DRAFT

INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION

DRAKE PARK SOCCER FIELD PROJECT

LONG BEACH, CALIFORNIA

Submitted to:

City of Long Beach
Department of Parks, Recreation and Marine
2760 Studebaker Road
Long Beach, California 90815

Prepared by:

LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, California 92614
949.553.0666

Project No. CLB1202

LSA

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1.0 INTRODUCTION

In accordance with the California Environmental Quality Act (CEQA) and its Guidelines, this Initial Study (IS) has been prepared as documentation for a Mitigated Negative Declaration (MND) for the proposed Drake Park Soccer Field Project located in the City of Long Beach (City). Consistent with *State CEQA Guidelines* Section 15071, this IS/MND includes a description of the project, an evaluation of the potential environmental impacts of the project, and findings from the environmental review.

This IS/MND evaluates the potential environmental impacts that may result from development of the proposed project. The City is the Lead Agency under CEQA. Implementation of this project would include approval of discretionary actions by the City. Therefore, the City Planning Commission is responsible for approval of the environmental documentation and for approval of the project.

1.1 CONTACT PERSON

Any questions regarding the preparation of this IS/MND, its assumptions, or conclusions should be referred to:

Craig Chalfant, Planner
City of Long Beach
Long Beach Development Services, Planning Bureau
333 West Ocean Blvd., 5th Floor,
Long Beach, California 90802
(562) 570-3165
craig.chalfant@longbeach.gov

2.0 PROJECT DESCRIPTION

2.1 PROJECT LOCATION AND SITE DESCRIPTION

The proposed Drake Park Soccer Field Project site is located in the Willmore area of the City of Long Beach (City) in Los Angeles County (County), California. The currently vacant project site is located to the east of the Los Angeles River and Interstate 710 (I-710). The project site is bound by Loma Vista Drive and single-family residential uses to the southeast and east, a ceramic factory and industrial uses to the south, De Forest Avenue and the Los Angeles River to the west, and existing industrial and commercial uses to the north (see Figures 2.1 and 2.2). Existing Drake Park facilities are located to the southeast across Loma Vista Drive. In addition, Loma Vista Park currently abuts a portion of the northeastern boundary of the project site. Currently, Loma Vista Park provides a grassy park area and park bench.

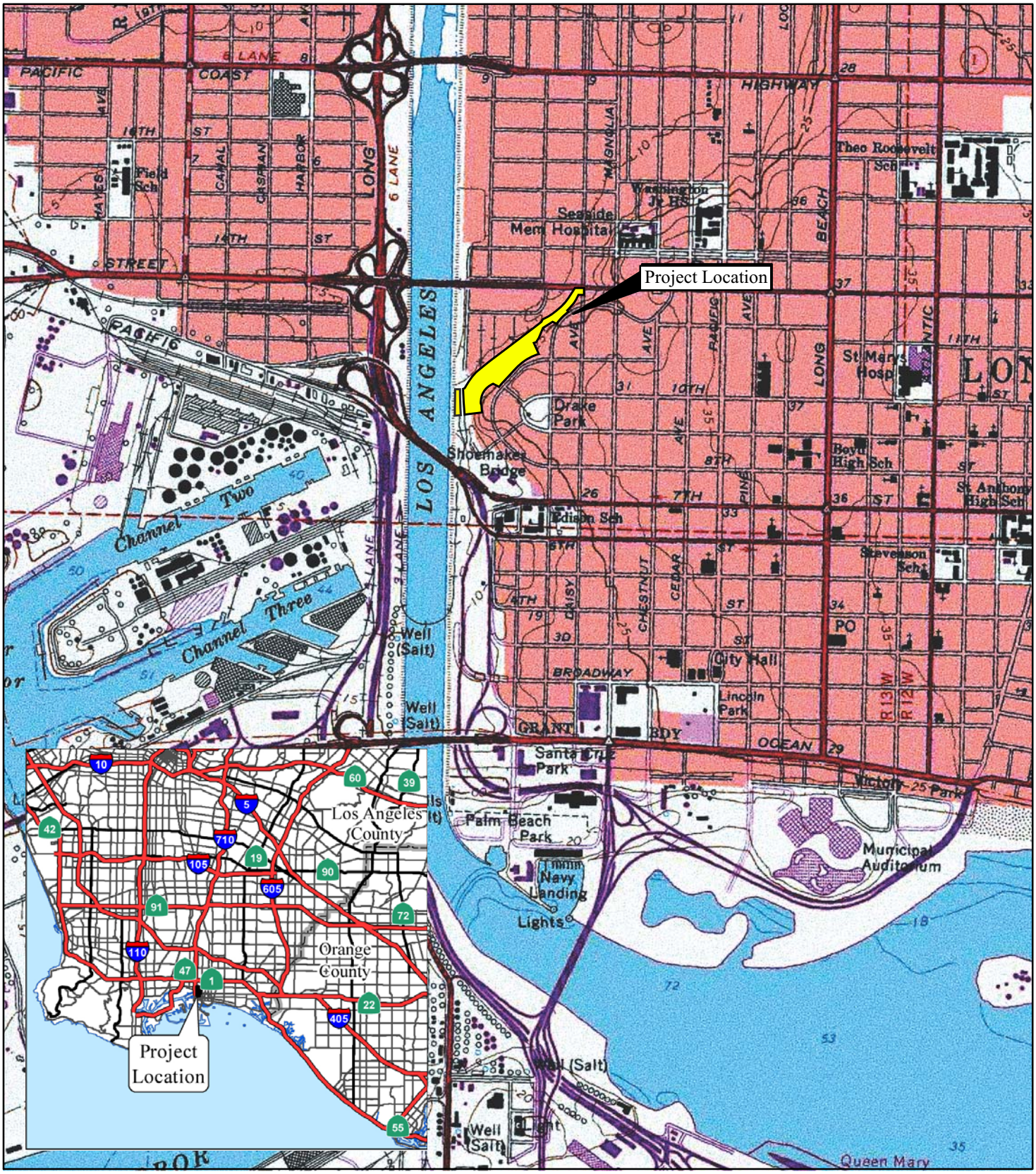
Regional access to the project site is provided by Interstate 710 (I-710), which is located west of the project site. Local access to the project site is provided from Anaheim Street (north), Loma Vista Drive (east), and De Forest Avenue (west).

The existing 8.75-acre (ac) project site is currently vacant and undeveloped. According to the City's General Plan Land Use Map, the project site is currently designated as Mixed Use District (Land Use District 7 [LUD-7]). LUD-7 allows for a mix of uses, including retail, offices, medical facilities, high-density residential, visitor-serving facilities, personal and professional services, and recreation facilities.

According to the City's Zoning Map, the project site is located within Subarea 1 of the Planned Development 10 (PD-10) zoning district. This subarea allows for medium-density residential land uses (R-2-N). Existing Drake Park facilities located adjacent to the project site are zoned as Subarea 3, Drake Park, allowing specifically for Drake Park uses. Implementation of the proposed project would require a zone change from PD-10 Subarea 1 to PD-10 Subarea 3.

2.2 PROJECT CHARACTERISTICS

The proposed project includes the development of an 8.75 ac new park facility on existing vacant parcels. The proposed project would consist of one striped soccer field, large landscaped open space/ passive park areas, a pedestrian walking trail, restroom facilities, and parking (Table 2.2.A). The proposed park would incorporate the existing Loma Vista Park into the new park layout by removing the existing chain-link fencing along the northeastern portions of Loma Vista Park. In addition, the proposed project would use a portion of a City-owned parking lot located near the northwest area of the project site to accommodate the proposed passive park space. The proposed Drake Park Soccer Field Project would be linear in form and would be characterized by an 8 foot (ft) wide pedestrian trail traversing the park from the northeast to southwest. The northeast entrance at Anaheim Street and N. Daisy Avenue is envisioned to be a gateway entrance to the proposed park.



LSA

FIGURE 2.1

0 1000 2000
FEET

SOURCE: USGS 7.5' QUAD - Long Beach ('81)

I:\CLB1202\G\ProjLoc.cdr (1/25/13)

Drake Park Soccer Field Project

Project Location

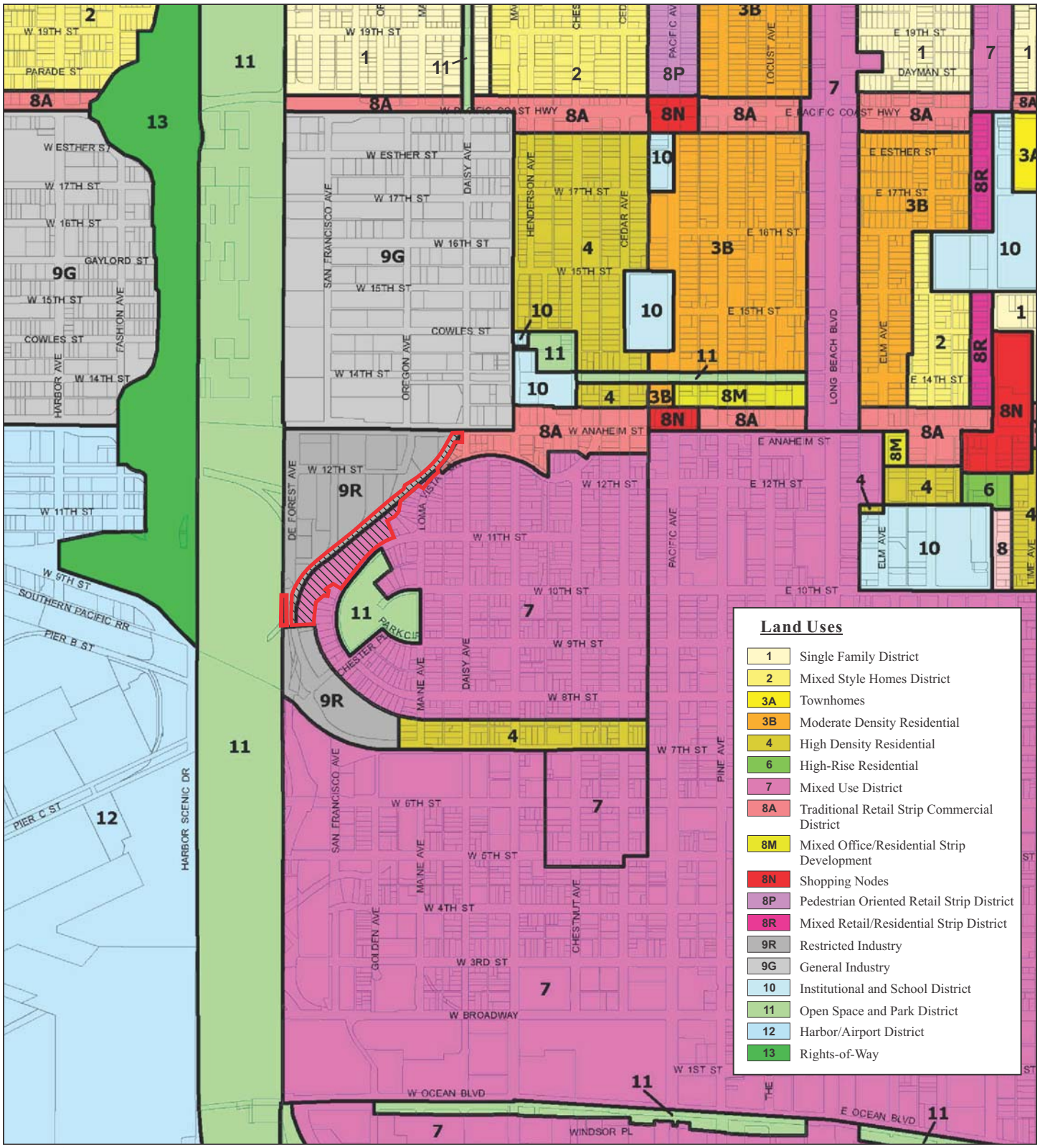


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FIGURE 2.2

Project Boundary

NOT TO SCALE

SOURCE: City of Long Beach

I:\CLB1202\G\Land Use Area.cdr (1/25/13)

Drake Park Soccer Field Project

Surrounding Land Uses

Table 2.2.A: Project Acreage

Uses	Square Footage	Acreage
Passive Space[1]	274,846	6.31
Soccer Field	53,050	1.21
On-Site parking	36,381	0.83
De Forest Street Improvements	16,170	0.40
Total	381,114	8.75

Source: LSA Associates, February 2013.
[1] Includes 667-square-foot restroom building

Lighting would be provided to the soccer field from six standard field light poles, and low-level security lighting would be provided along the pedestrian path at 50 ft intervals. Lighting would be directed downward and shielded so that it is contained within the site boundaries.

The proposed project will include both on- and off-site parking for visitors to the project site. Because the proposed project includes both a soccer field and passive park uses, the site is subject to varying parking standards. According to Division II, Parking Regulations, of the City's Municipal Code, the proposed project is required to provide 56 parking spaces for the proposed soccer field and 14 parking spaces for the passive park uses (2 spaces per acre of passive park uses). Therefore, the proposed project will provide a total of 66 spaces in a parking lot on the southwest end of the site on site and 28 spaces along De Forest Avenue to satisfy City parking requirements.

A driveway into the project site would be provided on De Forest Avenue and would provide access to the on-site parking lot. A raised circular median would be located on the northern end of the on-site parking lot. Pedestrian access to the site would be facilitated by existing sidewalks on Loma Vista Drive and West Anaheim Street. The designated pedestrian trail would link pedestrian entrances from De Forest Avenue to Anaheim Street. Pedestrian access to the proposed restroom facilities would be provided via the pedestrian pathway running throughout the project site (see Figure 2.3).

2.2.1 Construction Phasing

The proposed project would be implemented in several phases, with construction occurring over the course of approximately 12 months. Construction is anticipated to begin in late 2013 and be completed in late 2014, with project opening in 2015. A description of each construction phase and duration is provided in Table 2.2.B. All construction equipment, including construction motor vehicles, would be staged on site. Construction of the proposed project requires the import of approximately 5,932 cubic yards (cy) of soil to create the soccer field, pedestrian path, and passive park areas.

Table 2.2.B: Construction Phases

Construction Phase	Duration
Grading and Utilities	2 months
Flatwork (including parking lot), Site Amenities, Electrical	2 months
Irrigation	2 months
Restroom	2 months
Planting/Landscape Maintenance	4 months

Source: JDC Landscape Architecture and Planning 2013.

