.

Websites
Ancestry.com
Alvarado Estates.org (Alvarado Estates Community Association)
City of San Diego Historic Resources Board, Register of Designated Resources
City of San Diego Planning Department, Biographies of Established Masters
Index and Final Rolls of Citizens and Freedmen of the Cherokee Tribe, 1898-1914.
OHP.parks.ca/gov – San Diego Modernism Context Statement submitted to the State of California Office of Historic Preservation, October 17. 2007.
Modernism San Diego website - www.modernsandiego.com
Murray Lampert Construction, American Housing Guild of San Diego Martin Gleich
Save Our Heritage Organisation (SOHO), sohosandiego.org. Much Like Their Buildings
San Diego Union-Tribune, Ronald K. Daivs obituary, September 26, 2010.
San Diego Union-Tribune, Martin Gleich obituary, Oct. 7, 2011.
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Enid Gleich: A Truly Unique Treasure. By Chris Tratnyek, Sketches Editor. Sketches,
San Diego Audubon, June 2013. Volume 64. Number 10.
Wikipedia, Julius Schulman.
Wikipedia, Modernism.
Wikipedia, Organic Architecture

Miscellaneous
Powers Plumbing, Power Walks, Walking Tours, by Allen Hazard, © 2010.
Save Our Heritage Organisation SOHO San Diego Modernism Weekend, October 22-24, 2004. Henry Hester, Salomon Apartments Saturday Evening Penthouse Party announcement.

State of California ◻ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI # P-37-035655
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

Page 1 of *Resource Name or George and Iris Goodman/Rex Lotery House APN: 461-290-03-00

P1. Other Identifier:

***P2. Location:** ☐ **Not for Publication** þ **Unrestricted** ***a. County:** San Diego
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad: Date: T** ; **R** ; **¼ of ¼ of Sec** ; M.D. **B.M.**
c. Address: 5330 LeBarron Rd. City: San Diego Zip: 92115
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
Elevation: This property is located in the U.S.G.S. quadrangle San Diego as a portion of Lot 106 of Alvarado Unit #3, Map 5185, which was filed on May 22, 1963. The house at 5330 LeBarron Road is in an area generally known today as Alvarado Estates, near San Diego State University.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries):
The 1968 George and Iris Goodman/Rex Lotery House is an excellent example of an Organic Geometric Modernism design with Prairie School and Usonian influences. The house is 4,860 square feet with four bedroom and five bathrooms. It is a custom, highly individualistic and creatively site specific design, taking full advantage of a large one acre size pie-shaped corner lot shape. The house layout is in a modified Prairie School cruciform design with four wings off the central mass. Organic Geometric features include the emphasis on right-angle geometry and angular corners, use of natural materials and horizontal massing. The house features many character-defining features of a mid-century Modernism house including free-flowing floor plans and expansive use of glass throughout most of the perimeter. The mahogany doors and smooth stucco walls and floor to ceiling glass alternate with each to allow for privacy and permits a blurring of the indoors to the outdoors. *See Continuation Sheet*

***P3b. Resource Attributes:** (List attributes and codes)

***P4. Resources Present:**
☑Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

P5b. Description of Photo: (View, date, accession #) May 28, 2015

***P6. Date Constructed/Age and Sources:** July, 29 1968
☑Historic ☐Prehistoric ☐Both

***P7. Owner and Address:**
L. Michael and Megan Costa
5330 Le Barron Road
San Diego CA 92115

***P8. Recorded by:** (Name, affiliation, and address)
Allen Hazard and Janet O'Dea
1824 Sunset Blvd.
San Diego CA 92103

***P9. Date Recorded:** July 18, 2015
***P10. Survey Type:** (Describe) Intensive.

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") None

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☑Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code**

***Resource Name:** George and Iris Goodman/Rex Lotery House APN: 461-290-03-00

B1. Historic Name: George and Iris Goodman/Rex Lotery House
B2. Common Name:
B3. Original Use: Single Family Residence B4. Present Use: Single Family Residence
***B5. Architectural Style: Organic Geometric Modernism**
***B6. Construction History:** (Construction date, alterations, and date of alteration)
George J. Goodman and Iris B. Goodman purchased Lot 106 of Alvarado Unit #3 for $24,500 on September 28, 1965 from the Eason Enterprises, Inc. The principal of that firm, local developer Fred S. Eason, owned the now historically designated house at 4777 Avion Way (built by master architect Cliff May in 1964). Easton bought the lot from the Title Insurance and Trust Company on May 18, 1960 and for a time used it as an air strip.

After searching southern California for the "warm contemporary" style that they wanted, the Goodmans commissioned the well-known Los Angeles based Modernism architect Rex Lotery to build their house. The first design was rejected. Lotery's next design thrilled the Goodmans and the final draft blueprints were signed off on October 28, 1966. The building permit is dated March 9, 1967; Lotery is listed as the architect and the Los Angeles based Parr Construction Company, the builder. A series of the permits includes: a water meter connection dated April 13, 1967; an electrical permit on April 3, 1967; a plumbing permit on May 25, 1967; an electrical permit dated June 15, 1967; an electrical permit for October 11, 1967; a heating and air conditioning permit for January 8, 1968; a water/sewer connection order on April 10, 1968; and an electrical permit for July 22, 1968. The Notice of Completion was not found and the date of the the final approval July 29, 1968 on the electrical permit was used for dating purposes. The Sandborn Maps predate the development of Alvarado Estates #3 and this area was not mapped. The pool on plans was never built.

***B7. Moved? ☒No ☐Yes ☐Unknown Date: Original Location:**
***B8. Related Features:**
B9a. Architect: Rex Lotery b. Builder: Parr Construction Company
***B10. Significance: Theme:** Residential Architecture **Area:** Alvarado Estates (Alvarado Unit #3)
Period of Significance: 1968 Property Type: Single-family residence **Applicable Criteria:** C, D
The house at 5330 Le Barron Road merits historical designation under Criteria C for its integrity as an Organic/Geometric Modernism design. Mid-century architect Rex Lotery designed it. Lotery, while not recognized as a master architect in San Diego, has been recognized as a master architect in Beverly Hills and Los Angeles, California.

The 1968 George and Iris Goodman/Rex Lotery House is an excellent example of the rare Organic Geometric Modernism style. It has Prairie School and Usonian influences. The remarkable house at 5330 Le Barron Road retains its architectural integrity in location, design, setting, materials, workmanship and feeling.
See Continuation Sheet

(Sketch Map

with north arrow required.)

(This space reserved for official comments.)

B13. Remarks:

***B14. Evaluator:** Allen Hazard and Janet O'Dea

***Date of Evaluation:** July 18, 2015

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name:** George and Iris Goodman/Rex Lotery House APN: 461-290-03-00

P3 a. Description (continued):

The George and Iris Goodman/Rex Lotery House also refers to the Prairie School by its integration into the landscape. It rests on a concrete slab foundation and is made of wood frame construction.

At the street view, there is a wide 16 to 20 foot circular concrete driveway that flows along the corner lot, including an original handmade red brick, three foot U-shaped diving wall; mature trees, grass, pebble paths, low-water plants, ground cover plantings and an original handmade red brick address street marker. There is also a two-car carport and a matching red brick, U- shaped dividing wall separating the lawn and the brick and pebble concrete main entry path. Two steps lead to the entry with a single row of bricks lined up and separated by a pebble concrete paths for the walkway.

The house is a unique with numerous details, varied window styles for example. Fortunately, the owners were given house plans and so besides the below descriptions, elevations and other details are provided in the attachments of this report and show that the house was built according to its original design and today retains its integrity.

Original plans of the plan view show that the main axis of the house runs north to south with a secondary axis running east to west. The house is further broken up into units of smooth plaster, French glass doors, a post and beam bump out on the south side of the main entryway and a small cruciform wing, which connects to the main house by a series of five floor to ceiling glass panels separated by thick redwood vertical posts perpendicular to the two mahogany front doors that mark the entry. This wing includes the bedrooms and is defined by high smooth plaster walls for privacy and three foot clerestory windows for light.

A dramatic beveled parapet is a T-shaped, cantilever (that stretches six feet from the wall) made of redwood and sits just below the flat composite roofline. It seemingly floats above the walls. The cornice encircles the entire house and is made up of two-foot redwood horizontal fascia boards angled at 90-degrees and with the parapet create the feeling of horizontality and grounds the house to the site as if it is springing of the earth. This is a key principal of the Prairie School.

There are panels of floor-to-ceiling glass windows throughout the house, a feature of Organic Geometric Modernism and Post and Beam styles that minimize the separation between the interior and outdoors. The mahogany doors, French doors, stucco walls and floor-to-ceiling glass windows alternate with each other to allow varying degrees of exposure with interior privacy.

The front of the bedroom wing features a low smooth plaster wall, two large casement windows and mitered glass corner windows. Continuing toward the north side, a high plaster wall allows for greater privacy for the secondary bedrooms and bathrooms. Each room has three-foot clerestory windows forming a continuous band brightening each room.

The eastern elevation of the house has bands of small windows above a high smooth plaster wall. The southeastern elevation of the house features a large divided carport with a tile floor and gravel to mimic a Hollywood-style driveway using the gravel instead of grass. The Southside of the house has a small utility unit, which has a small jalousie window and solid wood service door.

The rear or western elevation has a band of three-foot tall clerestory windows, some of which are the jalousie type. There is also a door into the rear of the house. There are large sliding windows and a pair of French doors leading into the kitchen. A low cantilever roof extends over a patio area. A band of eight floor to ceiling glass windows and French doors defines the area outside the dining and living rooms. The bank of clerestory windows continues above the bank of windows on the rear elevation. *See Continuation Sheet*

P3 a. Description (continued):

The rear elevation is further defined by floor to ceiling glass mitered edge windows. A wide red brick chimney rises from the ground to form a focal point, with three-foot tall clerestory windows on both sides of the chimney.

Another dominant feature of the western elevation is the original redwood and hand-made brick post and beam pergola over the patio with the three-foot high hand-made brick wall and wood bench. The patio is pebble concrete.