LSA

FIGURE 2.3

Proposed Site Boundary

N

0 200 400
FEET

SOURCE:Google Earth, 2013

I:\CLB1202\G\Site Plan.cdr (1/25/13)

Drake Park Soccer Field Project

Proposed Site Plan

3.0 ENVIRONMENTAL CHECKLIST FORM

1. Project title: Drake Park Soccer Field Project

2. Lead agency name and address:

City of Long Beach, Department of Parks, Recreation, and Marine
2760 Studebaker Road
Long Beach, California 90815

3. Contact person and phone number:

Craig Chalfant, Planner
Long Beach Development Services, Planning Bureau
333 West Ocean Blvd., 5th Floor
Long Beach, CA 90802
Phone: (562) 570-6368

4. Project location: The Drake Park Soccer Field Project is located in the southeastern portion of Los Angeles County within the City of Long Beach.

5. Project sponsor's name and address:

City of Long Beach, Department of Parks, Recreation, and Marine
2760 Studebaker Road
Long Beach, California 90803

6. General Plan designation: Land Use District No. 7 - Mixed Use District

7. Zoning: Planned Development 10 (PD-10), Subarea 1

8. Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)

The proposed project includes the development of an 8.75-acre (ac) new park facility on existing vacant parcels. The proposed project would consist of one striped soccer field, large landscaped openspace/passive park areas, a pedestrian walking trail, restroom facilities, and parking. The proposed park would incorporate the existing Loma Vista Park into the new park layout by removing the existing chain-link fencing along the northwestern portions of Loma Vista Park. The proposed Drake Park Soccer Field Project would be linear in form and would be characterized by an 8-foot (ft) wide pedestrian trail traversing the park from the northeast to southwest. The northeast entrance at Anaheim Street and N. Daisy Avenue is envisioned to be a gateway entrance to the proposed park.

9. Surrounding land uses and setting: Briefly describe the project's surroundings: The project site is bound by Loma Vista Drive and single-family residential uses to the southeast and east, a ceramic factory and industrial uses to the south, De Forest Avenue to the west, and existing industrial and commercial uses to the north. Existing Drake Park facilities are located to the southeast across Loma Vista Drive.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.):

State Water Resources Control Board (SWRCB), California Department of Parks and Recreation (State Parks)

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" prior to implementation of mitigation as indicated by the checklist on the following pages.

☒ Aesthetics	☐ Agriculture Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☒ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☒ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Service Systems	☒ Mandatory Findings of Significance

DETERMINATION (to be completed by the Lead Agency):

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION (MND) will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT (EIR) is required.

☐ I find that the proposed project MAY have a "potentially significant" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature _____ Date 2/27/13

Craig Chalfant
Printed Name

For

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).
5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less Than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9) The explanation of each issue should identify:
   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance

4.0 ENVIRONMENTAL CHECKLIST AND ANALYSIS

4.1 AESTHETICS

Would the project:

		Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☒	☐	☐

Discussion:

a) Less Than Significant Impact. A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. Aesthetic components of a scenic vista generally include (1) scenic quality, (2) sensitivity level, and (3) view access. Although the City does not provide a definition of scenic vistas, potential scenic vistas can include areas with views of the coastline, mountains, or other prominent scenic features in a region that are considered significant visual resources for residents and businesses. As such, there are no aesthetic or visual resources located on the project site or in the surrounding vicinity that have been designated in any City or other agency policy or plan. Therefore, the proposed project would have a less than significant impact related to a scenic vista, and no mitigation is required.

b) Less Than Significant Impact. The City General Plan Scenic Routes Element (1975) identifies Harbor Scenic Drive, Pacific Avenue, and West Ocean Boulevard as scenic routes within the vicinity of the project site.

Harbor Scenic Drive and Pacific Avenue are both approximately 0.5 mile (mi) away from the project site across the Los Angeles River; West Ocean Boulevard is located about 0.7 mi south of the project site. Harbor Scenic Drive and the Los Angeles River Bicycle Path are both designated as Scenic Bike Routes in the vicinity of the project site. The proposed project would not impact this bike route, but would enhance the recreational opportunities adjacent and accessible to the bike route.

There are no rock outcroppings and only a small number of trees present along the boundary of the existing site; therefore, the proposed project would not impact such a resource. The proposed project would develop the existing vacant lot with parks and recreational uses, thus enhancing views along scenic routes and improving the overall visual quality of the existing site. Impacts related to scenic resources would be less than significant, and no mitigation is required.

According to the Historic Preservation Element (2010) of the City General Plan, the closest historical resource is the Bembridge House located east of the proposed project site across Loma Vista Drive.

This house was built in 1906 has been designated a historic landmark by the City and the National Register of Historic Resources (National Register). However, the Bembridge House is not located within a scenic highway, and the proposed project would have no visual impact on the home. No mitigation is required. Please refer to Section 4.5, Cultural Resources, for further discussion regarding this historic resource.

c) Less Than Significant Impact. The visual character of a project site is defined by the quality of streetscape, buildings, and other humanmade and natural features within the project area. The project site is currently vacant and undeveloped. Some mature vegetation and debris are present on site. As the proposed project would result in the development of the project site with a soccer field, greenbelt area, and pedestrian pathway, it would enhance the visual character of the site and the surrounding community. Therefore, because the proposed project would not substantially degrade the visual quality of the site or surrounding areas, impacts are considered less than significant, and no mitigation is required.

d) Less Than Significant Impact with Mitigation Incorporated. The project site is located in an urban area surrounded by a mix of residential, park, and light industrial uses. These land uses include existing interior and exterior building lighting, residential lighting, street lighting, parking lot lighting, and landscape lighting. The proposed project would include lighting along the pedestrian pathway for security as well as sports lighting on the soccer field. The addition of on-site lighting would not impact the intensity of light to sensitive viewers such as residences in the surrounding area if all lighting is in conformance with City standards and would be directed downward and shielded to ensure it is contained within the boundaries of the project site. Mitigation Measure 4.1-1 is proposed to ensure that off-site light and glare are minimized. Implementation of this mitigation measure will reduce potential impacts related to light and glare to a less than significant level.

Mitigation Measure

Implementation of the following mitigation measure will ensure that potential light and glare impacts resulting from project implementation would be reduced to less than significant levels.

4.1-1 Prior to issuance of building permits, the City of Long Beach (City) Park Development Officer shall ensure that the final construction drawings include specifications for: (1) energy-efficient luminaries that control light energy, and (2) exterior sports field lighting that is shielded and directed downward and away from adjacent streets and adjoining land uses in a manner designed to minimize off-site spillage. On-site pathway and park lighting shall be limited to the minimum needed to comply with City security requirements.

4.2 AGRICULTURE & FOREST RESOURCES

Would the project:

		Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

Discussion:

a) No Impact. As shown in Figure 2.2, the project site is surrounded by industrial, residential, and park uses. The project site is not used for agricultural production and is not designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on maps prepared as part of the Farmland Mapping and Monitoring Program of the California Resources Agency. The proposed project would not convert farmland to a nonagricultural use or result in the conversion of farmland to a nonagricultural use. Therefore, no impacts to agricultural resources would occur, and no mitigation is required.

b) No Impact. As stated previously, the project site is not used for agricultural production, not zoned for agricultural use, and would not conflict with existing zoning for agricultural uses or a Williamson Act contract or contribute to environmental changes that would result in the conversion of farmland to a nonagricultural use. Therefore, no impacts to zoning for agricultural resources would occur, and no mitigation is required.

c) No Impact. As stated previously, the project site is currently a vacant lot zoned as Subarea 1 of PD-10, which allows for medium-density residential uses. The proposed project site is not used for timberland production, not zoned as forest land or timberland, and does not contain forest land or timberland. Therefore, no impacts to forest land resources would occur, and no mitigation is required.

d) No Impact. The project site is currently vacant. The site is zoned for medium-density residential development and is surrounded by residential, industrial, and park uses. The proposed project would not contribute to environmental changes that could result in conversion of forest land to a nonforest use. Therefore, no impacts to forest land would occur, and no mitigation is required.

e) No Impact. Currently the project site is zoned for residential development and is not used for agricultural production or designated or zoned for agricultural uses. The proposed project would not convert farmland to a nonagricultural use. Likewise, the proposed project would not contribute to environmental changes that would indirectly result in conversion of farmland to nonagricultural use. Therefore, no impacts to agricultural resources would occur, and no mitigation is required.

4.3 AIR QUALITY

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Discussion:

The following section is based on air quality modeling and analysis conducted by LSA Associates (January 2013). The air quality modeling worksheets are included in Appendix A.

The City is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD), which regulates air quality in the South Coast Air Basin (Basin). Air quality in the planning area is not only affected by various emission sources (mobile, industry, etc.), but also by atmospheric conditions such as wind speed, wind direction, temperature, rainfall, etc. The combination of topography, low mixing height, abundant sunshine, and emissions from the second largest urban area in the United States gives the Basin the worst air pollution problem in the nation.

Ozone levels, as measured by peak concentrations and the number of days over the State 1-hour standard, have declined substantially as a result of aggressive programs by the SCAQMD and other regional, State, and federal agencies. The reduction of peak concentrations represents progress in improving public health; however, the South Coast Area still exceeds the State standard for 1-hour and 8-hour ozone (O_3) levels. In addition, the South Coast Area was designated as an extreme nonattainment area for the federal 8-hour O_3 level. The United States Environmental Protection Agency (EPA) lowered the national 8-hour O_3 standard from 0.80 to 0.75 parts per million (ppm) on May 27, 2008. In early January 2010, the EPA proposed a stricter standard that has not yet been finalized.[1] The Long Beach air monitoring station, located at 2425 Webster Street (the closest monitoring station to the project site), recorded 1 day in the past 3 years on which the State and federal 8-hour O_3 standards were exceeded.[2]

[1] United States Environmental Protection Agency, 2013. National Ambient Air Quality Standards (NAAQS). Website: www.epa.gov/air/criteria.html. Accessed January 22, 2013.

[2] California Air Resources Board, 2013. iADAM Air Quality Data Statistics. Website: www.arb.ca.gov/adam/. Accessed January 22, 2013.

National and State standards have also been established for fine particulate matter (diameter 2.5 microns or less, $PM_{2.5}$), over 24-hour and yearly averaging periods. Fine particulate matter, because of the small size of individual particles, can be especially harmful to human health. Fine particulate matter is emitted by common combustion sources such as cars, trucks, buses, and power plants, in addition to ground-disturbing activities. The Basin is considered a nonattainment area for $PM_{2.5}$ at both the State and federal levels. Seven exceedances of the federal 24-hour standard for $PM_{2.5}$ were measured at the South Long Beach air monitoring station in the last 3 years.

The Basin is a serious nonattainment area for the federal PM_{10} standard and a nonattainment area at the State level. No exceedances of the federal 24-hour standard for particulate matter (PM_{10}) were measured at the South Long Beach air monitoring station in the last 3 years, and the State standards were exceeded 7 days in that same period. No exceedances of the State or federal carbon monoxide (CO) standards have been recorded at the Long Beach monitoring station since 1991. The Basin is currently considered an attainment area for State and federal CO standards.

a) Less Than Significant Impact. The main purpose of an air quality plan is to bring an area into compliance with the requirements of federal and State air quality standards. Such plans describe air pollution control strategies to be implemented by a city, county, or region. The most recent SCAQMD plan for attaining California Ambient Air Quality Standards, the 2012 Final Air Quality Management Plan (AQMP), was approved by SCAQMD's Governing Board on December 7, 2012.

The City's General Plan is consistent with the 2012 Final AQMP. Because the project does not require a General Plan Amendment and is considered to be generally consistent with the intent of the General Plan, the proposed project would not conflict with the Clean Air Plan. Impacts conflicting with applicable air quality plans are therefore considered less than significant, and no mitigation is required.

b) Less Than Significant Impact. Development of the proposed project could affect air quality by: (1) the release of dust and exhaust during the project construction period (construction impacts); and (2) the release of exhaust associated with visitors driving to and from the project site (operational impacts).

Guidelines and emissions thresholds established by the SCAQMD in its *CEQA Air Quality Handbook* (April 1993) are used in this analysis. It should be noted that the emission thresholds were established based on the attainment status of the air basin in regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (EPA), these emission thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

Thresholds for Construction and Operational Emissions that have Regional Effects

Table 4.3.A shows the CEQA significance thresholds that have been established for the Basin.

Table 4.3.A: SCAQMD Significance Thresholds

Air Pollutant	Construction Phase	Operational Phase
ROCs	75 lbs/day	55 lbs/day
CO	550 lbs/day	550 lbs/day
NO_X	100 lbs/day	55 lbs/day
SO_X	150 lbs/day	150 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day

Source: SCAQMD 2013.
CO = carbon monoxide
lbs = pounds
NO_X = nitrogen oxides
$PM_{2.5}$ = particular matter less than 2.5 microns in size
PM_{10} = particular matter less than 10 microns in size
ROCs = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides

Projects in the Basin with construction- or operation-related emissions that exceed any of the emission thresholds should be considered to be significant under CEQA.

Thresholds for Localized Significance

The SCAQMD published its *Final Localized Significance Threshold Methodology* in June 2003, recommending that all air quality analyses include an assessment of both construction and operational impacts on the air quality of nearby sensitive receptors. Localized Significance Thresholds (LSTs) represent the maximum emissions from a project site that are not expected to result in an exceedance of the national or State ambient air quality standards. LSTs are based on the ambient concentrations of that pollutant within the project Source Receptor Area (SRA) and the distance to the nearest sensitive receptor. For this project, the appropriate SRA for the LST is the South Coastal LA County area (Area 4).

In the case of CO and nitrogen dioxide (NO_2), if ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a State or federal standard, project emissions are considered significant if they increase ambient concentrations by a measurable amount. This would apply to PM_{10} and $PM_{2.5}$, both of which are nonattainment pollutants. For these two, the significance criteria are the pollutant concentration thresholds presented in SCAQMD Rules 403 and 1301. The Rule 403 threshold of 10.4 micrograms per cubic meter ($\mu g/m^3$) applies to construction emissions (and may apply to operational emissions at aggregate handling facilities). The Rule 1301 threshold of 2.5 $\mu g/m^3$ applies to nonaggregate handling operational activities.

To avoid the need for every air quality analysis to perform air dispersion modeling, the SCAQMD performed air dispersion modeling for a range of construction sites less than or equal to 5 ac in size and created look-up tables that correlate pollutant emissions rates with project size to screen out projects that are unlikely to generate enough emissions to result in a locally significant concentration

of any criteria pollutant. These look-up tables can also be used as screening criteria for larger projects to determine whether or not dispersion modeling may be required.

Actual LST construction thresholds depend on the details of the construction operations. Thus, the actual thresholds are described in the Construction Impacts section.

For operational emissions, the localized significance for a project larger than 5 ac can be determined by performing the screening-level analysis before using the dispersion modeling because the screening-level analysis is more conservative, and if no exceedance of the screening-level thresholds is identified, then the chance of operational LSTs exceeding concentration standards is small. Therefore, for a conservative approach, the LST screening thresholds for 5 ac are used in this analysis for operational emissions. Since the project is not an aggregate handling facility, operational LSTs are assessed with the SCAQMD screening thresholds.

Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality. There are existing residential uses surrounding the project site. Edison Elementary School is approximately 750 ft to the south. Using the LST thresholds for receptors at 82 ft (the minimum recommended by SCAQMD LST guidelines) from a 5 ac site for this project would result in a conservative analysis because project operational emissions would be emitted over an area much larger than a 5 ac site. Therefore, the following emissions thresholds apply during project operations:

- 123 pounds per day (lbs/day) of nitrogen oxides (NO_X)
- 1,530 lbs/day of CO
- 4.0 lbs/day of PM_{10}
- 2.0 lbs/day of $PM_{2.5}$

Short-Term (Construction) Emissions. Emissions of pollutants would occur during construction of the proposed project from soil disturbance and equipment exhaust. Major sources of emissions during site preparation, grading, and park construction include: (1) exhaust emissions from construction equipment and vehicles; (2) fugitive dust generated by construction vehicles and equipment traveling over exposed surfaces; and (3) soil disturbances from grading and backfilling.

Peak daily emissions associated with construction equipment exhaust for the proposed project during each of the construction tasks were calculated using the CalEEMod (Version 2011.1.1) model; they are summarized in Table 4.3.B and detailed in Appendix A. It is assumed that the construction phases would not overlap. Table 4.3.B shows that by complying with the SCAQMD's standard control measures, construction equipment/vehicle emissions during construction periods would not exceed any of the SCAQMD established daily emissions thresholds. No mitigation is required.

Table 4.3.B: Peak-Day Construction Emissions (lbs/day) by Phase

Construction Phase	Total Regional Pollutant Emissions, lbs/day						
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2e
Grading & Utilities	6.7	52	33	0.05	5.6	4.1	5,800
Flatwork, Amenities & Electrical	3.6	29	12	0.03	1.7	1.5	3,100
Irrigation	3.4	27	12	0.03	1.5	1.4	3,000
Restroom	4.8	32	24	0.04	2.1	2.0	4,200
Landscaping	5.3	32	21	0.03	2.9	2.8	3,100
Peak Daily Emissions	6.7	52	33	0.05	5.6	4.1	5,800
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**	**No**
Significant Emissions?	**No**	**No**	**No**	**No**	**No**	**No**	**Threshold**

Source: LSA Associates, Inc., February 2013.
CO = carbon monoxide
CO_2e = carbon dioxide equivalent
lbs/day = pounds per day
NOx = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SOx = sulfur oxides

Fugitive Dust. Blowing dust, combined with engine emissions, produces airborne matter referred to in air quality studies as fugitive dust, which includes larger dust particles as well as PM_{10} and $PM_{2.5}$. Fugitive dust emissions are generally associated with land clearing, exposure, and cut-and-fill operations. Once construction activities are complete, no further fugitive dust emissions occur. Dust generated daily during construction would vary substantially, depending on the level of activity, the specific operations, and weather conditions. Nearby sensitive receptors and on-site workers may be exposed to blowing dust, depending upon prevailing wind conditions. Fugitive dust would also be generated as construction equipment or trucks travel on unpaved areas of the construction site. The PM_{10} and $PM_{2.5}$ portions of the fugitive dust emissions are included in Table 4.3.B. As indicated in Table 4.3.B, fugitive dust emissions would not exceed the thresholds.

Since construction operations on site must comply with dust control and other measures prescribed by SCAQMD Rules 402 and 403 to ensure that short-term construction impacts are minimized, compliance with these rules is assumed in Table 4.3.B. Compliance with SCAQMD Rules 402 and 403 would ensure that fugitive dust (PM_{10} and $PM_{2.5}$) generation would be less than significant.

Localized Significance. The following analysis was undertaken consistent with SCAQMD *Final Localized Significance Threshold Methodology* (July 2008). The SCAQMD has issued guidance on applying CalEEMod modeling results to LST analyses. [1] Since CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment, standard equipment area coverage amounts have been provided by SCAQMD to determine the maximum daily disturbed acreage for comparison to LSTs. Table 4.3.C lists the equipment expected to be used during construction of this project, the SCAQMD usage rates, and the anticipated disturbed area amounts.

[1] From the SCAQMD website - www.aqmd.gov/ceqa/handbook/lst/CalEEModguidance.pdf.

Table 4.3.C: Equipment-Specific Grading Rates

Equipment Type	Acres per 8 hr day	Site Preparation		Grading	
		Pieces of Equipment	Acres Disturbed	Pieces of Equipment	Acres Disturbed
Crawler Tractor	0.5	0	0	2	1
Graders	0.5	0	0	1	0.5
Rubber-Tired Dozers	0.5	3	1.5	1	0.5
Scrapers	1	0	0	2	2
Tractors/Loaders/Backhoes[1]	0	4	0	2	0
Total Acres Disturbed		**1.5**		**4**	

Source: CalEEMod User Guide **Appendix A** and project plans.
[1] Under SCAQMD guidance, tractors/loaders/backhoes are not considered to add acreage to the total acres disturbed.
hr = hour

As shown in Table 4.3.C, the construction phase with the greatest daily emissions is the grading phase, during which it is expected that two excavators (crawler tractor), one grader, one rubber-tired dozer, and two scrapers could be used simultaneously on a "peak day." Based on Table 4.3.C, the proposed project will result in a maximum of 4 ac disturbed on any 1 day during the grading phase. Thus, LSTs for a 4 ac site are applicable for the project.

While the closest residences are adjacent to the project site, the SCAQMD LST Guidelines recommend using a distance of 82 ft to represent all residences 82 ft or less away. It is expected that the impacts will be the same throughout this range. Table 4.3.C shows the construction-related emissions of CO, NO_X, PM_{10}, and $PM_{2.5}$ compared to the LSTs for the South Coastal LA County area at a distance of 82 ft.

Table 4.3.D shows that the calculated emissions rates for the proposed on-site construction activities are below the localized significance thresholds for CO, NO_X, PM_{10}, and $PM_{2.5}$. Therefore, the proposed project would not cause any short-term localized air quality impacts, and no mitigation is required.

Table 4.3.D: Summary of On-Site Construction Emissions, Localized Significance by Task

On-Site Emissions Sources	Emission Rates (lbs/day)			
	NO_X	CO	PM_{10}[1]	$PM_{2.5}$[1]
Construction Equipment	49	31	5.3	4.0
Localized Significance Threshold	**109**	**1,301**	**12**	**7.0**
Exceed Significance?	**No**	**No**	**No**	**No**

Source: LSA Associates, Inc., January 2013.
[1] Total PM_{10} and $PM_{2.5}$ daily emissions with fugitive dust mitigation measures implemented.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxide
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size

Long-Term (Operational) Emissions. Long-term air emission impacts are associated with any change in permanent use of the project site by on-site stationary and off-site mobile sources that substantially increase emissions. Stationary source emissions include emissions associated with electricity consumption and natural gas usage. Mobile source emissions would result from vehicle trips associated with the proposed project.

The proposed project will generate 389 average daily trips (ADT) during weekdays and 1,332 ADT on Saturdays. The proposed project will also generate small quantities of area source emissions derived from organic compounds from cleaning products, landscape maintenance, etc. Using the default emission factors included in CalEEMod (Version 2011.1.1), emissions associated with project-related vehicular trips were calculated and are included in Table 4.3.E.

Table 4.3.E: Operational Emissions

Source	Pollutants (lbs/day)					
	ROG	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Area source emissions	0.98	0	0	0	0	0
Energy emissions	0	0	0	0	0	0
Operational (vehicle) emissions	7.5	19	70	0.12	13	1.2
Total Emissions	**8.5**	**19**	**70**	**0.12**	**13**	**1.2**
SCAQMD Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: LSA Associates, Inc., January 2013.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxide
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
ROG = reactive organic gases
SCAQMD = South Coast Air Quality Management District
SO_2 = sulfur dioxide

As shown in Table 4.3.E, project emissions (both stationary sources and vehicular sources) would not exceed the SCAQMD daily emissions thresholds. Therefore, the long-term air quality impacts of the proposed project are less than significant, and no mitigation measures are required.

Localized Significance. Table 4.3.F shows the calculated emissions for the proposed operational activities (fully described above) compared to the LSTs for the South Coastal LA County area at a distance of 82 ft. The localized significance analysis only includes on-site sources; therefore, the emissions shown include all stationary and 5 percent of the proposed project's mobile sources.

Table 4.3.F: Summary of Operation Emissions, Localized Significance

	Emission Rates (lbs/day)			
	NO_X	**CO**	**PM_{10}**	**$PM_{2.5}$**
Onsite Emissions	0.95	3.5	0.65	0.06
Localized Significance Threshold	**123**	**1,530**	**4.0**	**2.0**
Exceed Significance?	**No**	**No**	**No**	**No**

Source: LSA Associates, Inc., January 2013.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxide
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size

Table 4.3.F shows that the calculated emissions rates for the proposed operation activities are below the localized significance thresholds for CO, NO_X, PM_{10}, and $PM_{2.5}$. Therefore, the proposed project would not cause any long-term localized air quality impacts, and no mitigation is required.

CO Hot-Spot Analysis. There is a direct relationship between traffic/circulation congestion and CO impacts since exhaust fumes from vehicular traffic are the primary source of CO. CO is a localized gas that dissipates very quickly under normal meteorological conditions. Therefore, CO concentrations decrease substantially as distance from the source (intersection) increases. The highest CO concentrations are typically found in areas directly adjacent to congested roadway intersections. These areas of vehicle congestion have historically had the potential to create pockets of elevated levels of CO that are called “hot spots.” However, with the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the project vicinity have steadily declined. CO levels from the nearest air quality monitoring station (2425 Webster Street in the City) show that the highest concentrations over the past 3 years were 4.2 ppm for 1 hour compared to the 20 ppm threshold and 3.3 ppm for 8 hours compared to the 9 ppm threshold.

Microscale air quality impacts have traditionally been analyzed in environmental documents where the region was a nonattainment area for CO. However, the SCAQMD has demonstrated in the CO attainment redesignation request to the EPA that there are no “hot spots” anywhere in Southern California, even at intersections with much higher volumes, much worse congestion, and much higher background CO levels than anywhere in the project area. If the worst-case intersections in the air basin have no “hot spot” potential, any local impacts near the project site will be well below thresholds with an even larger margin of safety. Therefore, project impacts related to CO hot spots would be less than significant, and no mitigation is required.

c) Less Than Significant Impact. As stated previously, no exceedance of SCAQMD criteria pollutant emission thresholds would be anticipated for the proposed project. The projected emissions of criteria pollutants as a result of the proposed project are expected to be below the emissions thresholds established for the region. Cumulative emissions are part of the emission inventory included in the AQMP for the project area. Therefore, there would be no cumulatively considerable net increase of the criteria pollutants that are in nonattainment status in the Basin. No mitigation is required.

d) Less Than Significant Impact. As stated previously, the proposed project would not significantly increase long-term emissions within the project area. However, construction of the proposed project may expose sensitive receptors to airborne particulates, as well as a small amount of construction equipment pollutants (e.g., diesel-fueled vehicles and equipment). Although these construction emissions would not exceed thresholds, construction contractors would be required to eliminate or substantially reduce emissions by adhering to the SCAQMD standards for construction practices (Rules 402 and 403). Therefore, with adherence to SCAQMD Rule 402 and Rule 403 requirements (such as watering active sites at least twice daily and covering all trucks hauling dirt, sand, soil, or other loose materials), sensitive receptors would not be exposed to substantial pollutant concentrations during project construction, and potential short-term impacts are considered less than significant. No mitigation is required.

e) Less Than Significant Impact. Odor complaints are most commonly associated with agricultural land uses, wastewater treatment plants, food processing plants, chemical plans, composting, refineries, landfills, etc. Objectionable odors may be emitted during the operation of diesel-fueled equipment during construction of the proposed project. However, these odors would be limited to the project site during construction and would disperse quickly. Therefore, these odors are not considered a significant impact, and no mitigation is required.

4.4 BIOLOGICAL RESOURCES

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion:

This Biological Resources section is based on the information and findings of the Biological Resources Assessment (BRA) (LSA Associates, Inc. [LSA], January 2013) and the Preliminary Wetland Delineation Memorandum (LSA Associates, Inc. [LSA], January 2013), which are included in Appendix B**.**

a) Less Than Significant Impact. The proposed project would result in impacts to 8.75 ac of disturbed habitat on vacant parcels. Based on the biological survey, six plant and no animal species listed as threatened or endangered could potentially occur in the project area. However, none of the six listed species is anticipated to occur within the project site due to the fact that the project site is vacant, and therefore void of natural habitat. In addition to the 6 listed plant species, a number of nonlisted special-status species may occur in the project vicinity. These nonlisted special-status species include 16 plants, 1 invertebrate, 3 reptiles, 13 birds, and 12 mammals (all bats). However, none of the plants are anticipated to occur on the project site, and although the southern tarplant does occur in the project vicinity, this species was not observed during site visits.

One invertebrate, the monarch butterfly, is considered a special-status species when it gathers in considerable numbers. Individual monarchs were observed during site visits, but no concentration of butterflies was observed.

The four special-status bird species with a high probability of occurring on the project site are the Cooper's hawk, Allen's hummingbird, Peregrine falcon, and merlin. The Cooper's hawk and Allen's hummingbird are well adjusted to urban habitats and are more likely to occur in the project area. Peregrine falcon populations are likely to nest in the City due to the fact that they have taken to bridges and buildings as nesting sites. As such, these foraging birds may use almost any area along the Los Angeles River, including the project site. The merlin does not nest in the Los Angeles Basin and only occurs during fall, winter, and spring. However, it should be noted that the proposed project would result in the creation of additional green open space and park areas and would not result in adverse impacts to any of these bird species.