The northwest elevation reveals the living room extension with a high plaster wall and three foot clerestory windows above it. Continuing along the western elevation toward the north side of the house is a bedroom with floor to ceiling windows, a glass door and three-foot clerestory windows above it. The north elevation continues with the same pattern then introduces a large plate glass window adjacent to the sunken bathtub that is just inside.

Next along the north elevation is a bump out that features two hand-made brick piers with floor to ceiling glass windows in between and an exterior glass door, mitered glass window corners, a band of clerestory windows continues along the north side of the house. Four hand-made brick piers rest just outside this window to define the terrace. These piers do not connect to anything and are merely decorative and were part of the original blueprints just outside the master bedroom.

Continuing along the northeast elevation is a high plaster wall for privacy outside the master bedroom as well as the band of clerestory windows. At another right angle turn along the northeast elevation is a low plaster wall with a bank of six casement windows and clerestory windows. A small bump out outside the original playroom features two casement windows above a short plaster wall as well as mitered glass corner windows, followed by high plaster walls, clerestory windows, two exterior air conditioning units and exterior utility boxes.

The Organic Geometric Modernism style interior is not part of the designation nomination; however, it does reinforce the attention to detail and exemplifies the high standards of craftsmanship by the noted Modernism architect Rex Lotery. The interior also features a large sunken-carpeted living room with a prominent hand-made adobe style brick fireplace, an elevated small space with original Mexican tiles that served the first owners as a piano niche. The interior two-foot redwood crown molding mimics the exterior design as it is also angled at 90 degrees, and extends out into the room six-foot appearing to float above the living room. Philippine mahogany paneling is used on interior walls and built in closets and on the living room bar and floor to ceiling doors. Original Mexican tiles are found at the entry and four steps leading down to the sunken living room and up into the dining room.

One of the more curious features of this 1968 Modernism house is the cellar or bunker with its concrete coved ceiling. It is a 20-foot by 40-foot underground cellar on the northern side of the house. It is accessible through the kitchen/pantry area and predates the house. According to local history, in the 1930s, members of the Jehovah's Witnesses built a main house nearby (4825 Avion Way) along with a barn and corral. Apparently, the concrete shelter was too strong to be torn down and remains a relic from this earlier time with an interior stairway constructed by the Goodman's for access.

See Continuation Sheet

B. 10. Significance (continued)

Criterion C – ***Embodies distinctive characteristics of a style, type, period or method of construction or is a valuable example of the use of indigenous materials or craftsmanship.***

SIGNIFICANCE STATEMENT FOR CRITERIA C – The George and Iris Goodman/Rex Lotery House embodies the distinctive characteristics of the Organic Geometric Modernism style with strong Prairie School and Usonian influences by its design, its use and adaptation of style, setting, period and method of construction.

The house is significant for illustrating the Organic Geometric Modernism style. A main tenant of Organic Geometric Modernism is the site-specific design, which Rex Lotery did masterfully here. The house is integrated into the oddly shaped corner lot and surroundings (which were formerly part of a barren airfield). The horizontally of the design grounds it to the site, further tying it to the Organic Geometric style. The cruciform design has its main or longitudinal axis that runs parallel to Le Barron Road. Organic Geometric designs are rare in San Diego, the house at 5330 Le Barron Road is a stunning significant example of the narrow genre of Modernism and significant for that very reason alone.

The house is also significant for its integrity and as is exemplary of the mid-century Modernism movement and is significant for representing Organic Geometric Modernism architectural character defining features. The house retains its original and superb horizontal massing, spatial relationships, proportion, sharply angled corners, the use of natural materials such as mahogany, redwood, plaster, and glass bands or walls of windows that permit abundant light inside; a broad, flat roof with deep overhangs that give a reassuring sense of drama and shelter by its massive redwood beveled six foot parapet that creates a floating roofline. Covered carports instead of a garage, an open flow of rooms, ribbon clerestory windows providing a continuous band of light around the entire house. The juxtaposition of materials: plaster walls and floor to ceiling glass windows outside are among the main elements and expressions of Modernism architecture.

The George and Iris Goodman/Rex Lotery House is an excellent example of the continuum of early to mid-twentieth century architecture. Beginning with the Arts & Crafts movement and the Prairie School style evolving to Frank Lloyd Wright's pre-war and post-war Usonian revolutionary and highly individual style that was refocused using those Organic Geometric Modernism tenants of the mid-century Modernism movement. This house fuses a multiplicity of sources and styles without subscribing to a single aesthetic in a manner rarely seen in San Diego.

It reaches back to the Arts and Crafts movement that originated in England with John Ruskin, Charles Robert Ashbee, William Morris and others in the late nineteenth century. The movement spread to America without its socialism. Gustave Stickley, the Greene brothers in Pasadena, Bernard Maybeck, Irving Gill and others interpreted the Arts and Crafts movement in different ways, yet all subscribed to the rejection of the machine and other Victorian excesses in an attempt to bring about an American Democratic form of architecture and living.

The Prairie School was born among the principles of the Arts and Crafts movement, led by Frank Lloyd Wright and others primarily working in Chicago and other Midwest cities. The early Modern movement has its roots in the Prairie School with it emphasis on lack of decoration, free-flowing interior spaces and smooth clean lines. Wright's attempt to bring innovative designs to teachers and other middle-class Americans began in the 1930s with what he called his Usonian homes. One can nearly draw a straight line from the Arts and Crafts movement right through the early twentieth century Prairie School and the 1930s and 1940s Usonian homes through the post-war Modernism movement directly to the house at 5330 Le Barron Road. *See Continuation Sheet*

B. 10. Significance (continued)

The Prairie School influences include its integration with the surrounding landscape, horizontal lines, flat roof with broad eaves, windows assembled in horizontal bands, solid construction, craftsmanship and restraint in the use of decoration with a free flowing or open interior. The Usonian influences include a carport, single-story, concrete slab foundation, flat roof, clerestory windows, natural materials including glass, plaster and wood; all are in common with the character defining features of 5330 Le Barron Road.

The strong Prairie School influences would appear to be in deference to Frank Lloyd Wright. An examination of the Rex Lotery Archives at the University of California, Santa Barbara (UCSB) reveals that Lotery collected articles on Wright: including a 1954 issue of House and Home Magazine featuring Wright, a 1956 Arizona Highways Magazine on Wright's Taliesin, a 1956 House and Home Magazine on Wright's design ideas, the January 1963 House Beautiful Magazine of Wright's Hanna House–a key Usonian design in the Bay Area, a 1960 House and Home Magazine featuring a portfolio of four Wright homes, and a May 1958 Architectural Record Magazine on Wright's Guggenheim memorial. Lotery's UCSB Archives also include boxes of over 200 slides of Frank Lloyd Wright designs. It would certainly appear that Wright's Organic designs were influential on Lotery's work, including the house at 5330 Le Baron Road. George Goodman believed that Lotery studied with Frank Lloyd Wright. The key distinction is that facts show that Lotery studied Wright's work, but did not study with Wright at Taliesin. Ray Kappe, an important Modernism architect and former partner of Lotery, stated in an email exchange that Lotery was *"…an admirer of Frank Lloyd Wright's…the Goodman House looks very nice and is obviously Wright inspired"*.

The influence of Frank Lloyd Wright on the design at 5330 Le Barron Road can be traced to Wright's most famous design; the 1936 Lilane and Edgar Kaufmann Residence in Mill Run, Pennsylvania called Fallingwater. But are also reflective of several of Wright's early Usonian designs, including the Gordon House in Oregon, the Muirhead Farmhouse outside Chicago and the Afflick House in Bloomfield Hills, Michigan.

The horizontal nature of the structural forms, such as the appearance of floating floors over the stream at Wright's Fallingwater. In the case of the Goodman/Lotery house, the dramatic massive redwood parapet that floats above the clerestory windows is an interpretation of Wright's L plan Usonian cantilever. The overhang providing shelter while the clerestory windows emits light to all areas of the interior. Lotery has interpreted Wright's Usonian homes, including the Jacobs Residence (1936) with its floor-to-ceiling glass steeped parapet, the Hanna Residence (1936) with its horizontal and vertical massing, the Bernard Schwartz Residence (1939) with its second-story central massing, flat roof and clerestory windows. Lotery proves to be masterful at not simply identifying with Wright's design aesthetic, but skillfully applying Wrightian design principles into a highly individualistic interpretation of Wright's long career into this single house. Thus, creating a dramatic and beautiful house that is designed for its setting with natural materials for modern living. This is one of the finest examples of Organic Geometric Modernism houses in San Diego County and merits landmarking.

The massive redwood parapet is also reminiscent of Lotery's own residence in Brentwood (1962). Other Organic Modernism features include the use of natural building materials such as glass, plaster and wood. The floor-to-ceiling use of glass is both a feature of the Post & Beam architecture as well as the Organic Geometric Modernism styles. The glass is used to minimize the separation between the interior and the exterior. Organic features also include the emphasis on rectilinear geometry, asymmetrical facades and 90-degree right angles.

See Continuation Sheet

B. 10. Significance (continued)

The Prairie School (1901-1915) was developed as an antidote to the excesses and eclecticism of Victorian styles. Considered to be the only true indigenous American style because it did not reflect or express the elements that were found in preceding historic styles. The relevance of a building to nature and the landscape, the visual expression of natural materials and the idea of abandoning small, boxy rooms in favor on more open, integrated interior spaces were all features of this new Democratic style of architecture.

The Prairie School was heavily influenced by the Transcendentalist philosophy of Ralph Waldo Emerson and the Idealistic Romantics, who believed that better homes would create better people. The Prairie School was primarily a residential architectural movement that began in Chicago and rapidly spread across the Midwest and later the rest of America, north-central Europe and Australia. Its origins date to the 1890s and Louis Sullivan and later Frank Lloyd Wright, William Drummond, George Grant Elmslie, Barry Byrne, William Gray Purcell, Marion Mahony, Walter Burley Griffin, Francis Sullivan, George Washington Maher, John S. Van Bergen and other architects. Its origins also lie in tandem with the ideals and design philosophies of the Arts and Crafts movement during the late nineteenth and early twentieth centuries. The Prairie School (the term Prairie School was coined by author H. Allen Brooks in the 1960s) and the Arts & Crafts movement both served as an alternative to the then-dominant Classical Revival influence, both new movements sharing a desire for simplicity and function.