The Yuma myotis is the only special-status mammal species that has a moderate chance of occurring in the project area. This small bat is known to occur along the lower Los Angeles River. Additional bat species may occur farther upstream where water conditions are less brackish.

Project implementation would result in impacts to 8.75 ac of disturbed habitat. However, changes associated with the proposed project are anticipated to be positive. Many species, including native ones, are well-adapted to disturbed areas. These species are also well-adapted to parkland and open conditions that would be created with project implementation. The project's impacts on these species would be neutral; however, the proposed project would be beneficial for other native and nonnative species that prefer park-like conditions. Specifically, the monarch butterfly, Allen's hummingbird, and Cooper's hawk would benefit from the addition of open parkland. Therefore, impacts related to these species would be less than significant, and no mitigation is required.

b) No Impact. The project site is located within an urban area and does not contain riparian habitat or other sensitive natural communities identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife Service (CDFW). Therefore, no significant impacts related to riparian habitat or other sensitive natural communities identified in local or regional plans would occur as a result of project implementation, and no mitigation is required.

c) No Impact. According to the Preliminary Wetland Delineation Memorandum (January 2013), the project site does not contain jurisdictional waters or wetlands. Therefore, no direct removal, filling, or hydrological interruption of a wetland area would occur with development of the proposed project. No impacts to wetlands would occur, and no mitigation is required.

d) Less Than Significant Impact. The project site is located in an urbanized area and does not contain any wildlife movement corridors. Furthermore, whatever limited terrestrial wildlife movement that may occur along the edge of the Los Angeles River would not be negatively impacted as a result of project implementation. Therefore, impacts related to wildlife movement would be less than significant, and no mitigation is required.

e) Less Than Significant Impact with Mitigation Incorporated. As discussed in the Biological Resources Assessment (Appendix B), there are several nonnative tree species present along the perimeter of the project site. Although these trees are nonnative, they serve as wildlife habitat on the project site. The City's Municipal Code (Title 14.28, Trees and Shrubs) forbids the removal of any trees on City property without a permit from the Director of Public Works. Therefore, as outlined in Mitigation Measure 4.4-1, the proposed project would require a permit for removal of any trees located on the project site in order to be compliant with the City's Municipal Code. Upon obtaining this

permit, impacts related to conflicts with local policies or ordinances protecting biological resources would be less than significant.

f) No Impact. The project site is currently vacant and undeveloped. The project area is not located within the boundaries of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or any other local or regional conservation plan. Therefore, the proposed project would not result in an impact related to local ordinances, an adopted HCP, or NCCP, and no mitigation is required.

Mitigation Measure

Implementation of the following mitigation measure will ensure that impacts related to tree removal as a result of project implementation would be reduced to less than significant levels.

4.4-1 Prior to the issuance of any grading or construction permits, the City of Long Beach (City) Park Development Officer shall ensure that a tree removal permit has been obtained in accordance with the City's Municipal Code (Title 14.28, Trees and Shrubs).

4.5 CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Discussion:

The following Cultural Resources section is based on the information and findings of the Cultural Resources Assessment (LSA Associates, Inc. [LSA], January 2013) and the Paleontological Resources Assessment (LSA, January 2013), which are included in Appendix C.

a) Less Than Significant Impact. The project site is located in the City's Wilmore City/Drake Park Historic District, which is characterized by the first residential settlements in the City. As such, the project area contains significant examples of 20th Century architectural styles. One such example is the historic Bembridge House, located approximately 250 ft east of the project site on Park Circle Drive. According to the City General Plan Historic Preservation Element (2010), this house was built in 1906 in the Queen Anne Victorian Style and was designated as a historic resource by the National Register in 2005.

Despite its close proximity to the project site, views of the Bembridge House are largely obstructed due to mature vegetation surrounding the property. Due to the nature of the proposed project being the development of a park on currently vacant parcels, the proposed project would not destroy any historic materials, features, or spatial relationships that characterize the Bembridge House. Therefore, the proposed project would have no impact on historical resources under CEQA, and no mitigation is required.

b) Less Than Significant Impact with Mitigation Incorporated. On October 26, 2010, a records search of the project area and a 0.5 mi radius was conducted at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton. This records search indicated that one archeological site is located within the project area. This site is recorded as having prehistoric shell midden. In addition, the records search indicated that human remains were first discovered on the existing Drake Park site across Loma Vista Drive when the existing Drake Park facilities were being constructed. Native American consultation was also conducted, and the results indicated that the documented human skeletons may be aboriginal human remains associated with a Native American village site or large habitation area located in the project area. The results of the Native American consultation are included in Appendix C.

It should be noted that the project site has not been evaluated for either the California Register of Historic Resources (California Register) or the National Register.

During the field survey of the project area, evidence of the previously identified archaeological site was observed on the ground surface of the bluff immediately west of Loma Vista Drive. The bluff was also found to contain historic material dating to the turn of the last century that is likely associated with the Bembridge House or other historic properties that surround the park. This material consists of amethyst glass, miscellaneous glass, ceramic fragments, and other historic artifacts.

The majority of the project area has been disturbed by development and contains elements of the modern built environment. No cultural resources were found in these areas, and the potential to encounter unknown buried resources in these areas during construction is low due to the overall disturbance and the location of these areas in the floodplain of the Los Angeles River.

However, due to the historic settlement of the project area and the vicinity, and because there is a potential to encounter buried cultural materials associated with early 20th Century development, Mitigation Measure 4.5-1 has been proposed. Mitigation Measure 4.5-1 requires monitoring of any ground-disturbing activities adjacent to or in the bluff area by an archaeological and Native American monitor to ensure that there is no impact to cultural resources on the project site. Monitoring is not necessary in other areas of the project where the potential to encounter buried cultural material is low, or in areas where there will be fill and no ground disturbance at all. Implementation of Mitigation Measure 4.5-1 would reduce potentially significant impacts to cultural resources to a less than significant level.

Due to the potential for buried prehistoric cultural material, human remains, or historic deposits to be unearthed during ground-disturbing activities for the project, no ground disturbance should take place along the bluff immediately west of Loma Vista Drive. It should be noted that the City has designed the proposed project in a manner to avoid grading or excavation activities within the sensitive slope areas of project site. However, to ensure that there is no impact to intact cultural resources, Mitigation Measure 4.5-2 is proposed and requires that the bluff area be capped with materials so that no new disturbance can take place and so that the existing ground surface is not disturbed. Implementation of Mitigation Measure 4.5-2 would reduce potentially significant impacts to cultural resources to a less than significant level.

c) Less Than Significant Impact. A paleontological literature review and a paleontological resource records search was conducted through the Natural History Museum of Los Angeles County (LACM). This search indicated that geologic mapping of the site showed that Artificial Fill, Young Alluvium, Old Paralic Deposits, and Old Alluvial Fan and Valley Deposits are exposed within the project area. In addition, maps indicated the project site is underlain by young Holocene sediments and that fossils are relatively common. The LACM did not have any recorded vertebrate localities in the project area. However, the LACM did record numerous localities from the same or similar sedimentary deposits that occur within the project area. These localities have produced evidence of Rancholabrean land mammals, including bison, mammoth, diminutive antelope, horse, and giant ground sloth. However, the LACM believes that shallow excavations of the uppermost feet of the younger Quaternary alluvium exposed in portions of the project area are not likely to uncover significant fossil vertebrate remains. Therefore, because the proposed project does not require significant excavation and would only include ground-disturbing activities affecting the uppermost feet of soil on the project site, impacts related to a unique paleontological resource or geologic feature would be less than significant, and no mitigation is required.

d) Less Than Significant Impact with Mitigation Incorporated. As previously stated, there are known human remains in the project area that are likely of Native American descent. Therefore, the proposed project has been designed to avoid any ground-disturbing activities to buried archeological remains. However, in the event that human remains are encountered during project construction, State Health and Safety Code (HSC) Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code (PRC) Section 5097.98. The County Coroner must be notified of the find immediately. Therefore Mitigation Measure 4.5-3 has been proposed, outlining the procedures to be followed in the event human remains are discovered. Implementation of Mitigation Measure 4.5-3 would reduce impacts related to human remains on the project site to a less than significant level.

Mitigation Measures

Implementation of the following mitigation measure will ensure that impacts related to cultural resources as a result of project implementation would be reduced to less than significant levels.

4.5-1 Prior to issuance of any grading or construction permits, the City of Long Beach Park Development Officer shall confirm that a qualified archaeologist and a Native American representative have been retained to provide cultural resource monitoring services at the project site. The Native American representative and the archeological monitor shall be present during all ground-disturbing activities in the bluff areas during project construction to ensure there are no impacts to cultural resources. Monitoring is not necessary in other areas of the project where the potential to encounter buried cultural material is low, or in areas where there will be fill and no ground disturbance at all. In the event that previously undocumented cultural resources are identified while monitoring during construction activities, the archaeological monitor shall have the authority to direct work away from the find until it can be assessed, and treatment per the guidelines established by the California Environmental Quality Act (CEQA) can be recommended. If previously undocumented cultural resources are identified in any other area of the project site during ground-disturbing activities, a qualified archaeologist shall be contacted to assess the nature and significance of the newly discovered resources.

4.5-2 Prior to issuance of any grading or construction permits, the City of Long Beach Park Development Officer shall confirm that project construction plans require the bluff area to be capped with materials so that no new disturbance can take place and so that the existing ground surface is not disturbed. The area to be capped shall be identified by a qualified archaeologist. The cap should be of sufficient depth so as not to disturb the existing ground surface. The criteria for the cap are as follows: that it be visually distinct from the existing native soil; that it is of known origin; and that it is culturally sterile. If existing built environment is being removed, there shall be no new disturbance below the level of the existing modern disturbance or in any intact soils.

4.5-3 In the event that that human remains are encountered during construction activities, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Los Angeles County (County) Coroner has determined the origin and disposition of the remains pursuant to State Public Resources Code Section 5097.98.

The County Coroner shall be notified of the find immediately. If the human remains are determined to be of Native American descent, the County Coroner shall notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). The City of Long Beach shall give permission to the MLD to inspect the site of the discovery. The MLD shall complete the inspection of the site within 72 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of the remains and items associated with Native American burials.

4.6 GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Discussion:

a) i) Less Than Significant Impact. The City, like the rest of Southern California, is located in a seismically active area. According to the City's General Plan Seismic Safety Element (1988), the nearest significant active fault to the project site is the Newport-Inglewood Fault, located approximately 3 mi southeast of the project site. The project site is not located within the boundaries of an active "Earthquake Fault Zone" as defined by the State of California in the Alquist-Priolo Earthquake Fault Zoning Act, and there are no known active faults crossing the site. Therefore, impacts related to the rupture of a known earthquake fault as depicted on the most recent Alquist-Priolo Earthquake Fault Zoning Map are anticipated to be less than significant, and no mitigation is required.

ii) Less Than Significant Impact. Although the project site is not within a designated Alquist-Priolo Earthquake Fault Zone, the region has previously experienced earthquake activity. In the event a major earthquake was to occur within any of the faults in the region, the result could range from moderate to severe ground shaking. As with most areas in Southern California, damage to development and infrastructure associated with the surrounding areas could be expected as a result of significant ground shaking during a strong seismic event in the region. However, due to the nature of the project being a recreational park containing no inhabitable structures, impacts to the park facilities due to strong seismic ground shaking are expected to be less than significant.

iii) Less Than Significant Impact. Liquefaction most commonly occurs when three conditions are present simultaneously: (1) high groundwater; (2) relatively loose, cohesionless (sandy) soil; and

(3) earthquake-generated seismic waves. The presence of these conditions has the potential to result in a loss of shear strength and ground settlement, causing the soil to behave as a fluid for a short period of time.

According to the City's General Plan Seismic Safety Element (1988), the project site is not located within an area with a high liquefaction potential. In addition, due to the nature of the proposed project being a recreational park containing no inhabitable structures, liquefaction impacts to the park facilities are expected to be minimal. Therefore, potential impacts related to liquefaction are anticipated to be less than significant, and no mitigation is required.

iv) Less Than Significant Impact. Landslides are most common where slopes are steep, soils are weak, and groundwater is present. According to the City's General Plan Seismic Safety Element (1988), the project site does not lie within an area with a high potential for landslides. Although there is an existing slope along the southern boundary of the site, the project site is generally flat, and soils would be imported to create an even grade for development of the soccer field and associated park amenities. The proposed project does not require any significant grading, and no new slopes would be created. Therefore, impacts related to landslides would be less than significant, and no mitigation is required.

b) Less Than Significant Impact with Mitigation Incorporated. During construction activities involving the import of soil, there would be an increased potential for soil erosion. Additionally, during a storm event, soil erosion could occur at an accelerated rate. The increased erosion may result in short-term water quality impacts as identified in Section 4.9, Hydrology and Water Quality. A Storm Water Pollution Prevention Plan (SWPPP) will be prepared in accordance with the State of California Regional Water Quality Control National Pollution Discharge Elimination System (NPDES) Permit to prevent construction dirt, materials, and debris from entering the runoff stream and being discharged into the ocean. Therefore, the proposed project would be required to implement Mitigation Measure 4.9-1 (Section 4.9, Hydrology and Water Quality). With implementation of Mitigation Measure 4.9-1 (Section 4.9, Hydrology and Water Quality), impacts related to erosion during construction would be reduced to less than significant levels.

In its existing setting, the project site is characterized by previously graded topsoil, light vegetation, and debris. During operation, the project would not increase the volume of runoff from the site because the proposed project would include landscaped pervious surfaces intended to capture storm water runoff. In addition, the project would include Design Best Management Practices (BMPs) to further reduce the volume and velocity of runoff from the project site (refer to Section 4.9, Hydrology and Water Quality). Therefore, impacts related to erosion during operation of the project site would be less than significant, and no mitigation is required.

c) Less Than Significant Impact. As stated previously, the project site is not located within an area identified as having a potential for liquefaction or landslides. Currently, there is a slope from the eastern end of the project site near Loma Vista Drive to the western end of the site. However, the project site would be designed to be cohesive with the existing topography of the site to ensure this slope would not contribute to instability on site. Therefore, impacts related to unstable soils would be less than significant, and no mitigation is required.

d) Less Than Significant Impact. Expansive soils generally consist of clay materials that occupy more volume when wet or hydrated. Volume changes associated with moisture content in expansive soils can cause uplift in the ground when they become wet, or less commonly, cause settlement when they dry out.