Artisans, most of who worked in Wright's Oak Park Studio, included Richard Bock, Orlando Giannini (who later built and lived in San Diego), George Niedecken and Alfonso Iannelli (who also worked briefly in San Diego), also contributed to the artistic designs of the Prairie School. The intense wave of conservative mood that swept the country after the First World War, combined with the demise of the Arts and Crafts movement signaled a change in taste and away from the values of the Prairie School. Frank Lloyd Wright and others promoted the idea of "organic architecture"; the primary principles are that a structure should look as if it belongs on the site, as if it naturally grew there. Wright also considered the horizontal orientation of the Prairie School style to be a distinctly American design concept.

In 1918, Irving Pond wrote: "*The horizontal lines of the new expression appeal to disciples of this school as echoing the spirit of the prairies of the great Middle West; which, to them embodies the essence of democracy.*" Author H. Allen Brooks describes this new architecture as reflecting the disposition of the single mass or composite massing, the shape of the low long hipped roof, the horizontal banding of windows, the emphatic belt course between the stories…the continuity of line, edge and surface, an inheritance from the earlier Shingle Style. The historical styles were rejected. The materials used were generally brick or wood or plaster. In the Prairie School early years, the appearance of the building was often typified by a low rectangular shape with asymmetrical, opposing features such as a forward projecting wings, laterally extending porch and an entrance opening.

Prairie School Characteristics included:

- Integration with the landscape
- 1 to 2 stories
- Projecting or cantilevered wings
- Ribbons or bands of windows, usually casement windows
- Clerestory windows
- Flat or slight hipped roof with wide overhanging eaves
- Use of natural materials, especially stone and wood
- Siding often stucco, stone or brick
- Stucco or smooth wall finish
- Geometric forms and horizontal lines
- Open interior spaces
- Restraint in the use of decoration
- Horizontal lines and elements to evoke and relate to the native prairie landscape

See Continuation Sheet

B. 10. Significance (continued)

San Diego's Modernism would also begin with Irving Gill. Gill borrowed from the Arts and Crafts movement and the Prairie School styles. In 1891, before arriving in San Diego, Gill joined the Adler and Sullivan firm in Chicago. He worked there until 1893, working side-by-side with Louis Sullivan's leading draftsman, a young Frank Lloyd Wright and was undoubtedly influenced by both Wright and Sullivan. Louis Sullivan's famous and most misunderstood mantra, "form follows function" from the early twentieth century was a dictum for the Modernism movement. Wright's Unity Temple (1905) and the Robie House (1919) were among the first examples of modern architecture in the United States. Walter Gropius, the founder of the German Bauhaus, claimed that Wright's 1911 Wasmuth Portfolio (100 Wright plates published in Germany) served as the Bible for European Modernism. The Deutscher Werkbund, a German association of architects and designers would pave the way for the Modernism movement in Germany following World War One, Peter Behrens was one of the Deutscher Werkbund's most famous artists, he trained Le Corbusier, Gropius and Mies van der Rohe in Europe.

In 1905, Irving Gill designed the first "San Diego Prairie School" houses along Seventh Avenue. The earliest Modern designs were Prairie School homes in San Diego were by Gill and William S. Hebbard along Seventh Avenue and include the Alice Lee Residence (1905), the Katherine Teats Cottage (1905), the Alice Lee Cottage (1905), the Cossitt Residence (1906) as well as the demolished Hamilton Residence (1908). One of the lasting legacies of early twentieth century Prairie School architecture is its influence upon the Modernism movement, including the Organic Geometric Modernism movement following World War Two. In 1916, The Craftsman, Gill would describe his brand of architecture with its straight lines, simple cubes and shear plain walls unadorned by cornices, overhangs or anything but a simple vine growing along its structure. Gill would emphasize simplicity and the importance of indoor-outdoor living. Gill's use of reinforced concrete and stark geometry is seen in Lilian Rice's clean lines of her Rancho Santa Fe homes (while employed by Richard Requa and Henry Jackson), her residential designs would stress the blending of house and garden. Many of Gill and Rice's design philosophies would carry forward in the indoor-outdoor living concepts by local post-war Modernists.

As the International style took hold, other architects strayed from its purely functionalist forms, while retaining highly Modernist characteristics. Eero Saarinen, Alvar Aalto and Oscar Niemeyer were three of the most prolific architects and designers of this movement, which would influence contemporary Modernism. Le Corbusier once described buildings as "machines for living", but people were not machines and it was suggested that people would not want to live in such impersonal buildings and homes. During the middle of the twentieth century, some architects began experimenting in organic forms that were more human and accessible. Mid-century Modernism or organic architecture became popular due to its democratic and playful nature. The term, "organic architecture" was coined by Frank Lloyd Wright. Materials, motifs and basic ordering principles that continue to repeat themselves throughout the house were some of its principles. The best-known example as referenced earlier is Wright's 1936 Fallingwater in rural Pennsylvania.

Usonian architecture grew out of Frank Lloyd Wright's earlier Prairie School homes. Both styles featured low roofs and open living spaces. Both styles made abundant use of brick, wood and other natural materials. Usonian houses are also described as a simplified version of Prairie School architecture. Following Wright's Prairie School period, he sought a new direction for his architecture. The four California blockhouses marked a fresh start. Like the Prairie School designs, they were multilevel. Wright designed his first Usonian house in 1935, moving toward single story homes for the middle class.

See Continuation Sheet

B. 10. Significance (continued)

Typically, Wright's Usonian homes were smaller, one-story structures set on concrete slabs with piping for radiant heat. Open carports took the place of garages. First developed in the 1930s by Wright during the depths of the Great Depression, without attics, basements and little ornamentation. Some believe that Wright termed these small homes Usonia meaning the *United States of North America.* Wright sought to create a democratic, distinctly national architectural style that was affordable for the "common people" of America. Wright's Usonian architecture played an important role in the evolution of America's mid-century homes. Despite Wright's aspirations toward simplicity and economy, the Usonian houses often exceeded budgeted costs, became unique, custom homes for families of comfortable means. Among Wright's early and key Usonian houses were the Herbert Jacobs House (1936) in Madison WI, the Pope-Leighey House (1936), the Curtis Meyer House (1948) and later, the Zimmerman House (1950).

Usonian Characteristics:

- Low or flat roofs
- Open living spaces
- Brick, wood and other natural materials
- One-story
- Set on concrete slab
- Carport
- Organic – "out of the ground and into the light"
- Clerestory windows
- Asymmetrical fireplaces

Following his employment with Gill, Richard Requa and Frank Mead would pursue "*Southern California Architecture*", the design of buildings and homes where "*…landscaping and the terrain would be compatible and compliment each other.*" Requa would utilize Gill's concepts on the 1935 California Pacific International Exposition, stressing stucco exteriors, tiled roofs, Moorish arches and unique chimney designs. Wright's son, John Lloyd Wright first worked in San Diego for Harrison Albright (Workingman's Hotel, also called the Golden West Hotel, 1913). John Lloyd Wright returned to San Diego following WW2 and designed several noteworthy Mid-Century homes in Del Mar, most reflective of his father's Prairie School style, but with a nod to Modernism. Another key local Modernist design was Rudolf Schindler's experiment in low-cost housing, the Pueblo Ribera Courts (1923) in La Jolla, following Schindler's association with Frank Lloyd Wright's Hollyhock House in Los Angeles. He sought to redesign the California modern home and create communal indoor-outdoor living.

In 1932, the International Exhibition of Modern Architecture was held at the Museum of Modern Art in New York City. Philip Johnson and Henry-Russell Hitchcock brought together many different components in design and architecture that would later be called the International style. With the rise of Nazism in Germany, several key Modernism figures would flee to America, including Marcel Breuer, Walter Gropius and Mies van der Rohe. High style Modernism design would dominate in commercial architecture but never in residential homes, with few exceptions. Early residential examples in America include the Lovell House in Los Angeles by Richard Neutra in the 1920s and the Case Study Houses. Between 1945 and 1966, architects including Neutra, Charles and Ray Eames and others commissioned The Case Study Houses in the greater Los Angeles area. Many of these designs employed a blurring the indoors with the outdoors. The Farnsworth House by Mies van der Rohe and the Glass House by Philip Johnson were classic examples of embracing "the box". While most viewed such houses as too cold and static for the average person, most Modernism architects viewed them as a necessary tenant of Modernism, uncluttered and pure Minimal designs.

See Continuation Sheet

B. 10. Significance (continued)

In a broader context, the Modernism movement began at the turn of the twentieth century with important changes seen in architecture and with the rapid technological advancements and modernization of society. The Modernism style embodies the post-war Modernism movement that gained popularity after the Second War World. Important architects following World War Two included Le Corbusier, Ludwig Mies van der Rohe, Walter Gropius, Frank Lloyd Wright and others.

Modernism is a complex movement, which has roots in other parallel movements, including Futuristism, Art Deco, Streamline Moderne, Expressionism, and all a combination of the rejection of Nineteenth century styles. All were searching for a new post-World War One and later post-World War Two aesthetic in art, design and architecture. World War Two and its aftermath were also major factors in driving innovation in building technology and later, architectural designs. The lack of wartime supplies would encourage experiments with prefabricated building, including Quonset huts, the post-war enameled-steel Lustron House (1947-1950) and Buckminster Fuller's experimental aluminum Dymaxion House.

The post-war Case Study House Program is credited as likely being the most influential on the development of San Diego Modernism, the use of "contemporary" style meant "…each architect might wish to change his idea or a part of his idea when time for actual building arrives". The "contemporary" style became popular locally as a result of the Case Study Homes, such features as indoor-outdoor living spaces with large patios; open, free-flowing floor plans; liberal use of glass; simple, economical structure and materials; low maintenance materials and landscape.