According to the City's General Plan Seismic Safety Element (1988), the project site is located in an area with cohesionless surface soils consisting of sand, silty sand, and sandy silt that are typically medium to very dense. These near-surface soils on the project site are anticipated to possess a low expansion potential. Additionally, the imported soils will be compacted as recommended by the project engineer and in accordance with City Building Codes. Therefore, the potential for expansive soils on the project site is considered less than significant, and no mitigation is required.

e) No Impact. The proposed project does not include construction of, or connection to, septic tanks or alternative wastewater disposal systems. The new restroom facility will be connected to the City sewer system. Therefore, the proposed project would not result in any impacts related to the capability of the soils to adequately support the use of septic tanks or alternative wastewater disposal systems, and no mitigation is required.

4.7 GREENHOUSE GAS EMISSIONS

Would the project:		Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b)	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion:

The following greenhouse gas and climate change section is based on air quality modeling conducted by LSA Associates (January 2013). The air quality modeling worksheets are included in Appendix A.

a) and b) The following response applies to Questions 4.7.a and 4.7.b.

Less Than Significant Impact. Global climate change (GCC) is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other significant changes in climate (such as precipitation or wind) that last for an extended period of time. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures.

The prevailing scientific opinion on climate change is that "most of the warming observed over the last 50 years is attributable to human activities."[1] Increased amounts of carbon dioxide (CO_2) and other greenhouse gases (GHGs) are the primary causes of the human-induced component of warming. The observed warming effect associated with the presence of GHGs in the atmosphere (from either natural or human sources) is often referred to as the greenhouse effect.[2]

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced GCC are:[3]

- CO_2
- Methane (CH_4)
- Nitrous oxide (N_2O)

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1 Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: Working Group I: The Physical Science Basis*. http://www.ipcc.ch/publications_and_data/ar4/wg1/en/contents.html. Accessed January 25, 2013

2 The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse lets heat from sunlight in and reduces the amount of heat that escapes, greenhouse gases like carbon dioxide, methane, and nitrous oxide in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, although an excess of greenhouse gas results in global warming, the *naturally occurring* greenhouse effect is necessary to keep our planet at a comfortable temperature.

3 The greenhouse gases listed are consistent with the definition in Assembly Bill (AB) 32 (Government Code 38505), as discussed later in this section.

- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF_6)

In June 2005, Governor Schwarzenegger established California's GHG emissions reduction targets in Executive Order (EO) S-3-05. The EO established the following goals for the State of California: GHG emissions were to be reduced to 2000 levels by 2010; GHG emissions should be reduced to 1990 levels by 2020; and GHG emissions should be reduced to 80 percent below 1990 levels by 2050.

California's major initiative for reducing GHG emissions is outlined in Assembly Bill (AB) 32, the "Global Warming Solutions Act," passed by the California State legislature on August 31, 2006. AB 32 requires the California Air Resources Board (ARB) to:

- Establish a statewide GHG emissions cap for 2020, based on 1990 emissions, by January 1, 2008
- Adopt mandatory reporting rules for significant sources of GHG emissions by January 1, 2008
- Adopt an emissions reduction plan by January 1, 2009, indicating how emissions reductions will be achieved via regulations, market mechanisms, and other actions
- Adopt regulations to achieve the maximum technologically feasible and cost-effective reduction of GHGs by January 1, 2011

To assist public agencies in the mitigation of GHG emissions or analyzing the effects of GHGs under CEQA, including the effects associated with transportation and energy consumption, Senate Bill (SB) 97 (Chapter 185, 2007) required the Governor's Office of Planning and Research (OPR) to develop CEQA guidelines on how to minimize and mitigate a project's GHG emissions. On February 16, 2010, the Office of Administrative Law (OAL) approved the CEQA Guidelines Amendments and filed them with the Secretary of State for inclusion in the California Code of Regulations (CCR). The Amendments became effective on March 18, 2010. The Amendments encourage Lead Agencies to consider many factors in conducting a CEQA analysis, but preserve the discretion granted by CEQA to Lead Agencies in making their determinations.

State CEQA Guidelines Section 15064.4 states:

> (a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based on available information, to describe, calculate, or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:
>
> (1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; or

(2) Rely on a qualitative analysis or performance based standards.

(b) A lead agency may consider the following when assessing the significance of impacts from greenhouse gas emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

State CEQA Guidelines Section 15064(b) provides that the "determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data," and further states that an "ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

As such, currently neither the CEQA statutes, OPR guidelines, nor the State CEQA Guidelines prescribe specific quantitative thresholds of significance or a particular methodology for performing an impact analysis. As with most environmental topics, significance criteria are left to the judgment and discretion of the Lead Agency.

The recommended approach for GHG analysis included in the Governor's OPR June 2008 Technical Advisory (TA) is to: (1) identify and quantify GHG emissions, (2) assess the significance of the impact on climate change, and (3) if significant, identify alternatives and/or mitigation measures to reduce the impact below significance.[1] The June 2008 OPR guidance provides some additional direction regarding planning documents as follows: "CEQA can be a more effective tool for GHG emissions analysis and mitigation if it is supported and supplemented by sound development policies and practices that will reduce GHG emissions on a broad planning scale and that can provide the basis for a programmatic approach to project-specific CEQA analysis and mitigation. For local government Lead Agencies, adoption of general plan policies and certification of general plan EIRs that analyze broad jurisdiction-wide impacts of GHG emissions can be part of an effective strategy for addressing cumulative impacts and for streamlining later project-specific CEQA reviews."

[1] State of California, 2008. Governor's Office of Planning and Research. *CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act Review*. June 19.

As part of the process of developing the State CEQA Guidelines pertaining to GHG emissions analysis, OPR asked ARB technical staff to recommend statewide interim thresholds of significance for GHGs. The ARB released a preliminary draft staff proposal in October 2008 that included initial suggestions for significance criteria related to industrial, commercial, and residential projects. Although the ARB anticipated adopting the significance criteria in 2009 to allow coordination with OPR's efforts on GCC, no formal announcement of adoption has been made.[1] While in draft form, the ARB's *Recommended Approaches for Setting Interim Thresholds for Greenhouse Gases Under the California Environmental Quality Act* does provide some assistance to the City in evaluating whether this project would impede the State's mandatory requirements under AB 32 to reduce statewide GHG emissions to 1990 levels by 2020.

The Guidance does not specifically identify park projects, but does generally describe three classes of common projects: industrial, commercial, and residential projects. For each type of project, the Guidance recommends that a two-pronged threshold be employed, one performance based and one numerical. For performance standards, the draft guidance suggests that operations and construction of the project be evaluated for their consistency with applicable performance standards contained in plans designed to reduce GHG emissions and/or help meet the State's emission reduction objectives in AB 32. The Guidance contains two numerical standards that will guide the City's analysis of the impacts of this project to a degree. First, the Guidance states that some small residential and commercial projects, emitting 1,600 metric tons of carbon dioxide equivalent (CO_2e) per year or less, would clearly not interfere with achieving the State's emission reduction objectives in AB 32 (and EO S-03-05) and thus may be deemed categorically exempt from CEQA. The Guidance does not state or imply that projects emitting more than 1,600 metric tons of CO_2e per year will necessarily result in a significant impact, although at this point the Guidance has no precise numerical threshold for commercial and residential projects. For industrial projects, the Guidance proposes that projects that emit less than 7,000 metric tons of CO_2e per year may be considered less than significant, recognizing that AB 32 will continue to reduce or mitigate emissions from these sorts of projects over time.

While some policy makers and regulators suggest that a zero emissions threshold would be appropriate when evaluating GHGs and their potential effect on climate change, such a rule appears inconsistent with the State's approach to mitigation of climate change impacts. AB 32 does not prohibit all new GHG emissions; rather, it requires a reduction in statewide emissions to a given level. Thus, AB 32 recognizes that GHG emissions will continue to occur and that increases will result from certain activities, but that emissions reductions must be achieved overall. Moreover, if all economic development were to cease, the State would very likely be unable to fund the very measures that are needed to combat climate change.

Until more guidance is provided from the expert agencies, the City considers projects emitting 1,600 metric tons of CO_2e per year or less be considered to be less than significant, and no further analysis is required. It is recognized that this standard is interim and will likely change over time as further guidance is provided by the expert regulatory agencies.

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[1] California, State of, 2008. California Air Resources Board (ARB). *Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Thresholds for Greenhouse Gases Under the California Environmental Quality Act*. October 24.

For the purpose of this technical analysis, the concept of CO_2e is used to describe how much global warming a given type and amount of GHG may cause, using the functionally equivalent amount or concentration of CO_2 as the reference. Individual GHGs have varying global warming potentials and atmospheric lifetimes. The CO_2e is a consistent methodology for comparing GHG emissions since it normalizes various GHG to the same metric. The reference gas is CO_2, which has a global warming potential equal to 1.

The equation below provides the basic calculation required to determine CO_2e from the total mass of a given GHG using the global warming potentials published by the Intergovernmental Panel on Climate Change (IPCC).

Tonnes (Metric Tons) of CO_2e = Tonnes (Metric Tons) of GHG x GWP

Where: CO_2e = carbon dioxide equivalent
GHG = greenhouse gas
GWP = global warming potential

This method was used to evaluate GHG emissions during construction and operation of the proposed project. For this analysis only CO_2, CH_4, and N_2O are considered. This is due to the relatively large contribution of these gases in comparison to other GHGs expected to be produced during the project construction and operation phases.

The GHG emission estimates were calculated using CalEEMod (Version 2011.1.1). CalEEMod stands for "California Emissions Estimator Model," and is an air quality modeling program that estimates air pollution emissions in lbs/day or tons/year for various land uses, area sources, construction projects, and project operations. Mitigation measures can also be specified to analyze the effects of mitigation on project emissions. CalEEMod estimates a project's CO_2, N_2O, and CH_4 emissions from area and mobile sources, energy and water consumption, and waste generation.

An individual project cannot generate enough GHG emissions to significantly influence climate change, but individual projects can incrementally contribute toward the potential for the cumulative emissions driving GCC. This analysis analyzes whether the project's contributions combined with emissions from all other past, present, and probable future projects contribute toward the potential for GCC on a cumulative basis and whether the project's contribution to the impact is "cumulatively considerable."

Construction and operation of the proposed park project would generate GHG emissions, with the majority of energy consumption (and associated generation of GHG emissions) occurring during the project's operation (as opposed to its construction). Typically, more than 80 percent of the total energy consumption takes place during the use of buildings, and less than 20 percent is consumed during construction.[1]

Overall, the following activities associated with the proposed project could directly or indirectly contribute to the generation of GHG emissions:

[1] United Nations Environment Programme (UNEP), 2007. *Buildings and Climate Change: Status, Challenges and Opportunities*, Paris, France.

- **Removal of Vegetation:** The removal of vegetation for construction results in a loss of the carbon sequestration in plants. However, in the case of the proposed project, generally vacant parcels would be replaced with landscaping and the planting of vegetation, resulting in additional carbon sequestration that would reduce the GHG emissions of the project.
- **Construction Activities:** During project construction, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O.
- **Gas, Electricity, and Water Use:** Natural gas use results in the emissions of two GHGs: CH_4 (the major component of natural gas) and CO_2 (from the combustion of natural gas). Electricity use can result in GHG production if the electricity is generated by combusting fossil fuel. California's water conveyance system is energy-intensive. Approximately one-fifth of the electricity and one-third of the natural gas consumed in California are associated with water delivery, treatment, and use.[1]
- **Solid Waste Disposal:** Solid waste generated by the project could contribute to GHG emissions in a variety of ways. Landfilling and other methods of disposal use energy for transporting and managing the waste, and they produce additional GHGs to varying degrees. Landfilling, the most common waste management practice, results in the release of CH_4 from the anaerobic decomposition of organic materials. CH_4 is 25 times more potent a GHG than CO_2. However, landfill CH_4 can also be a source of energy. In addition, many materials in landfills do not decompose fully, and the carbon that remains is sequestered in the landfill and not released into the atmosphere.
- **Motor Vehicle Use:** Transportation associated with the proposed project would result in GHG emissions from fuel combustion in daily automobile and truck trips. CO_2 is the most significant GHG emitted by vehicles, but lesser amounts of CH_4 and N_2O are also emitted in vehicle exhaust.

Construction GHG Emissions. GHG emissions associated with the project would occur over the short term from construction activities, consisting primarily of emissions from equipment exhaust. Construction activities produce combustion emissions from various sources such as site grading, utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, asphalt paving, and motor vehicles transporting the construction crew. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change. The CalEEMod modeling performed for the construction analysis (see Appendix A) shows that emissions of CO_2e would be as high as 175 metric tons/year during project construction.

Therefore, construction emissions would be below the screening threshold of 1,600 metric tons of CO_2e/year, and project construction would be considered to have a less than significant impact related to GHG emissions and would not impede or interfere with achieving the State's emission reduction objectives in AB 32 (and EO S-03-05). No mitigation is required.

[1] California Air Resources Board (ARB), 2010. *Economic Sectors Portal*. Website: www.arb.ca.gov/cc/ghgsectors/ghgsectors.htm. Accessed January 5, 2010.

Operational GHG Emissions. Long-term operation of the proposed project would generate GHG emissions from area and mobile sources and indirect emissions from stationary sources associated with energy consumption. There would also be long-term regional emissions associated with project-related vehicular trips. The GHG emission estimates presented in Table 4.7.A show that project operations would result in annual emissions of 600 metric tons of CO_2e per year. Appendix A includes the annual CalEEMod worksheets for the GHG emissions.