Three Case Study Homes were completed in San Diego, known as the Case Study Triad Houses. Killingsworth, Brady and Smith in La Jolla completed these Post and Beamn homes in 1959. Post and Beam was a highly individualized method of construction where structural framing consists of load bearing beams supported by columns rather than solid bearing wall, allowing for expansive use of glass along the perimeter of the building. Architects also used the natural slopes and landscape as well as the orientation of the structures to provide views and indoor-outdoor living opportunities while maintaining a certain level of privacy. Post and Beam houses are characteristically rectilinear with open floor plans that are grid-like in layout and based on a consistent module or beam length. The roofs are usually flat, open times with wide overhangs; they are also usually custom designed and involve high degrees of individualism. In San Diego, the majority of Post and Beam Modernism homes are found in Mission Hills, La Jolla, Point Loma, Del Cerro, Mt. Helix and Alvarado Estates.

Several different and distinct Modernism styles have also been identified in San Diego; including suburban tract homes that included mostly Minimal Traditional affordable homes for the returning World War Two veterans to new neighborhoods such as, Rolando, College area, Clairemont, Allied Gardens, Oak Park, Del Cerro, Lake Murray, San Carlos, University City and other communities. The Tract Ranch style was also a dominant residential post-war style that traces its origins to Cliff May's haciendas, Sunset Magazine's "Western Ranch Homes by Cliff May" in 1958 was essential toward the birth and growth of this popular genre. Other important sub-styles of local Modernism include Streamline Moderne, Futurist-Googie, Tiki-Polynesian, Custom Ranch, Contemporary, Brutalism, Organic Geometric, Organic Free-Form as well as Post and Beam (c. 1950-1970).

In San Diego, Lloyd Ruocco is regarded as the father of post-war Modernism. His designs mostly featured organic materials in their natural forms, and his later designs became less complex and were based more along the lines of the Los Angeles Case Study Homes. Ruocco worked in the offices of Requa and William Templeton Johnson following his graduation from U.C. Berkeley. He also worked under Rice on the master plan of Rancho Santa Fe. Ruocco's early designs (1937-1952) were mostly exposed redwood siding with flat roofs. Other important San Diego Modernists include Homer Delawie, a proponent of the Post & Beam branch of Modernism, Cliff May, William Cody, Loch Crane, Craig Ellwood, *See Continuation Sheet*

B. 10. Significance (continued)

Frank Hope, James Hubbell, Frederick Liebhardt, Paul McKim, C.J. Paderewski, Herb Turner, Richard Wheeler and many other talented architects.

In addition to Lloyd Ruocco, Sim Bruce Richards (1908-1983) would represent some of San Diego's finest organic architecture. Richards was also an artist, a designer. Following graduation from U.C. Berkeley, Richards designed rugs, which led to further training, but this time at Frank Lloyd Wright's very non-traditional Taliesin fellowship program. Learning about the sensuality of wood and organic designs at Taliesin, Richards would return to San Diego and work at William Templeton Johnson's office. During the 1950s and 1960s, Richards would design simple wood homes for loving clients, sometimes working with artist James Hubbell and Rhoda Lopez.

Organic Geometric (c. 1955-1975) is another important sub-style of Modernism, as stated above, its roots lie with Frank Lloyd Wright, who integrated structures into their surroundings, used local materials such as wood and stone and designed buildings that were respectful to their site. Like their Post and Beam Modern contemporaries, Organic Geometric architects also used glass to minimize the separation between interior and exterior and encourage indoor/outdoor living. Buildings were carefully sited to take advantage of views and other site features, often built on steep slopes and boasting large balconies. In terms of shape, architects designed these buildings with an emphasis on rectilinear geometry, asymmetrical facades, unusual rooflines, and angular shapes.

Examples of Organic Geometric architecture are rare in San Diego. Residential buildings in the Organic Geometric style were built by architects such as Sim Bruce Richards, who worked under Frank Lloyd Wright, Lloyd Ruocco, and John August Reed, who was at one time an assistant to Lloyd Ruocco and later worked with Sim Bruce Richards. These architects used the principles of organic design within the structure of geometric forms as a means of emphasizing both the man-made and natural elements of the buildings. Organic Geometric architectural designs were built primarily in the La Jolla and Point Loma areas; however examples of this style are extant throughout the region and should be treated as significant resources. The modern Organic architecture movement has its origins in the Prairie School and later Frank Lloyd Wright's Usonian designs. The Goodman's worked with some of these masters with other building projects, but when it came to designing their home they ventured past San Diego to seek out an architect to create the "warm contemporary" Organic Geometric Modern design they desired and found Rex Lotery.

The City of San Diego recognized exterior elements and characteristics associated with Organic Geometric Modernism include:

Character-Defining Features of Organic Geometric:
Primary

- Exposed structure and materials
- Square, diamond, polygon design motifs
- Natural materials (wood, stone, glass)

Secondary

Sharp angular massing

- Asymmetrical facades
- Complex roof forms
- Site specific design

See Continuation Sheet

B. 10. Significance (continued)

The house at 5330 Le Barron Road clearly reflects the Organic Geometric Modernism architectural aesthetic and time in which it was built. The house is significant because it retains a high degree of integrity, it displays a high degree of individualism, and its Organic Geometric Modernism style is both rare and intact. It is one of the best designs by a recognized Master Modernism Architect, Rex Lotery. While he is recognized as a master Modernism architect in Beverly Hills and Los Angeles, this is the only known Lotery design built in San Diego. Lotery's former partner, Ray Kappe, remembers a Lotery designed home though it has not been documented or located if it still exists.

The following is an analysis of the George and Iris Goodman/Rex Lotery House to demonstrate how it meets the Secretary of the Interior Standards for the Treatment of Historic Properties.

1. Location. The 1956 Sanborn Fire Maps did not include Alvarado Unit #3 as the house at 5330 Le Barron Road was built in 1967, completed in 1968. There is also no Sanborn Fire Maps of Alvarado Estates as there were too few homes in the area in 1956. Furthermore, the tiny Alvarado Unit #3 (Map 5185) dates to 1963, well after the latest Sanborn Fire Maps. However, based on the original 1966 blueprints, which shows the footprint and relationship of the house to the driveway it can be concluded that the house has not been moved from its original location and thus has excellent location.

2. Design. The house is an excellent example of post-war, Organic Geometric Modernism architectural style with Prairie School and Usonian influences. It has many character-defining features of a Modernism house: including a flat roof; little to no applied decoration; selected post and beam features; allowing use of expansive floor-to-ceiling glass windows; horizontal massing and large overhanging eaves. It is a strong integration of the interior and exterior spaces from a site specific, angular design based on a Prairie School modified cruciform plan. The Organic Geometric characteristics are rooted in its unique and creative siting; the house is integrated into a deep corner lot. The horizontally of the house grounds it to the site, further tying it to the Organic Geometric style. The expansive cantilevered roofline with a dramatic and massive T-shaped inverted thick beveled redwood parapet and cornice with a two foot thick redwood fascia board surrounding the house appears to float above a continuous band of three foot tall clerestory windows echoes the Organic Geometric style. The floor-to-ceiling use of glass is both a feature of the Post & Beam as well as the Organic Geometric Modernism styles. The glass is used to minimize the separation between the interior and the exterior spaces. The floor-to-ceiling glass windows, French doors are periodically alternated with high plaster walls that provide privacy. Organic features also include the emphasis on rectilinear geometry, right angle facades and angular shapes. Overall, the shape, bulk, scale and design of the house appears to have excellent integrity.

3. Setting. The house in Alvarado Unit #3 remains in situ. Alvarado Estates is a post-war suburban neighborhood that features contemporary, custom and Modernism homes, several Modernism architects designed excellent examples of Post & Beam Modernism homes, including historically designated Henry Hester and Ronald Davis (5120 Norris Road, 1958); Lloyd Ruocco (4727 Avion Way, 1970); Richard Neutra (Bond Residence, 4449 Yerba Santa, 1960); Byrum Residence, 5460 Toyon Road, 1959; the historically designated Cliff May House (4777 Avion Way, 1964); Sim Bruce Richards (1955); John Mortenson, William See, Louis Bodmer, Donald Goldman, Leonard Veitzer and Richard Wheeler Jr. The houses surrounding 5330 Le Barron Road are reflective of post-war high-end custom home building and provide an excellent setting.

See Continuation Sheet

B. 10. Significance (continued)

4. Materials. The house maintains its original character-defining features, including composite and gravel flat roof, a dramatic cantilevered, beveled parapet and cornice that encircles the entire house and is made up of two-foot redwood horizontal fascia boards angled at 90-degrees and with the parapet create the feeling of horizontality and grounds the house to the site. Oregon redwood was hand selected by the project manager of Parr Construction then specially milled. Hand-made bricks and tiles were selected and imported by George and Iris Goodwin from a small factory in Northern Mexico. Other materials include smooth plaster walls and floor-to-ceiling glass windows, glass clerestory windows. The brickwork/pebble stone hardscape is also original. The house has a carport. The foundation is concrete slab. Overall, the materials aspect of the integrity is excellent.

5. Workmanship. The house was designed by noted Los Angeles Modernism architect Rex Lotery and built by Parr Construction. It reflects excellent craftsmanship of an Organic Geometric Modernism house during the Modernism Mid-century era with strong Prairie School and Usonian influences. The house's interior also features a carpeted sunken living room with a massive hand-made adobe brick fireplace, exposed inverted massive redwood beveled cornice resting upon the clerestory windows that provide ample interior light as well as the two foot thick angled redwood fascia board which wraps around the interior space, Philippine mahogany paneling, built-in bar and floor to ceiling doors with original hardware. A piano alcove is nestled above the living room with original Mexican floor tiles and floor-to-ceiling glass windows and French doors. Overall, the workmanship aspect is excellent.

6. Feeling. The overall feeling of the neighborhood is that of a post-war, 1950s through 1980s neighborhood, with large lots of custom homes. The historical senses and feel of a person walking down the street would be nearly the same as the 1960s when this house was built. The 1968 Organic Geometric Modernism house has excellent integrity. Therefore, the feeling aspect is excellent.

7. Association. George Goodman, M.D. and Iris Goodman commissioned the house from Modernism master architect Rex Lotery. They lived in the house from the time it was built in 1968 until they sold it in 2003. Louis Philip "Phil" Cohn (1927-2015) and Alice Cohn (1928-2013) were the second residents until and the current residents L. Michael and Megan Costa purchased it in 2015.