Table 4.7.A: Long-Term Operational Greenhouse Gas Emissions

Category	Pollutant Emissions, MT/year					
	Bio-CO_2	**NBio-CO_2**	**Total CO_2**	**CH_4**	**N_2O**	**CO_2e**
Construction emissions amortized over 30 years	0	9.0	9.0	0.001	0	9.0
Area	0	0	0	0	0	0
Energy	0	0	0	0	0	0
Mobile	0	560	560	0.02	0	560
Waste	0.14	0	0.14	0.01	0	0.31
Water	0	30	30	0	0	31
Total Project Emissions	0.14	600	600	0.031	0	600

Source: LSA Associates, Inc., January 2013.
Note: Numbers in table may not appear to add up correctly due to rounding of all numbers to two significant digits.
Bio-CO_2 = biologically generated CO_2
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
lbs/day = pounds per day
N_2O = nitrous oxide
NBio-CO_2 = non-biologically generated CO_2

Therefore, operational emissions would be below the screening threshold of 1,600 metric tons of CO_2e per year, and project operations would be considered to have a less than significant impact related to GHG emissions and would not impede or interfere with achieving the State's emission reduction objectives in AB 32 (and EO S-03-05). No mitigation is required.

4.8 HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e) 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 result in a safety hazard for people residing or working in the project area?	☐	☐	☒	☐
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Discussion:

a) Less Than Significant Impact. Hazardous materials are defined as chemicals with the potential to cause harm during an accidental release or mishap, and are toxic, corrosive, flammable, reactive, and irritant, or a strong sensitizer. Hazardous substances include all chemicals regulated under the United States Department of Transportation "hazardous material" regulations and the EPA "hazardous waste" regulations. Under these regulations, hazardous wastes require special handling and disposal due to their potential to damage public health and the environment. The probable frequency and severity of consequences from the use, transport, and/or disposal of hazardous materials is affected by the type of substance, the quantity used or managed, and the nature of activities and operations.

A Soil Remediation Report was prepared by SCS Engineers in July 2009 (Appendix D) for the City. The Soils Remediation Report indicated that the project site has a history of hazardous materials released on the property. The site previously had 10 aboveground storage tanks (ASTs) used between 1967 and 1992; 18 to 26 additional ASTs were installed in 1980. It is also documented that various hazardous materials were released on the property from 1979 to 1991.

The Soil Remediation Report also indicated that groundwater occurs 8 to 12 ft below ground surface (bgs) on the project site. Due to saltwater intrusion, high total dissolved solids (TDS), low yield, and leakage from storm drains and sewer systems that run throughout the property, groundwater beneath the project site is not suitable for beneficial use as a municipal or domestic supply of water.

Remedial activities were conducted in 2009 in accordance with a Regional Water Quality Control Board (RWQCB) approved Remedial Action Plan (RAP). These activities included the removal of pesticides, semivolatile organic compound (VOC), metals, and VOC-impacted soils. As a result of remediation efforts, the Soil Remediation Report recommended that the RWQCB issue a "No Further

Action" letter related to the project site. On April 23, 2012, a "No Further Action Letter" was issued by the Los Angeles RWQCB, which indicated that no further action was needed to remediate soils on the project site (see Appendix D). Therefore, because the RAP was implemented and a No Further Action letter was issued, impacts associated with hazardous materials on the project site are considered to be less than significant.

Construction of the proposed project would involve the use of chemical agents, solvents, paints, and other hazardous materials that are associated with construction activities. The amount of hazardous chemicals present during construction would be limited and handled in compliance with existing government regulations. The potential for a release of hazardous chemicals during project construction is low; however, if a release did occur, it would not result in a significant hazard to the public, surrounding land uses, or environment due to the small quantities of these materials used during construction.

Long-term operation activities typical of parks and recreational uses, such as landscape maintenance, would occur on the project site. Maintenance activities would include the use of fertilizers and light equipment (e.g., lawn movers and edgers). These activities would not involve the use of a large amount of hazardous materials. Therefore, the proposed project would not create a potentially significant hazard to the public or the surrounding environment through the transport, use, or disposal of hazardous materials during construction activities or long-term operation, and no mitigation is required.

b) Less Than Significant Impact. As previously stated, development of the proposed project would involve the use of hazardous materials associated with construction activities. The amount of these chemicals present during construction is minimal and would be in compliance with existing government regulations. Therefore, the proposed project would not create a significant hazard to the public or the surrounding environment through foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment, and no mitigation is required.

c) Less Than Significant Impact. The proposed project includes the development of a striped soccer field and a greenbelt area with a pedestrian pathway. Edison Elementary School is located approximately 0.1 mi away from the project site. As previously stated, the proposed project would not produce any significant amount of hazardous materials or emissions. Therefore, although Edison Elementary School is located near the project site, because the project is a park facility, impacts related to hazardous materials, substances, or waste would be less than significant. No mitigation would be required.

d) Less Than Significant Impact. The proposed project is not listed as a hazardous materials site compiled pursuant to Government Code Section 65965.2, and as a result, the proposed project would not create a significant hazard to the public or the environment. No mitigation is required.

e) Less Than Significant Impact. The proposed project is not located within 2 mi of an airport or within an airport land use plan. The proposed project site is located approximately 3.5 mi southeast of the Long Beach Airport. Additionally, the proposed project would not result in an airport-related safety hazard for people residing or working in the project area. Therefore, no impacts are anticipated, and no mitigation is required.

f) No Impact. As previously stated, the proposed project is not located within 2 mi of an airport or private airstrip, and as a result, the proposed project would not result in a safety hazard for people residing or working in the project area. Therefore, no impacts are anticipated, and no mitigation is required.

g) No Impact. The proposed project would not interfere with an adopted emergency response plan or emergency evacuation plan. Access to and from the project site for emergency vehicles would be reviewed and approved by the Long Beach Fire Department (LBFD) as part of the project approval process to ensure the proposed project is compliant with all applicable codes and ordinances for emergency vehicle access. The proposed project would not interfere with an adopted emergency response plan or emergency evacuation plan. No impacts are anticipated as a result of project implementation, and no mitigation is required.

h) No Impact. The area surrounding the project site is urban and built out. As illustrated in Figure 2.2, the project site is located within an industrial and residential area and is bounded by the Los Angeles River to the west, Anaheim Street to the north, Drake Park facilities and residential uses to the east, and industrial and residential uses to the south. No wildlands exist in the project vicinity, and the project site is not designated as a Special Fire Protection Area or a Fire Hazard Severity Zone on the Statewide CalFire Map. Therefore, no impacts related to wildland fires are anticipated, and no mitigation is required.

4.9 HYDROLOGY AND WATER QUALITY

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
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?	☐	☒	☐	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding 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?	☐	☒	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion:

This section addresses potential impacts to hydrology and water quality resulting from implementation of the proposed project. Project impacts to hydrology and water quality were evaluated based on (1) the proposed project's adherence to local, State, and federal standards; (2) proposed land use, site design, and proposed BMPs for control of surface runoff and reduction of pollutants in runoff; and (3) the Drake Park Greenbelt Drainage Memorandum (January 2013) (Appendix E).

The project site is currently undeveloped and consists of vacant parcels with minimal landscaping. The project site's topography is relatively flat with a gentle slope to the west toward the Los Angeles River. Currently the site drainage follows the natural slope of the site, which consists entirely of pervious area, with the exception of a small portion of the site at the northern terminus, which is part of an existing parking lot. This portion of the parking lot, which is owned by the City, will be incorporated into the park design and will be landscaped for passive park uses.

a) Less Than Significant Impact with Mitigation Incorporated. Pollutants of concern during construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality. During construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. In addition, chemicals, liquid products, petroleum products (such as paints,

solvents, and fuels), and concrete-related waste may be spilled or leaked and have the potential to be transported via storm runoff into receiving waters.

During construction, the total disturbed soil area would be 8.75 ac. Because the proposed project disturbs greater than 1 ac of soil, the project is subject to the requirements of the State Water Resources Control Board's National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002, as amended by Order No. 2010-0014-DWQ) (Construction General Permit), as specified in Mitigation Measure 4.9-1.

As specified in Mitigation Measure 4.9-1, coverage under the Construction General Permit would have to be obtained for the proposed project. Under the Construction General Permit, the project would be required to prepare a SWPPP and implement construction BMPs detailed in the SWPPP during construction activities. Construction BMPs would include, but not be limited to, Erosion Control and Sediment Control BMPs designed to minimize erosion and retain sediment on site and Good Housekeeping BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters.

Pollutants of concern associated with the proposed project (soccer field, landscaped open space/passive park areas, pedestrian walking trail, restroom facilities, and parking lot) include suspended solids/sediments, nutrients, heavy metals, pathogens (bacteria/virus), pesticides, oil and grease, toxic organic compounds, and trash and debris.

The City has its own municipal NPDES Permit, *Waste Discharge Requirements for Municipal Storm Water and Urban Runoff Discharges within the City of Long Beach*, Order No. 99-060 (NPDES No. CAS004003). This permit specifies that all new development and redevelopment projects that fall under specific priority project categories must comply with the *Los Angeles County Standard Urban Storm Water Mitigation Plan* (SUSMP) (March 2000). The following projects are subject to SUSMP requirements: hillside projects; home subdivisions of 10 units or more; commercial developments of 100,000 square feet or more; and projects located adjacent to or discharging into environmentally sensitive areas. These categories of development are considered "priority" because it has been determined by the RWQCB that they have the greatest potential to degrade water quality. The proposed project is an 8.75 ac park, which includes a 0.8 ac parking lot, and is not subject to SUSMP requirements because it does not meet the above definition of a priority project.

Runoff from the existing site is currently untreated. Although the proposed project is not subject to SUSMP requirement, Treatment BMPs would be implemented to target pollutants of concern from the site. The BMPs will include a vegetated swale, vegetated strip, and bioretention areas along the northerly property line to treat runoff from the site. With incorporation of construction (Mitigation Measure 4.9-1) and postconstruction BMPs that would target pollutants of concern, the proposed project would not violate any water quality standards or waste discharge requirements. Therefore, with implementation of Mitigation Measure 4.9-1, impacts related to waste discharge requirements and water quality standards would be reduced to less than significant levels.

b) Less Than Significant Impact. The project site is not in a designated recharge area. The proposed soccer field, landscaped open space/passive park areas, pedestrian walking trail, and parking lot would all be pervious surfaces; therefore, the proposed project would not substantially increase impervious

surfaces on site. In addition, the proposed project includes a vegetated swale, vegetated strip, and bioretention areas that would infiltrate runoff to the extent the soils will allow. Because the majority of the site will consist of permeable surfaces and the BMPs will aid in infiltration, development of the site would not substantially change groundwater infiltration compared to existing conditions. In addition, operation of the proposed project would not require groundwater extraction. Groundwater is not anticipated to be encountered during construction; therefore, groundwater dewatering during construction would not be required. Therefore, site development would not substantially deplete groundwater supplies or substantially interfere with groundwater recharge, and no mitigation is required.

c) Less Than Significant Impact with Mitigation Incorporated. During construction activities, soil would be exposed and drainage patterns temporarily altered, and there would be an increased potential for soil erosion compared to existing conditions. Additionally, during a storm event, soil erosion could occur at an accelerated rate. Mitigation Measure 4.9-1 requires preparation of a SWPPP and implementation of construction BMPs during construction of the proposed project to reduce impacts to water quality during construction, including those impacts associated with soil erosion.

In the existing condition, runoff is pumped to the Los Angeles River via a pump station forebay. In the proposed condition, runoff would be pumped to the Los Angeles River. As discussed above, the proposed project would not substantially increase the volume of runoff from the site because the majority of the proposed surfaces would be pervious. In addition, the proposed BMPs would aid in infiltration. Therefore, development of the site would not substantially change the volume and velocity of runoff from the project site. In addition, the proposed project would not alter the course of a stream or river. As such, there would be no substantial change to site or area drainages that would result in erosion on or off site. No mitigation is required.

d) Less Than Significant Impact. The existing site is currently pervious, and construction activities would not substantially alter the amount of on-site pervious surfaces. Although the on-site drainage pattern would be temporarily altered during construction, construction activities would not substantially change the volume or velocity of runoff from the site. As discussed above, the proposed project would not substantially increase the volume of runoff from the site because the majority of the proposed surfaces would be pervious. In addition, the proposed BMPs would aid in infiltration. Therefore, development of the site would not substantially change the volume and velocity of runoff from the project site. Because the volume of runoff from the project site would not increase during construction or operation of the proposed project, the existing storm drain system would not be impacted; therefore, the proposed project would not result in on-site or off-site flooding. Therefore, alterations to the existing drainage patterns would not substantially change the rate or amount of surface runoff or result in flooding on or off site. No mitigation is required.

e) Less Than Significant Impact with Mitigation Incorporated. As discussed above in Responses 4.9.c and 4.9.d, the proposed project would not substantially alter the impervious surface area compared to existing conditions. In addition, the proposed BMPs would aid in infiltration. Because the proposed project would not substantially alter the volume of runoff to the downstream storm drain system, the project would not contribute runoff water that would exceed the capacity of an existing or planned storm water drainage system.

As discussed in Response 4.9.a, during operation of the proposed project, the vegetated swale, vegetated strip, and bioretention areas would treat runoff from the site. Therefore, operation of the proposed project would not result in substantial additional sources of polluted runoff. Construction of the proposed project has the potential to introduce pollutants to the storm water drainage system from erosion, siltation, and accidental spills. However, the Construction General Permit requires preparation of a SWPPP to identify construction BMPs to be implemented during project construction to reduce impacts to water quality, including those impacts associated with soil erosion, siltation, and spills. Therefore, with implementation of Mitigation Measure 4.9-1, the proposed project would not provide substantial additional sources of polluted runoff.

f) Less Than Significant Impact with Mitigation Incorporated. Refer to Response 4.9.a.

g) No Impact. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) No. 06037C1964F (September 26, 2008) and the City Federal Emergency Management Agency (FEMA) Flood Zones map, the project site is not located within a 100-year floodplain. The project site is mapped as Zone X and dotted Zone X. Zone X is defined as the area determined to be outside the 0.2 percent annual chance floodplain (500-year floodplain). Dotted Zone X is define as areas of 0.2 percent (500-year) chance flood, areas of 1 percent (100-year) chance flood with average depths of less than 1 ft or with drainage areas less than 1 square mile, and areas protected by levees from the 1 percent (100-year) annual chance flood (Map No. 06037C1964F; September 26, 2008). In addition, the project does not include construction of housing. Therefore, the proposed project would not place housing within a 100-year flood hazard area, and no impacts would occur. No mitigation is required.

h) No Impact. As discussed in Response 4.9.g, the project site is not located within a 100-year flood hazard area. Therefore, the proposed project would not place a structure within a 100-year flood hazard area, and no impacts would occur. No mitigation is required.

i) No Impact. As discussed in Response 4.9.g, the proposed project is not located within a 100-year flood hazard area. According to the Public Safety Element of the City General Plan (May 1975), the project site is not located in an area of potential flooding. In addition, the project site is not within the flood zone of a levee or dam. Therefore, the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam. No mitigation is required.

j) No Impact. Seiching is a phenomenon that occurs when seismic groundshaking induces standing waves (seiches) inside water retention facilities such as reservoirs and water tanks. Such waves can cause retention structures to fail and flood downstream properties. There are no water retention facilities located in close proximity to the project site. The risk associated with possible seiche waves is therefore not considered a potential constraint or a potentially significant impact of the proposed project, and no mitigation is necessary.