Architect Rex Lotery has been called one of Southern California's leading postwar modernists and is recognized as a Master Architect in the City of Beverly Hills and with the City of Los Angeles in the Survey LA, Los Angeles Historic Resources Survey of 2013. Noted Modernism photographer Julius Shulman photographed Lotery's Schacker House (Beverly Hills) in 1957 and the Kahn, Kappe and Lotery Hattenbach House (Los Angeles County) in 1975.

In the 1950s, Lotery served as a draftsman with Barienbrock and Murry. Then he embarked upon a private career from 1957 until 1968 when he became a partner with the architectural firm of Prin, Kahn, Kappe & Lotery, Architects & Planners. In 1978 that firm changed its name to Kappe, Lotery, Boccato Architects/Planners.

Lotery's notable projects included the Schacker House, the Spanner House (1968), the Lotery Houses in Brentwood and Santa Barbara, the Kritzer House, the Freedman House, the Trousdale Development Company Model House (once owned by Elvis Presley), and the Barclay Bank and Shops Building. Lotery died in 2007, his archives are housed at the University of California, Santa Barbara.

See Continuation Sheet

B. 10. Significance (continued)

Clearly, this work shows that Lotery is worthy as a master Modernism architect, well known in Beverly Hills, Los Angeles and Santa Barbara. However the home at 5330 Le Barron Road is a rare example, likely his only design in San Diego. While Lotery is not currently recognized as a master architect in the City of San Diego, we believe that the quality of this single house and after further investigation may elevate him to be placed on the City of San Diego's List of Master Architects.

The house at 5330 Le Barron is a significant resource and represents a Modernism masterpiece built in San Diego. It is one of Rex Lotery's finest; it retains all of its physical features that illustrate the Post & Beam/Organic Geometric Modernism house in terms of massing, spatial relationships, proportion, pattern of floor-to-ceiling glass windows and texture of materials. Therefore, the house is significant for representing one of Lotery's best designs and one of San Diego's most significant Organic/Geometric Modernism house designs within a fairly rare architectural genre. While this report is not seeking designation based on Criteria D, it is hoped that Rex Lotery will someday be recognized specifically for this work and nominated to the City of San Diego's List of Master Architects.

As the Goodman's, the Cohen's or Costas and architect Lotery are not on the City of San Diego's official list of important people or master architect, the house has good association.

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See Continuation Sheet

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SD-07892	2001	HISTORIC PROPERTY SURVEY REPORT I15-SR67	CALTRANS
SD-06744	1995	OFFICE OF HISTORIC PRESERVATION AZTEC BOWL	CHERILYN WIDELL
SD-07780	2002	AN ARCHAEOLGICAL SURVEY OF THE ALVARADO TRUNK SEWER PROJECT, ALVARADO CANYON, SAN DIEGO, CALIFORNIA	BRIAN F. SMITH AND ASSOCIATES
SD-09432	2004	THE PASEO AT SAN DIEGO STATE UNIVERSITY, ENVIRONMENTAL IMPACT REPORT, VOLUME 1	CITY OF SAN DIEGO
SD-09697	2004	An Archaeological/Historical Study for the SDSU 2005 Campus Master Plan Revision	Brian F. Smith and Associates
SD-10324	2006	HISTORICAL ASSESSMENT OF THE BUILDING COMPLEX LOCATED AT 6050 EL CAJON BLVD., SAN DIEGO, CALIFORNIA, 92101	Kathleen Crawford
SD-10525	1973	ADOBE FALLS	PATRICIA E. TEAZE
SD-10536	1993	REPORT TO THE HISTORICAL BOARD FOR THE CITY OF SAN DIEGO WATER UTILITIES DEPARTMENT ALVARADO FILTRATION PLANT UPGRADE AND EXPANSION CIP 73-261	OGDEN ENVIRONMENTAL AND ENERGY SERVICES CO., INC.
SD-10545	2007	TALMADGE COMMUNITY	ASM AFFILIATES
SD-11129	2002	CULTURAL RESOURCES SURVEY FOR THE 60TH STREET PIPE REPLACEMENT/RELOCATION PROJECT (CIP 46-611.0, FUND 41506, DEPT. 773, O.A. 9544, J.O. 178401)	CITY OF SAN DIEGO - DEVELOPMENT SERVICES
SD-11185	2007	A CULTURAL RESOURCES STUDY FOR THE SDSU 2007 CAMPUS MASTER PLAN REVISION	BRIAN F. SMITH AND ASSOCIATES
SD-11265		SAN DIEGO STATE UNIVERSITY, 5300 CAMPANILE DRIVE, SAN DIEGO, CALIFORNIA 92182	
SD-11826	2008	ARCHAEOLOGICAL RESOURCES ANALYSIS FOR THE MASTER STORMWATER SYSTEM MAINTENANCE PROGRAM, SAN DIEGO, CALIFORNIA PROJECT. NO. 42891	AFFINIS
SD-12076	2007	HISTORICAL NOMINATION OF THE BARON X. KOUCH / NORMA MEYER SCHUH SPEC HOUSE #2, 4643 EL CERRITO DRIVE - EL CERRITO, SAN DIEGO, CALIFORNIA	LEGACY 106, INC.
SD-12200	2009	DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE MASTER STORM WATER SYSTEM MAINTENANCE PROGRAM (MSWSMP)	CITY OF SAN DIEGO DEVELOPMENT SERVICES DEPARTMENT
SD-12421	2000	FINAL: A CULTURAL RESOURCES INVENTORY OF THE PROPOSED AT&T / PF. NET FIBER OPTICS CONDUIT OCOTILLO TO SAN DIEGO, CALIFORNIA	ASM AFFILIATES, INC.
SD-12200	2009	DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE MASTER STORM WATER SYSTEM MAINTENANCE PROGRAM (MSWSMP)	CITY OF SAN DIEGO DEVELOPMENT SERVICES DEPARTMENT
SD-12510	2009	INDIVIDUAL HISTORIC ASSESSMENT REPORT FOR THE ALVARADO CHANNEL	AFFINIS

Report	Year	Report Title	Report Author/Publisher
SD-12296	2009	HISTORICAL ASSESSMENT OF THE 5585, 5595, 5605, 5619, & 5633 LINDO PASEO BUILDINGS SAN DIEGO, CALIFORNIA 92115	SCOTT A. MOOMJIAN, ESQ.
SD-12274	2000	ARCHAEOLOGICAL RESOURCES SURVEY, ALVARADO ESTATES, SAN DIEGO, CALIFORNIA	AFFINIS
SD-12325	2009	HISTORICAL ASSESSMENT OF THE 6229, 6237, & 6245 MONTEZUMA ROAD BUILDINGS SAN DIEGO, CALIFORNIA 92115	SCOTT A. MOOMJIAN, ESQ.
SD-13006	2011	MASTER STORM WATER SYSTEM MAINTENANCE PROGRAM	AFFINIS
SD-13143	2010	ARCHAEOLOGICAL RESOURCE MONITORING FORM: MITIGATION MONITORING OF SEWER GROUP 766 PROJECT	BRIAN F. SMITH AND ASSOCIATES, INC.
SD-13145	2010	ARCHAEOLOGICAL RESOURCE REPORT FORM: MITIGATION MONITORING OF SEWER & WATER GROUP 684A PROJECT	
SD-13162	2010	THE 1939 LIFE HOUSE 6025 WAVERLY HOUSE LA JOLLA, CALIFORNIA	CULTURAL LAND PLANNING AND RESEARCH
SD-13163	2010	HISTORICAL RESOURCES BOARD NOMINATION FOR THE WILLIAM F. WAHRENBERGER/ J.A. AND AMRY B. SMITH RESIDENCE	IS ARCHITECTURE
SD-13166	2011	7124 OLIVETAS AVENUE, LA JOLLA, CA 92037	KATHLEEN A. CRAWFORD
SD-06262	1997	MITIGATED NEGATIVE DECLARATION FOR ALVARADO TRUNK SEWER REALIGNMENT	CITY OF SAN DIEGO
SD-07015	1999	PUBLIC NOTICE OF PROPOSED NEGATIVE DECLARATION STUDENT HOUSING	CITY OF SAN DIEGO
SD-13333	2008	RESULTS OF HISTORICAL RESOURCES SURVEY OF THE ALVARADO APARTMENTS PROJECT, SAN DIEGO, CALIFORNIA	RECON ENVIRONMENTAL
SD-13470	2011	HISTORICAL RESOURCES BOARD NOMINATION FOR EASON/ CLIFF MAY RESIDENCE 4777 AVION WAY SAN DIEGO, CALIFORNIA 92115	IS ARCHITECTURE
SD-14013	2011	VERIZON- EL CAJON AND COLLEGE CA- TRILEAF PROJECT #351800	TRILEAF
SD-14085	2009	HISTORIC RESOURCE INVENTORY AND EVALUATION FOR THE SAN DIEGO STATE UNIVERSITY PLAZA LINDA VERDE PROJECT, SAN DIEGO, CALIFORNIA	ASM AFFILIATES, INC.
SD-14238	2013	CULTURAL RESOURCE RECORDS SEARCH AND SITE VISIT RESULTS FOR SPRINT NEXTEL CANDIDATE SD34XC524 (SDSU FOUNDATION), 5250 CAMPANILE DRIVE, SAN DIEGO, SAN DIEGO COUNTY, CALIFORNIA	MICHAEL BRANDMAN ASSOCIATES
SD-13823	1997	NATIONAL REGISTER OF HISTORIC PLACES NOMINATION SAN DIEGO STATE COLEGE HISTORIC DISTRICT SAN DIEGO, CALIFORNIA	HERITAGE RESOURCES
SD-14427	2012	CULTURAL RSOURCE REOCRDS SEARCH AND SITE SURVEY AT&T SITE SD0775 MONTEZUMA (COX ARENA) 5505 MONTEZUMA ROAD SAN DIGEO, SAN DIEGO COUNTY, CALIFORNIA 92115	ACE ENVIRONMENTAL, INC.
SD-14661	2013	CAMPUS CENTER APARTMENTS	CITY OF SAN DIEGO
SD-13121	2011	MONTEZUMA TRUNK SEWER	CITY OF SAN DIEGO
SD-14808	2014	CULTURAL RESOURCE MONITORING REPORT FOR THE MONTEZUMA TRUNK SEWER PROJECT CITY OF SAN DIEGO	BRIAN F. SMITH AND ASSOCIATES, INC.

Report	Year	Report Title	Report Author/Publisher
SD-14808	2014	CULTURAL RESOURCE MONITORING REPORT FOR THE MONTEZUMA TRUNK SEWER PROJECT CITY OF SAN DIEGO	BRIAN F. SMITH AND ASSOCIATES, INC.
SD-14740	2014	SEWER GROUP JOB 743	CITY OF SAN DIEGO
SD-15058	2009	CULTURAL RESOURCE MONITORING REPORT FOR THE BLOCK 3FF TALMADGE UTILITY UNDERGROUNDING PROJECT, CITY OF SAN DIEGO, CALIFORNIA	LAGUNA MOUNTAIN ENVIRONMENTAL
SD-15077	2014	CULTURAL RESOURCES RECORDS SEARCH RESULTS FOR T-MOBILE WEST, LLC CANDIDATE SD06026A (SD026 SDSU PHYSICAL PLANT) 5300 CAMPANILE DRIVE, SAN DIEGO, SAN DIEGO COUNTY, CALIFORNIA	ENVIRONMENTAL ASSESSMENT SPECIALISTS, INC.
SD-15078	2014	DIRECT APE HISTORIC ARCHITECTURAL ASSESSMENT FOR T-MOBILE WEST, LLC CANDIDATE SD06026A (SD026 SDSU PHYSICAL PLANT) 5300 CAMPANILE DRIVE, SAN DIEGO, SAN DIEGO COUNTY, CALIFORNIA	ENVIRONMENTAL ASSESSMENT SPECIALISTS, INC.
SD-15093	2014	CULTURAL RESOURCES RECORDS SEARCH AND SITE VISIT RESULTS FOR T-MOBILE WEST, LLC CANDIDATE SD06417A (SD417 SDSU RECITAL HALL) 5500 CAMPANILE DRIVE, SAN DIEGO, SAN DIEGO COUNTY, CALIFORNIA	ENVIRONMENTAL ASSESSMENT SPECIALISTS, INC.
SD-15102	2014	CULTURAL RESOURCES RECORDS SEARCH AND SITE VISIT RESULTS FOR T-MOBILE WEST, LLC CANDIDATE SD06702A (SD702 ALLIANCE FOR AFRICA), 5952 EL CAJON BOULEVARD, SAN DIEGO, SAN DIEGO COUNTY, CALIFORNIA	ENVIRONMENTAL ASSESSMENT SPECIALISTS, INC.
SD-15304	2015	CULTURAL RESOURCE MONITORING REPORT FOR THE SEWER GROUP 549 PROJECT (PART OF GROUP 3016) CITY OF SAN DIEGO	BRIAN F. SMITH AND ASSOCIATES, INC.
SD-15058	2009	CULTURAL RESOURCE MONITORING REPORT FOR THE BLOCK 3FF TALMADGE UTILITY UNDERGROUNDING PROJECT, CITY OF SAN DIEGO, CALIFORNIA	LAGUNA MOUNTAIN ENVIRONMENTAL
SD-15077	2014	CULTURAL RESOURCES RECORDS SEARCH RESULTS FOR T-MOBILE WEST, LLC CANDIDATE SD06026A (SD026 SDSU PHYSICAL PLANT) 5300 CAMPANILE DRIVE, SAN DIEGO, SAN DIEGO COUNTY, CALIFORNIA	ENVIRONMENTAL ASSESSMENT SPECIALISTS, INC.
SD-15078	2014	DIRECT APE HISTORIC ARCHITECTURAL ASSESSMENT FOR T-MOBILE WEST, LLC CANDIDATE SD06026A (SD026 SDSU PHYSICAL PLANT) 5300 CAMPANILE DRIVE, SAN DIEGO, SAN DIEGO COUNTY, CALIFORNIA	ENVIRONMENTAL ASSESSMENT SPECIALISTS, INC.
SD-15093	2014	CULTURAL RESOURCES RECORDS SEARCH AND SITE VISIT RESULTS FOR T-MOBILE WEST, LLC CANDIDATE SD06417A (SD417 SDSU RECITAL HALL) 5500 CAMPANILE DRIVE, SAN DIEGO, SAN DIEGO COUNTY, CALIFORNIA	ENVIRONMENTAL ASSESSMENT SPECIALISTS, INC.

Report	Year	Report Title	Report Author/Publisher
SD-15102	2014	CULTURAL RESOURCES RECORDS SEARCH AND SITE VISIT RESULTS FOR T-MOBILE WEST, LLC CANDIDATE SD06702A (SD702 ALLIANCE FOR AFRICA), 5952 EL CAJON BOULEVARD, SAN DIEGO, SAN DIEGO COUNTY, CALIFORNIA	ENVIRONMENTAL ASSESSMENT SPECIALISTS, INC.
SD-15109	2014	DIRECT APE HISTORIC ARCHITECTURAL ASSESSMENT FOR T-MOBILE WEST, LLC CANDIDATE SD06417A (SD417 SDSU RECITAL HALL) 5500 CAMPANILE DRIVE, SAN DIEGO, SAN DIEGO COUNTY, CALIFORNIA	ENVIRONMENTAL ASSESSMENT SPECIALISTS, INC.
SD-15893	2013	DIRECT APE HISTORIC ARCHITECTURAL ASSESSMENT FOR T-MOBILE WEST, LLC CANDIDATE SD06702A (SD702 ALLIANCE FOR AFRICA), 5952 EL CAJON BOULEVARD, SAN DIEGO, SAN DIEGO COUNTY, CALIFORNIA	EAS
SD-15910	2014	DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT REPORT FOR THE GRANTVILLE FOCUSED PLAN AMENDMENT	City of San Diego Planning Department
SD-15911	2014	HISTORIC RESOURCES RECONNAISSANCE SURVEY FOR GRANTVILLE FOCUSED PLAN AMENDMENT, GRANTVILLE, SAN DIEGO, SAN DIEGO COUNTY, CALIFORNIA	ASM Affiliates
SD-15912	2013	CULTURAL RESOURCES TECHNICAL REPORT FOR THE GRANTVILLE FOCUS PLAN AMENDMENT, SAN DIEGO, CALIFORNIA	ASM Affiliates
SD-15928	2014	NOMINATION FOR HISTORIC DESIGNATION MARTIN AND ENID GLEICH/HENRY HESTER & RONALD K. DAVID HOUSE	
SD-16623	2016	PHASE I CULTURAL RESOURCE SURVEY FOR THE DEL CERRO PROJECT CITY OF SAN DIEGO PROJECT NO. 435483 APN 463-010-10	Brian F. Smith and Associates

ADDRESS	CITY	ZIP	NR_STATUS	COMMN_NM	PROP_	PNUMBER	SHPO_ID	REPORT	NR_DESIG	CR_DESIG	NHL	CHL
5300 CAMPANILE DR	SD	92115	3		43111							
5300 CAMPANILE DR	SD	92115	3		43112							
5300 CAMPANILE DR	SD	92115	3		43113							
5300 CAMPANILE DR	SD	92115	3		43114							
5300 CAMPANILE DR	SD	92115	3		43115							
5300 CAMPANILE DR	SD	92115	3		43116							
5300 CAMPANILE DR	SD	92115	3		43117							
5300 CAMPANILE DR	SD	92115	3		43118							
5300 CAMPANILE DR	SD	92115			43120							
5300 CAMPANILE DR	SD	92115			43120							
5300 CAMPANILE DR	SD	92115	3		43115			DOE				
5300 CAMPANILE DR	SD	92115	3		43115							
5300 CAMPANILE DR	SD	92115	1	SAN DIEGO STATE	112051		HISTORI244	1131265	97000924			
5300 CAMPANILE DR	SD	92115	1		43113				97000924			
5300 CAMPANILE DR	SD	92115	1		43117				97000924			
5300 CAMPANILE DR	SD	92115	1		43114				97000924			
5300 CAMPANILE DR	SD	92115	1		43112				97000924			
5300 CAMPANILE DR	SD	92115	1		43116				97000924			
5300 CAMPANILE DR	SD	92115	1		43118				97000924			
5300 CAMPANILE DR	SD	92115	1	SAN DIEGO STATE	112072				97000924			
5300 CAMPANILE DR	SD	92115	1		43115				97000924			
5300 CAMPANILE DR	SD	92115	1	SAN DIEGO STATE	112098				97000924			
5300 CAMPANILE DR	SD	92115	1	SAN DIEGO STATE	112108				97000924			
5300 CAMPANILE DR	SD	92115	1	SAN DIEGO STATE	112111				97000924			
5300 CAMPANILE DR	SD	92115	1	SAN DIEGO STATE	112113				97000924			
5300 CAMPANILE DR	SD	92115	1	SAN DIEGO STATE	112121				97000924			
5300 CAMPANILE DR	SD	92115	1		43120				97000924			
5840 HARDY AV	LMSA	92115			0	P-37-017254	MOOMJIA04					
5841 HARDY AV	LMSA	92115			0	P-37-017254	MOOMJIA04					
5841 HARDY AV	LMSA	92115			0	P-37-017254	MOOMJIA04					
5841 HARDY AV	LMSA	92115			0	P-37-017254	MOOMJIA04					
5843 HARDY AV	LMSA	92115			0	P-37-017254	MOOMJIA04					
5843 HARDY AV	LMSA	92115			0	P-37-017254	MOOMJIA04					
5845 HARDY AV	LMSA	92115			0	P-37-017254	MOOMJIA04					
6050 EL CAJON BLVD	SAN DIEGO	92115	6Z	AZTEC BUDGET INN	0	37-027607	CRAWFK 67					