Tsunamis are generated wave trains generally caused by tectonic displacement of the sea floor associated with shallow earthquakes, sea floor landslides, rock falls, and exploding volcanic islands. The project site is located approximately 3 mi from the ocean shoreline. According to the Tsunami Inundation Map for Emergency Planning, State of California- County of Los Angeles, Long Beach Quadrangle (California Emergency Management Agency [Cal EMA], California Geological Survey

(CGS), and University of Southern California [USC], March 1, 2009), the project site is not within the tsunami inundation area. The risk associated with tsunamis is therefore not considered a potential hazard or a potentially significant impact, and no mitigation is required.

Mudslides and slumps are described as a shallower type of slope failure, usually affecting the upper soil mantle or weathered bedrock underlying natural slopes and triggered by surface or shallow subsurface saturation. The project site is located within relatively flat areas, and no existing landslides are present on the property. The risk associated with possible mudflows and mudslides is therefore not considered a potential constraint or a potentially significant impact of the proposed project, and no mitigation is necessary.

Mitigation Measure

4.9-1 Prior to issuance of a grading permit, the City of Long Beach shall obtain coverage under the State Water Resources Control Board National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ, NPDES No. CAS000002) (Construction General Permit). Construction activities shall not commence until the Waste Discharge Identification Number (WDID) is obtained from the State Water Resources Control Board. A Storm Water Pollution Prevention Plan (SWPPP) shall be prepared and implemented for the proposed project in compliance with the requirements of the Construction General Permit. The SWPPP shall identify construction Best Management Practices (BMPs) to be implemented to ensure that the potential for soil erosion and sedimentation is minimized and to control the discharge of pollutants in storm water runoff as a result of construction activities.

4.10 LAND USE/PLANNING

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion:

a) No Impact. Implementation of the proposed project will not divide an established community due to the fact that the proposed project would be constructed on vacant parcels with no existing development. The proposed project includes the development of one lighted soccer field and a greenbelt with a pedestrian pathway. All development will be contained within the currently vacant project site without dividing or altering any community boundary. Therefore, implementation of the proposed project would not result in the physical division of any established community, and no mitigation is required.

b) Less Than Significant Impact. The main documents regulating land use for the project site and immediate vicinity are the City General Plan and the City Zoning Code. The proposed project's relationship to these planning documents is described below.

General Plan. The City General Plan establishes goals, objectives, and policies intended to guide growth and development in the City. As mandated by California law, a local General Plan must contain seven elements; Land Use, Transportation, Housing, Conservation, Noise, Open Space, and Safety. In addition to these elements, the City has adopted four optional elements: Air Quality, Historic Preservation, Scenic Routes, and Seismic Safety. Each Element details the policies and programs the City has adopted related to each topic. At the heart of the General Plan is the Land Use Element (adopted in 1989 and revised in April 1997). The Land Use Element establishes land use districts and develops a long-term land use vision for the City. This Element also includes goals associated with the planning process and implements them through policies and General Plan land use designations.

The project site is a designated Mixed Use District (LUD-7) in the Land Use Element of the City's General Plan. This Mixed Use District allows for retail, office, medical facilities, high-density residential, visitor-serving facilities, personal and professional services, and recreation facilities. The proposed project is a recreational facility that includes a soccer field and passive park, which are consistent with the existing General Plan land use designations for recreational facilities on the proposed project site. Therefore, the proposed project would be consistent with the existing land use designation, and no impacts related to the designated General Plan land uses would occur.

Zoning Code. The City's Zoning Code is the primary implementation tool for the goals and policies established in the City's Land Use Element. Therefore, the Zoning Map must be consistent with the

General Plan Land Use Map. The Zoning Code, which is the text that describes and elaborates on the Zoning Map, contains more specific information related to permitted land uses, building intensities, and development standards.

The Zoning Map designation for the proposed project site is PD-10. The proposed project falls within Subarea 1 of PD-10. Subarea 1 of PD-10 allows for medium-density residential uses. The proposed project would not be consistent with the medium-density residential uses assigned to Subarea 1. However, the City proposes to process a zone change to rezone the project site to Subarea 3 as part of the proposed project. Subarea 3 specifically allows for Drake Park facilities and museum uses. Therefore, although the proposed project is not currently consistent with the City's zoning, approval of the proposed project will include a zone change from Subarea 1 to Subarea 3 and would result in the project being consistent with the City's Zoning Code. Therefore, with project approval, the project's impacts related to zoning would be less than significant.

c) No Impact. The proposed project is not located within the boundaries of any applicable HCP or NCCP. Therefore, the proposed project would not result in an impact related to any applicable HCP or NCCP, and no mitigation is required.

4.11 MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Discussion:

a) No Impact. According to the City's General Plan Conservation Element (1973), the primary mineral resources within the City have historically been oil and natural gas. However, over the last century, oil and natural gas extractions have been diminished as the resources have become increasingly depleted. Although extraction operations continue, they are on a reduced scale as compared to past levels.

The proposed project site does not contain oil extraction operations and has no other known mineral resources. Therefore, project implementation would have no impact on mineral resources, and no mitigation is required.

b) No Impact. As previously stated, the proposed project site is not located in an area known to contain locally important mineral resources. In addition, implementation of the proposed project is not anticipated to interfere with resource recovery from other sites that are identified in any general, specific, or land use plan. Therefore, the proposed project would have no impact on mineral resources, and no mitigation is required

4.12 NOISE

Would the project result in:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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?	☐	☒	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e) 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?	☐	☐	☐	☒
f) 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?	☐	☐	☐	☒

Discussion:

The following section is based on noise modeling and analysis conducted by LSA Associates (January 2013). The noise modeling worksheets are included in Appendix F.

Characteristics of Sound

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two main characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a wave, resulting in the tone's range from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment and is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

Measurement of Sound

Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level deemphasizes low and very high frequencies of sound similar to the human ear's deemphasis of these frequencies. Unlike linear units of measurement, such as inches or pounds, decibels are measured on a logarithmic scale representing points on a sharply rising curve.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. The equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and community noise equivalent level (CNEL) or the day-night average level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noise occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within 1 dBA of each other and are normally interchangeable. The City uses the CNEL noise scale for long-term noise impact assessment.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max}. L_{max} reflects peak operating conditions and identifies the annoying aspects of intermittent noise. It is often used together with another noise scale, or noise standards in terms of percentile noise levels, in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Applicable Noise Criteria

A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas or conflict with the adopted environmental plans and goals of the community in which it is located. The applicable noise standards governing the project site are the criteria in the City's Noise Element of the General Plan (1975) and the City's Noise Control Ordinance.

Noise Element of the General Plan. The Noise Element of the General Plan contains noise standards for mobile noise sources. These standards address the impacts of noise from adjacent roadways and airports. The City also specifies outdoor and indoor noise limits for residential uses, places of worship, educational facilities, hospitals, hotels/motels, and commercial and other land uses. The noise standard for exterior living areas is 65 dBA CNEL. The indoor noise standard is 45 dBA CNEL, which is consistent with the standard in the California Noise Insulation Standard.

Municipal Code. The City has adopted a quantitative Noise Control Ordinance, No. C-5371, Long Beach 1978 (Municipal Code, Chapter 8.80). The ordinance establishes maximum permissible hourly noise levels (L_{50}) for different districts throughout the City. Tables 4.12.A and 4.12.B list exterior noise and interior noise limits for various land uses. For the purposes of the proposed project, the exterior noise standard of 70 dBA L_{max} (Residential District One Land Use) has been applied to the sensitive land uses located within the vicinity of the project construction areas.

Table 4.12.A: Exterior Noise Limits, L_N (dBA)

Receiving Land Use	Time Period	L_{50}	L_{25}	L_8	L_2	L_{max}
Residential (District One)	Night: 10:00 p.m.–7:00 a.m.	45	50	55	60	65
	Day: 7:00 a.m.–10:00 p.m.	50	55	60	65	70
Commercial (District Two)	Night: 10:00 p.m.–7:00 a.m.	55	60	65	70	75
	Day: 7:00 a.m.–10:00 p.m.	60	65	70	75	80
Industrial (District Three)	Anytime[1]	65	70	75	80	85

[1] For use at boundaries rather than for noise control within industrial districts.
dBA = A-weighted decibels
L_2 = the noise level exceeded 2 percent of the time during a stated period
L_8 = the noise level exceeded 8 percent of the time during a stated period
L_{25} = the noise level exceeded 25 percent of the time during a stated period
L_{50} = the noise level representing the median noise level
L_{max} = maximum instantaneous noise level
L_N = percentile noise exceedance level

Table 4.12.B: Maximum Interior Sound Levels, L_N (dBA)

Receiving Land Use	Time Interval	L_8	L_2	L_{max}
Residential	10:00 p.m.–7:00 a.m.	35	40	45
	7:00 a.m.–10:00 p.m.	45	50	55
School	7:00 a.m.–10:00 p.m. (while school is in session)	45	50	55
Hospital and other noise-sensitive zones	Anytime	40	45	50

dBA = A-weighted decibels
L_2 = the noise level exceeded 2 percent of the time during a stated period
L_8 = the noise level exceeded 8 percent of the time during a stated period
L_{max} = maximum instantaneous noise level
L_N = percentile noise exceedance level

The City's Noise Control Ordinance also governs the time of day that construction work can be conducted. The Noise Ordinance prohibits construction, drilling, repair, alteration, or demolition work between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, between the hours of 7:00 p.m. on Friday and 9:00 a.m. on Saturday and after 6:00 p.m. on Saturday, or at any time on Sundays or federal holidays if the noise would create a disturbance across a residential or commercial property line or violate the quantitative provisions of the ordinance.

a) Less Than Significant Impact with Mitigation Incorporated.
Short-Term Construction Noise Impacts. Short-term noise impacts would be associated with excavation, grading, and the erection of buildings on site during construction of the proposed project. Construction-related short-term noise levels would be higher than existing ambient noise levels in the project area at the present time, but would no longer occur once construction of the proposed project is completed.

Two types of short-term noise impacts could occur during construction of the proposed project. First, construction crew commutes and the transport of construction equipment and materials to the site for

the proposed project would incrementally increase noise levels on access roads leading to the site. A relatively high single-event noise exposure potential will exist at a maximum level of 87 dBA L_{max} with trucks passing at 50 ft. However, the projected construction traffic will be minimal when compared to the existing traffic volumes on Anaheim Street, Loma Vista Drive, Daisy Avenue, and other affected roads, and its associated long-term noise level change will not be perceptible. Therefore, short-term construction-related worker commutes and equipment transport noise impacts would not be substantial, and no mitigation is required.

The second type of short-term noise impact is related to noise generated during site preparation, grading, and construction on the project site. Construction is performed in discrete steps, each of which has its own mix of equipment, and consequently its own noise characteristics. These various sequential phases would change the character of the noise generated on site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 4.12.C lists maximum noise levels recommended for noise impact assessments for typical construction equipment based on a distance of 50 ft between the equipment and a noise receptor. Typical maximum noise levels range up to 89 dBA at 50 ft during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels, because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1–2 minutes of full power operation followed by 3–4 minutes at lower power settings.

Table 4.12.C: Typical Maximum Construction Equipment Noise Levels (L_{max})

Type of Equipment	Range of Maximum Sound Levels Measured (dBA at 50 ft)	Suggested Maximum Sound Levels for Analysis (dBA at 50 ft)
Pile Drivers, 12,000 to 18,000 ft-lb/blow	81 to 96	93
Rock Drills	83 to 99	96
Jack hammers	75 to 85	82
Pneumatic Tools	78 to 88	85
Pumps	74 to 84	80
Dozers	77 to 90	85
Scrapers	83 to 91	87
Haul Trucks	83 to 94	88
Cranes	79 to 86	82
Portable Generators	71 to 87	80
Rollers	75 to 82	80
Tractors	77 to 82	80
Front-End Loaders	77 to 90	86
Hydraulic Backhoe	81 to 90	86
Hydraulic Excavators	81 to 90	86
Graders	79 to 89	86
Air Compressors	76 to 89	86
Trucks	81 to 87	86

Source: Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek & Newman 1987.

Construction of the proposed project is expected to require the use of earthmovers, bulldozers, water trucks, and pickup trucks. This equipment would be used on the project site. Based on Table 4.12.C, the maximum noise level generated by each scraper on the proposed project site is assumed to be 87 dBA L_{max} at 50 ft from the scraper. Each bulldozer would generate 85 dBA L_{max} at 50 ft. The maximum noise level generated by water and pickup trucks is approximately 86 dBA L_{max} at 50 ft from these vehicles. Each doubling of a sound source with equal strength increases the noise level by 3 dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, the worst-case combined noise level during this phase of construction would be 91 dBA L_{max} at a distance of 50 ft from the active construction area. The construction activities for the proposed project would be located within 25 to 50 of the existing residences along Loma Vista Drive. Maximum construction noise levels at these sensitive land uses from main construction activities would range from 91 to 97 dBA L_{max}. Construction activity noise generated between 7:00 a.m. and 7:00 p.m. Monday through Friday and between 9:00 a.m. and 6:00 p.m. on Saturday is exempt from the Noise Control Ordinance standards. Therefore, if construction is limited to the hours specified in the City's Noise Ordinance, noise generated during construction will not result in a significant impact. However, in order to further reduce construction noise impacts to adjacent land uses, Mitigation Measure 4.12-1, which requires the contractor to maintain construction equipment and stage it away from residences, is proposed. Implementation of Mitigation Measure 4.12-1 will ensure that potential construction noise remains less than significant.

Long-Term Traffic Noise Impacts.