ADDRESS	DISTRICT	CNSTR _DATE	RESRCE_ATT	ARCHT_STYL	THEME_SIG	PERIOD_SIG
5300 CAMPANILE DR	SAN DIEGO STATE	1930	HP15	CALIFORNIA MISSION	SOC/ED,ART/LEI,ARCH	
5300 CAMPANILE DR	SAN DIEGO STATE	1930	HP15	CALIFORNIA MISSION	SOC/ED,ART/LEI,ARCH	
5300 CAMPANILE DR	SAN DIEGO STATE	1930	HP10,HP15	CALIFORNIA MISSION	SOC/ED,ART/LEI,ARCH	
5300 CAMPANILE DR	SAN DIEGO STATE	1930	HP15	CALIFORNIA MISSION	SOC/ED,ART/LEI,ARCH	
5300 CAMPANILE DR	SAN DIEGO STATE	1933	HP15	CALIFORNIA MISSION	SOC/ED,ART/LEI,ARCH	
5300 CAMPANILE DR	SAN DIEGO STATE	1930		CALIFORNIA MISSION	SOC/ED,ART/LEI,ARCH	
5300 CAMPANILE DR	SAN DIEGO STATE	1930	HP15	CALIFORNIA MISSION	SOC/ED,ART/LEI,ARCH	
5300 CAMPANILE DR	SAN DIEGO STATE	1930	HP15,HP38	CALIFORNIA MISSION	SOC/ED,ART/LEI,ARCH	
5300 CAMPANILE DR	SAN DIEGO STATE					
5300 CAMPANILE DR	SAN DIEGO STATE					
5300 CAMPANILE DR	SAN DIEGO STATE	1933	HP15	CALIFORNIA MISSION	SOC/ED,ART/LEI,ARCH	
5300 CAMPANILE DR	SAN DIEGO STATE	1933	HP15	CALIFORNIA MISSION	SOC/ED,ART/LEI,ARCH	
5300 CAMPANILE DR	SAN DIEGO STATE					
5300 CAMPANILE DR	SAN DIEGO STATE	1930	HP10,HP15	CALIFORNIA MISSION	SOC/ED,ART/LEI,ARCH	
5300 CAMPANILE DR	SAN DIEGO STATE	1930	HP15	CALIFORNIA MISSION	SOC/ED,ART/LEI,ARCH	
5300 CAMPANILE DR	SAN DIEGO STATE	1930	HP15	CALIFORNIA MISSION	SOC/ED,ART/LEI,ARCH	
5300 CAMPANILE DR	SAN DIEGO STATE	1930	HP15	CALIFORNIA MISSION	SOC/ED,ART/LEI,ARCH	
5300 CAMPANILE DR	SAN DIEGO STATE	1930		CALIFORNIA MISSION	SOC/ED,ART/LEI,ARCH	
5300 CAMPANILE DR	SAN DIEGO STATE	1930	HP15,HP38	CALIFORNIA MISSION	SOC/ED,ART/LEI,ARCH	
5300 CAMPANILE DR	SAN DIEGO STATE					
5300 CAMPANILE DR	SAN DIEGO STATE	1933	HP15	CALIFORNIA MISSION	SOC/ED,ART/LEI,ARCH	
5300 CAMPANILE DR	SAN DIEGO STATE					
5300 CAMPANILE DR	SAN DIEGO STATE					
5300 CAMPANILE DR	SAN DIEGO STATE					
5300 CAMPANILE DR	SAN DIEGO STATE					
5300 CAMPANILE DR	SAN DIEGO STATE					
5300 CAMPANILE DR	SAN DIEGO STATE					
5840 HARDY AV		1947	HP3	MODERN	RESIDENTIAL	1947
5841 HARDY AV		1947	HP3	MODERN	RESIDENTIAL	1947
5841 HARDY AV		1947	HP3	MODERN	RESIDENTIAL	1947
5841 HARDY AV		1947	HP3	MODERN ARCHITECTURAL STYLE	RESIDENTIAL	1947
5843 HARDY AV		1947	HP3	MODERN ARCHITECTURAL STYLE	RESIDENTIAL	1947
5843 HARDY AV		1947	HP3	MODERN ARCHITECTURAL STYLE	RESIDENTIAL	1947
5845 HARDY AV		1947	HP3	MODERN ARCHITECTURAL STYLE	RESIDENTIAL	1947
6050 EL CAJON BLVD		1945		MODERN	MODERN ARCH	1945-PRESENT

ADDRESS	APN
5300 CAMPANILE DR	PORTION OF LOT 67
5300 CAMPANILE DR	PORTION OF LOT 67
5300 CAMPANILE DR	PORTION OF LOT 67
5300 CAMPANILE DR	PORTION OF LOT 67
5300 CAMPANILE DR	PORTION OF LOT 67
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5300 CAMPANILE DR	PORTION OF LOT 67
5300 CAMPANILE DR	
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5300 CAMPANILE DR	
5300 CAMPANILE DR	
5300 CAMPANILE DR	
5300 CAMPANILE DR	
5840 HARDY AV	466-050-02
5841 HARDY AV	466-050-02
5841 HARDY AV	466-050-02
5841 HARDY AV	466-050-02
5843 HARDY AV	466-050-02
5843 HARDY AV	466-050-02
5845 HARDY AV	466-050-02
6050 EL CAJON BLVD	467-411-16

ADDRESS	CITY	ZIP	NR_STATUS	COMMN_NM	PROP_	PNUMBER	SHPO_ID	REPORT	NR_DESIG	CR_DESIG	NHL	CHL
5500 Canyon Crest Drive	SD	92182	1	AZTEC BOWL	84729				94000402			
5500 Canyon Crest Drive	SD	92182	1	AZTEC BOWL--CONCESSION STAND	93359				94000402			
5500 Canyon Crest Drive	SD	92182	1	AZTEC BOWL--LANDMARK PLAQUE	93360				94000402			
5500 Canyon Crest Drive	SD	92182	1	AZTEC BOWL--PRESS BUILDING	93357				94000402			
5500 Canyon Crest Drive	SD	92182	1	AZTEC BOWL--RESTROOM	93356				94000402			
5500 Canyon Crest Drive	SD	92182	1	AZTEC BOWL--SCOREBOARD	93361				94000402			
5500 Canyon Crest Drive	SD	92182	1	AZTEC BOWL--STADIUM	93353				97000924			
5500 Campanile Drive	SD	92182		SAN DIEGO STATE COLLEGE; 1ST	89430			NOMINATION				798
ADOBE FALLS ROAD	SD	92120		ADOBE FALLS	0							
6050 EL CAJON BLVD	SAN DIEGO	92115	6Z	AZTEC BUDGET INN	0	P-37-027710						
5822 LINDO PASEO	SAN DIEGO	92115	7		0							
4643 EL CERRITO DRIVE	SAN DIEGO	92115	3S, 4X	KOUCH / SCHUH HOUSE	0		MAYR124	1132076	0	0	0	0
5585 LINDO PASEO	SAN DIEGO	92115	6Z		0		MOOMJIA172	1132296	0	0	0	0
5595 LINDO PASEO	SAN DIEGO	92115	6Z		0		MOOMJIA172	1132296	0	0	0	0
5605 LINDO PASEO	SAN DIEGO	92115	6Z		0		MOOMJIA172	1132296	0	0	0	0

ADDRESS	DISTRICT	CNSTR _DATE	RESRCE_ATT	ARCHT_STYL	THEME_SIG	PERIOD_SIG
5500 Canyon Crest Drive	SAN DIEGO STATE COLLEGE HISTORIC DISTRICT					
5500 Canyon Crest Drive	SAN DIEGO STATE COLLEGE HISTORIC DISTRICT					
5500 Canyon Crest Drive	SAN DIEGO STATE COLLEGE HISTORIC DISTRICT					
5500 Canyon Crest Drive	SAN DIEGO STATE COLLEGE HISTORIC DISTRICT					
5500 Canyon Crest Drive	SAN DIEGO STATE COLLEGE HISTORIC DISTRICT					
5500 Canyon Crest Drive	SAN DIEGO STATE COLLEGE HISTORIC DISTRICT					
5500 Canyon Crest Drive	SAN DIEGO STATE COLLEGE HISTORIC DISTRICT / AZTEC					
5500 Campanile Drive	SAN DIEGO STATE COLLEGE HISTORIC					
ADOBE FALLS ROAD						
6050 EL CAJON BLVD		1945	HP6:1-3 STORY COMMERCIAL PROPERTY/ HP3: MULTIPLE F	MODERN	MODERN ARCHITECTURE	1945-PRESENT
5822 LINDO PASEO		1937	HP2	TUDOR	ARTS & CRAFTS PERIOD BUNGALOW	1910-1940
4643 EL CERRITO DRIVE	0	1931	HP2	SPANISH ECLECTIC	RESIDENTIAL ARCHITECTURE	1931-1957
5585 LINDO PASEO	0	1950	HP2	MODERN CONTEMPORARY		
5595 LINDO PASEO	0	1950	HP2	MODERN CONTEMPORARY		
5605 LINDO PASEO	0	1950	HP2	MODERN CONTEMPORARY		

ADDRESS	APN
5500 Canyon Crest Drive	
5500 Canyon Crest Drive	
5500 Canyon Crest Drive	
5500 Canyon Crest Drive	
5500 Canyon Crest Drive	
5500 Canyon Crest Drive	
5500 Canyon Crest Drive	
5500 Campanile Drive	
ADOBE FALLS ROAD	
6050 EL CAJON BLVD	467-411-16
5822 LINDO PASEO	46605052
4643 EL CERRITO DRIVE	16995627
5585 LINDO PASEO	46604006
5595 LINDO PASEO	46604007
5605 LINDO PASEO	46604008

ADDRESS	CITY	ZIP	NR_STATUS	COMMN_NM	PROP_	PNUMBER	SHPO_ID	REPORT	NR_DESIG	CR_DESIG	NHL	CHL
5619 LINDO PASEO	SAN DIEGO	92115	6Z		0		MOOMJIA172	1132296	0	0	0	0
5633 LINDO PASEO	SAN DIEGO	92115	6Z		0		MOOMJIA172	1132296	0	0	0	0
6229 MONTEZUMA ROAD	SAN DIEGO	92115	6Z		0		MOOMJIA173	1132325	0	0	0	0
6237 MONTEZUMA ROAD	SAN DIEGO	92115	6Z		0		MOOMJIA173	1132325	0	0	0	0
6245 MONTEZUMA ROAD	SAN DIEGO	92115	6Z		0		MOOMJIA173	1132325	0	0	0	0
4777 AVION WAY		0			0			1133470				
5111 COLLEGE AVENUE	San Diego	92115	0	5111 COLLEGE AVENUE	0	P-37-034948	VANWORM49		0	0	0	0
5119 COLLEGE AVENUE	San Diego	92115	0	5119 COLLEGE AVENUE	0	P-37-034949	VANWORM49		0	0	0	0
5141 COLLEGE AVENUE	San Diego	92115	0	5141 COLLEGE AVENUE	0	P-37-034950	VANWORM49		0	0	0	0
5155 COLLEGE AVENUE	San Diego	92115	0	5155 COLLEGE AVENUE	0	P-37-034951	VANWORM49		0	0	0	0
5157 COLLEGE AVENUE	San Diego	92115	0	5157 COLLEGE AVENUE	0	P-37-034952	VANWORM49		0	0	0	0
5721 LINDO PASEO	San Diego	92115	0	5721 LINDO PASEO	0	P-37-025752	VANWORM49		0	0	0	0
5723 LINDO PASEO	San Diego	92115	0	5723 LINDO PASEO	0	P-37-025751	VANWORM49		0	0	0	0

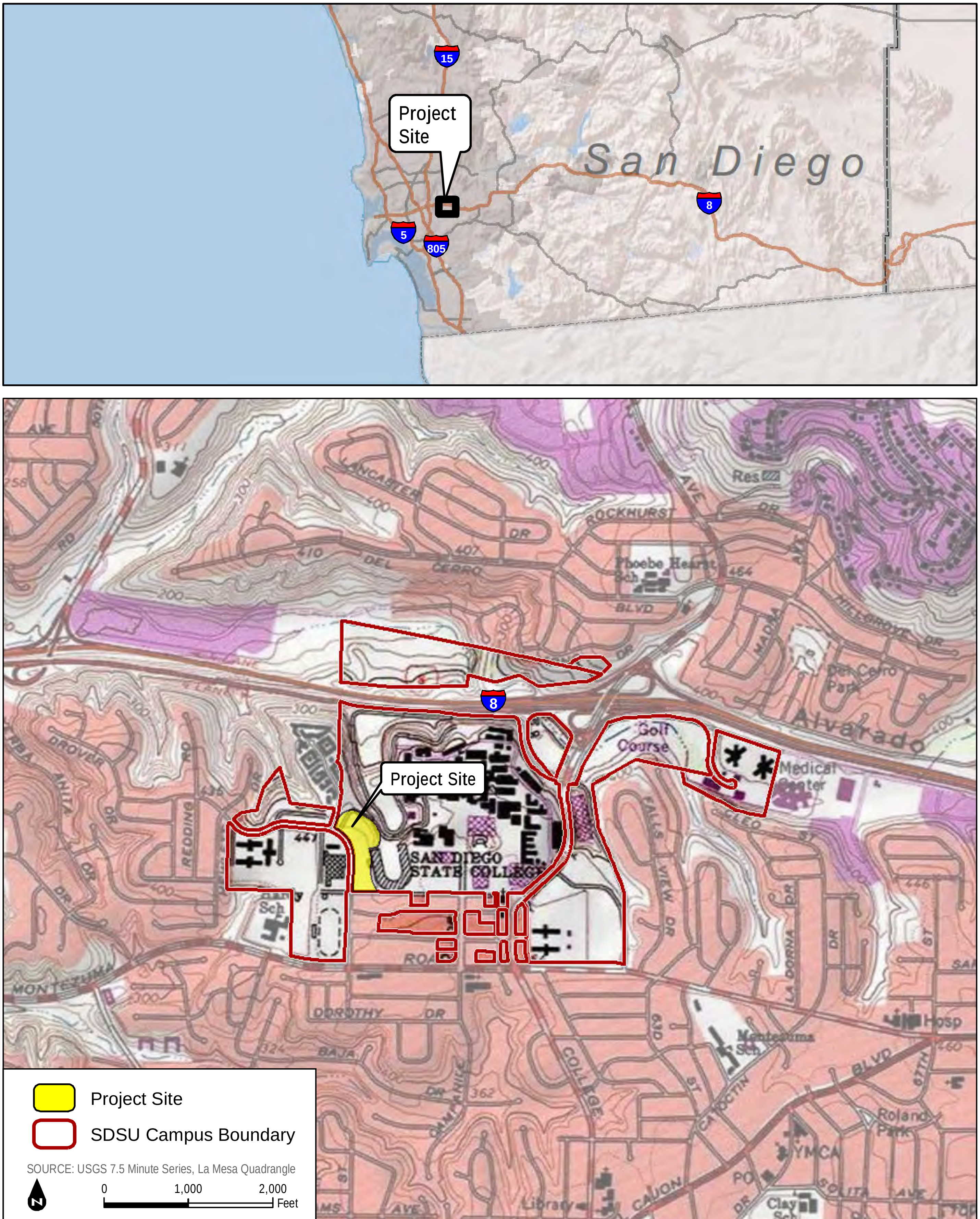
ADDRESS	DISTRICT	CNSTR _DATE	RESRCE_ATT	ARCHT_STYL	THEME_SIG	PERIOD_SIG
5619 LINDO PASEO	0	1950	HP2	MODERN CONTEMPORARY		
5633 LINDO PASEO	0	1950	HP2	MODERN CONTEMPORARY		
6229 MONTEZUMA ROAD	0	1951	HP2	MODERN MINIMAL TRADITIONAL		
6237 MONTEZUMA ROAD	0	1950	HP2	MODERN MINIMAL TRADITIONAL		
6245 MONTEZUMA ROAD	0	1951	HP2	MODERN MINIMAL TRADITIONAL		
4777 AVION WAY		1962	HP2- SINGLE FAMILY RESIDENCE	MODERN RANCH	ARCHITECTURE, MASTER ARCHITECT	1966
5111 COLLEGE AVENUE	0	1955	HP6- 1-3 STORY COMMERCIAL BUILDING	MODERN GAS STATION	NONE	0
5119 COLLEGE AVENUE	0	C. 1940-1945	HP6- 1-3 STORY COMMERCIAL BUILDING	POST WAR TRACK HOUSE	NONE	0
5141 COLLEGE AVENUE	0	1963	HP6- 1-3 STORY COMMERCIAL BUILDING	MODERN COMMERCIAL CONVENIENCE STORE		0
5155 COLLEGE AVENUE	0	1965	HP6- 1-3 STORY COMMERCIAL BUILDING	MODERN COMMERCIAL FAST FOOD		0
5157 COLLEGE AVENUE	0	1958	HP6- 1-3 STORY COMMERCIAL BUILDING	1950S COMMERCIAL		0
5721 LINDO PASEO	0	1941	HP2- SINGLE FAMILY PROPERTY	POST WAR TRACT HOUSE		0
5723 LINDO PASEO	0	1940	HP2- SINGLE FAMILY PROPERTY	POST WAR TRACT HOUSE		0

ADDRESS	APN
5619 LINDO PASEO	46604009
5633 LINDO PASEO	46604010
6229 MONTEZUMA ROAD	46717130
6237 MONTEZUMA ROAD	46717131
6245 MONTEZUMA ROAD	46717132
4777 AVION WAY	461-290-07
5111 COLLEGE AVENUE	467-010-25
5119 COLLEGE AVENUE	467-010-11
5141 COLLEGE AVENUE	467-010-23
5155 COLLEGE AVENUE	467-010-24
5157 COLLEGE AVENUE	467-010-28
5721 LINDO PASEO	466-050-43
5723 LINDO PASEO	466-050-42

ADDRESS	CITY	ZIP	NR_STATUS	COMMN_NM	PROP_	PNUMBER	SHPO_ID	REPORT	NR_DESIG	CR_DESIG	NHL	CHL
5734 MONTEZUMA ROAD	San Diego	92115	0	5734 MONTEZUMA ROAD	0	P-37-034953	VANWORM49		0	0	0	0
5742 MONTEZUMA ROAD	San Diego	92115	0	5742 MONTEZUMA ROAD	0	P-37-034954	VANWORM49		0	0	0	0
5830 LINDO PASEO	San Diego	92115	0	5830 LINDO PASEO	0	P-37-034955	VANWORM49		0	0	0	0
5505 MONTEZUMA ROAD	San Diego	92115	0	UNIVERSITY TOWERS	0	P-37-035268	LOFTUSS76		0	0	0	0
5716 HARDY AVENUE	San Diego	92115	0	WESLEY HOUSE STUDENT RESIDENCE	0	P-37-035429	CITYSD1131		0	0	0	0

ADDRESS	DISTRICT	CNSTR _DATE	RESRCE_ATT	ARCHT_STYL	THEME_SIG	PERIOD_SIG
5734 MONTEZUMA ROAD	0	1955	HP3- MULTIPLE FAMILY PROPERTY	MODERN APARTMENT BUILDING		0
5742 MONTEZUMA ROAD	0	1945	HP2- SINGLE FAMILY PROPERTY	SIMPLE POST MODERN STYLE TRACT HOUSE		0
5830 LINDO PASEO	0	C. 1950-1955	HP3- MULTIPLE FAMILY PROPERTY	MODERN APARTMENT BUILDING		0
5505 MONTEZUMA ROAD	0	1966	HP3- MULTIPLE FAMILY RESIDENCE	MODERN-CONTEMPORARY/ INTERNATIONAL OVERTONES	EDUCATION	0
5716 HARDY AVENUE	0	1946	HP3- MULTI FAMILY RESIDENCE, HP16- RELIGIOUS BUILDING	MODIFIED TUDOR		0

ADDRESS	APN
5734 MONTEZUMA ROAD	466-060-09
5742 MONTEZUMA ROAD	466-060-08
5830 LINDO PASEO	466-050-22
5505 MONTEZUMA ROAD	466-300-12
5716 HARDY AVENUE	466-050-58



SDSU ARC Expansion Project

San Diego State University

Figure 1
Project Location

SDSU ARC Expansion Project

San Diego State University

Figure 2
Project Site

SDSU ARC Expansion Project

SAN DIEGO STATE UNIVERSITY

Figure 5

Architectural Rendering – Southern Elevation

SOURCE: McCarthy / SmithGroupJJR 2018

SDSU ARC Expansion Project

San Diego State University

Figure 6

Architectural Rendering – Southern Elevation