Noise Impacts on Neighboring Sensitive Uses due to Proposed Project. The Federal Highway Administration (FHWA) highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate traffic-related noise conditions along roadway segments in the project vicinity. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry to compute typical equivalent noise levels during daytime, evening, and nighttime hours. Based on the traffic study conducted for the proposed project (contained in Appendix G), the project-related net increase in vehicular trips is anticipated to be 389 trips per day on weekdays and 1,332 trips per day on Saturdays. Traffic noise levels were weighted and summed over a 24-hour period in order to determine the CNEL values of any increase in noise.

Tables 4.12.D through 4.12.G list the traffic noise levels within the project area under the existing, existing plus project, cumulative, and cumulative plus project conditions. As described in the project traffic study, cumulative conditions were developed by applying a 2 percent growth rate to the existing traffic conditions to account for all future development in the project vicinity. Although the weekday traffic volumes in the project area are higher, the project's contribution to the local traffic is greater on Saturdays. In addition, the traffic volumes along Loma Vista Drive are highest on weekends. Therefore, the traffic noise levels listed in Tables 4.12.D through 4.12.G are based on the weekend volumes. These noise levels represent worst-case scenarios, which assume that no shielding is provided between the traffic and the location where the noise contours are drawn. The specific assumptions used in developing these noise levels and model printouts are provided in Appendix F. Traffic noise increases less than 3 dBA are considered to be less than significant. As shown in Tables 4.12.E and 4.12.G, with the proposed project the traffic noise levels along Loma Vista Drive and 11th Street would increase by more than 3 dBA. However, the 60, 65, and 70 dBA CNEL traffic noise contours would remain within the roadway right of way along these roadway segments.

Table 4.12.D: Existing Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Outermost Lane
Anaheim Street West of Oregon Avenue	19,200	56	116	248	68.6
Anaheim Street between Oregon Avenue and Daisy Avenue	18,700	55	114	243	68.5
Anaheim Street East of Daisy Street	18,100	54	112	238	68.4
11th Street (Loma Vista) West of Maine Avenue	350	< 50	< 50	< 50	49.6
11th Street between Maine Avenue and Daisy Avenue	350	< 50	< 50	< 50	49.6
11th Street East of Daisy Street	430	< 50	< 50	< 50	50.5
8th Street (Loma Vista) West of Maine Avenue	420	< 50	< 50	< 50	50.4
8th Street between Maine Avenue and Daisy Street	910	< 50	< 50	< 50	53.8
8th Street East of Daisy Street	1,400	< 50	< 50	< 50	55.7
7th Street West of Daisy Street	7,000	< 50	< 50	104	63.5
7th Street East of Daisy Street	7,100	< 50	< 50	105	63.5
6th Street West of Daisy Street	5,500	< 50	< 50	89	62.4
6th Street East of Daisy Street	5,100	< 50	< 50	85	62.1
Oregon Avenue North of Anaheim Street	1,200	< 50	< 50	< 50	55.0
Oregon Avenue South of Anaheim Street	670	< 50	< 50	< 50	52.5
Loma Vista Drive North of 11th Street	650	< 50	< 50	< 50	52.3
Maine Avenue between 11th Street and 8th Street	470	< 50	< 50	< 50	50.9
Maine Avenue South of 8th Street	370	< 50	< 50	< 50	49.9
Daisy Street North of Anaheim Street	650	< 50	< 50	< 50	53.7
Daisy Street between Anaheim Street and 11th Street	1,800	< 50	< 50	< 50	58.2
Daisy Street between 11th Street and 8th Street	970	< 50	< 50	< 50	55.5
Daisy Street between 8th Street and 7th Street	1,200	< 50	< 50	< 50	56.4
Daisy Street between 7th Street and 6th Street	1,200	< 50	< 50	< 50	56.4
Daisy Street South of 6th Street	1,200	< 50	< 50	< 50	56.4

Source: LSA Associates, Inc., January 2013.
ADT = average daily traffic
dBA = A-weighted decibel
CNEL = Community Noise Equivalent Level
ft = feet

Table 4.12.E: Existing plus Project Traffic Noise

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Outermost Lane	Increase CNEL (dBA) 50 ft from Outermost Lane
Anaheim Street West of Oregon Avenue	20,000	58	119	254	68.8	0.2
Anaheim Street between Oregon Avenue and Daisy Avenue	19,100	56	116	247	68.6	0.1
Anaheim Street East of Daisy Street	18,300	55	112	240	68.4	0.0
11th Street (Loma Vista) West of Maine Avenue	1,100	< 50	< 50	< 50	54.6	5.0
11th Street between Maine Avenue and Daisy Avenue	1,100	< 50	< 50	< 50	54.6	5.0
11th Street East of Daisy Street	490	< 50	< 50	< 50	51.1	0.6
8th Street (Loma Vista) West of Maine Avenue	860	< 50	< 50	< 50	53.5	3.1
8th Street between Maine Avenue and Daisy Street	1,400	< 50	< 50	< 50	55.7	1.9
8th Street East of Daisy Street	1,500	< 50	< 50	< 50	56.0	0.3
7th Street West of Daisy Street	7,000	< 50	< 50	104	63.5	0.0
7th Street East of Daisy Street	7,200	< 50	< 50	106	63.6	0.1
6th Street West of Daisy Street	5,500	< 50	< 50	89	62.4	0.0
6th Street East of Daisy Street	5,300	< 50	< 50	87	62.3	0.2
Oregon Avenue North of Anaheim Street	1,200	< 50	< 50	< 50	55.0	0.0
Oregon Avenue South of Anaheim Street	1,100	< 50	< 50	< 50	54.6	2.1
Loma Vista Drive North of 11th Street	650	< 50	< 50	< 50	52.3	0.0
Maine Avenue between 11th Street and 8th Street	470	< 50	< 50	< 50	50.9	0.0
Maine Avenue South of 8th Street	370	< 50	< 50	< 50	49.9	0.0
Daisy Street North of Anaheim Street	770	< 50	< 50	< 50	54.5	0.8
Daisy Street between Anaheim Street and 11th Street	2,500	< 50	< 50	53	59.6	1.4
Daisy Street between 11th Street and 8th Street	970	< 50	< 50	< 50	55.5	0.0
Daisy Street between 8th Street and 7th Street	1,500	< 50	< 50	< 50	57.4	1.0
Daisy Street between 7th Street and 6th Street	1,400	< 50	< 50	< 50	57.1	0.7
Daisy Street South of 6th Street	1,200	< 50	< 50	< 50	56.4	0.0

Source: LSA Associates, Inc., January 2013.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibel
ft = feet

Table 4.12.F: Cumulative Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Outermost Lane
Anaheim Street West of Oregon Avenue	21,200	60	124	264	69.1
Anaheim Street between Oregon Avenue and Daisy Avenue	20,600	59	122	259	68.9
Anaheim Street East of Daisy Street	19,900	57	119	254	68.8
11th Street (Loma Vista) West of Maine Avenue	380	< 50	< 50	< 50	50.0
11th Street between Maine Avenue and Daisy Avenue	390	< 50	< 50	< 50	50.1
11th Street East of Daisy Street	480	< 50	< 50	< 50	51.0
8th Street (Loma Vista) West of Maine Avenue	460	< 50	< 50	< 50	50.8
8th Street between Maine Avenue and Daisy Street	1,100	< 50	< 50	< 50	54.6
8th Street East of Daisy Street	1,600	< 50	< 50	< 50	56.2
7th Street West of Daisy Street	7,700	< 50	53	111	63.9
7th Street East of Daisy Street	7,800	< 50	53	112	64.0
6th Street West of Daisy Street	6,000	< 50	< 50	94	62.8
6th Street East of Daisy Street	5,700	< 50	< 50	91	62.6
Oregon Avenue North of Anaheim Street	1,300	< 50	< 50	< 50	55.3
Oregon Avenue South of Anaheim Street	740	< 50	< 50	< 50	52.9
Loma Vista Drive North of 11th Street	720	< 50	< 50	< 50	52.8
Maine Avenue between 11th Street and 8th Street	520	< 50	< 50	< 50	51.4
Maine Avenue South of 8th Street	410	< 50	< 50	< 50	50.3
Daisy Street North of Anaheim Street	710	< 50	< 50	< 50	54.1
Daisy Street between Anaheim Street and 11th Street	2,000	< 50	< 50	< 50	58.6
Daisy Street between 11th Street and 8th Street	1,100	< 50	< 50	< 50	56.0
Daisy Street between 8th Street and 7th Street	1,300	< 50	< 50	< 50	56.8
Daisy Street between 7th Street and 6th Street	1,300	< 50	< 50	< 50	56.8
Daisy Street South of 6th Street	1,300	< 50	< 50	< 50	56.8

Source: LSA Associates, Inc., January 2013.
ADT = average daily traffic
dBA = A-weighted decibel
CNEL = Community Noise Equivalent Level
ft = feet

Table 4.12.G: Cumulative plus Project Traffic Noise

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Outermost Lane	Increase CNEL (dBA) 50 ft from Outermost Lane
Anaheim Street West of Oregon Avenue	22,000	61	127	271	69.2	0.1
Anaheim Street between Oregon Avenue and Daisy Avenue	21,000	59	123	263	69.0	0.1
Anaheim Street East of Daisy Street	20,100	58	120	255	68.8	0.0
11th Street (Loma Vista) West of Maine Avenue	1,200	< 50	< 50	< 50	55.0	5.0
11th Street between Maine Avenue and Daisy Avenue	1,200	< 50	< 50	< 50	55.0	4.9
11th Street East of Daisy Street	540	< 50	< 50	< 50	51.5	0.5
8th Street (Loma Vista) West of Maine Avenue	900	< 50	< 50	< 50	53.7	2.9
8th Street between Maine Avenue and Daisy Street	1,500	< 50	< 50	< 50	56.0	1.4
8th Street East of Daisy Street	1,600	< 50	< 50	< 50	56.2	0.0
7th Street West of Daisy Street	7,700	< 50	53	111	63.9	0.0
7th Street East of Daisy Street	7,900	< 50	54	113	64.0	0.0
6th Street West of Daisy Street	6,000	< 50	< 50	94	62.8	0.0
6th Street East of Daisy Street	5,800	< 50	< 50	92	62.7	0.1
Oregon Avenue North of Anaheim Street	1,300	< 50	< 50	< 50	55.3	0.0
Oregon Avenue South of Anaheim Street	1,200	< 50	< 50	< 50	55.0	2.1
Loma Vista Drive North of 11th Street	720	< 50	< 50	< 50	52.8	0.0
Maine Avenue between 11th Street and 8th Street	520	< 50	< 50	< 50	51.4	0.0
Maine Avenue South of 8th Street	410	< 50	< 50	< 50	50.3	0.0
Daisy Street North of Anaheim Street	830	< 50	< 50	< 50	54.8	0.7
Daisy Street between Anaheim Street and 11th Street	2,700	< 50	< 50	55	59.9	1.3
Daisy Street between 11th Street and 8th Street	1,100	< 50	< 50	< 50	56.0	0.0
Daisy Street between 8th Street and 7th Street	1,600	< 50	< 50	< 50	57.7	0.9
Daisy Street between 7th Street and 6th Street	1,500	< 50	< 50	< 50	57.4	0.6
Daisy Street South of 6th Street	1,400	< 50	< 50	< 50	57.1	0.3

Source: LSA Associates, Inc., January 2013.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibel
ft = feet

Therefore, all of the traffic noise level increases within the project area are considered to be less than significant, and no mitigation is required.

On-Site Traffic Noise Impacts. As shown in Table 4.14.G, the proposed on-site park uses would be exposed to traffic noise levels of up to 55 dBA CNEL at a distance of 50 ft from the outermost lane of Loma Vista Drive. This noise level does not exceed the City's exterior noise standard of 65 dBA CNEL for sensitive land uses. Therefore, no on-site mitigation measures would be required.

Long-Term Stationary Noise Impacts.
Soccer Field. The primary noise-generating activity on site that would have an effect on the surrounding land uses is the proposed soccer field. Based on the average A-weighted sound level of speech for different vocal efforts under quiet conditions at a distance of 1 meter (m) (3 ft) in a free field, quoted by Harry Levitt and John C. Webster in Handbook of Acoustical Measurements and Noise Control (Third Edition, edited by Cyril M Harris, 1991), male shouting would result in 88 dBA, while female shouting is 82 dBA at a distance of 3 ft. These are all maximum sound pressure levels (L_{max}) measured at 1 m, or 3 ft, from the person. In acoustics, every doubling of an equal sound energy would result in a 3 dBA increase in combined noise level. Therefore, two males shouting at the same time (the worst-case scenario is to have them reaching the peak level at the same time) would result in 91 dBA at 1 m (3 ft), and two females shouting would result in 85 dBA at 1 m (3 ft). The distance from the proposed soccer field to the closest residence is approximately 150 ft. Assuming up to 16 men and 16 women are yelling at one time, the play field noise would be approximately 67 dBA L_{max} at 150 ft. Noise from the play field would not exceed the City's 70 dBA L_{max} daytime exterior noise limit for sensitive uses. Therefore, no mitigation measures are required.

Parking Lot Activity. Representative parking activities, such as people conversing or doors slamming, would generate approximately 60 dBA L_{max} at 50 ft. This level of noise is lower than that of soccer field activities. Noise from the parking lots would not exceed the City's 70 dBA L_{max} daytime exterior noise limit for sensitive uses. Therefore, no mitigation measures are required.

b) Less Than Significant Impact. Construction of the proposed project that involves the import of soil and site preparation for the soccer field and landscaped park areas would not result in substantial groundborne vibration or groundborne noise on properties adjacent to the project site. No pile driving or significant grading activities are proposed. Furthermore, project operation would not generate substantial groundborne noise and vibration. Therefore, groundborne noise and vibration impacts are considered less than significant, and no mitigation measures are required.

c) Less Than Significant Impact. Development of the proposed project site will result in an increase in daily traffic trips in the project vicinity over existing conditions; therefore, there will be a potential increase in traffic noise along access roads leading to the project site. However, as described in Response 4.12.a, the increase associated with ambient noise levels would be less than significant. No mitigation is required.

The proposed project includes construction of a soccer field. Although the proposed soccer field will increase noise levels on the site, the noise levels generated within the park would not exceed the City's daytime noise limits. Impacts are therefore considered less than significant, and no mitigation is required.

d) Less Than Significant With Mitigation Incorporated. Although there would at times be high intermittent construction noise in the project area during project construction, construction of the project would not significantly affect land uses adjacent to the project site. In addition, construction at the project site would comply with the hourly limits specified by the City's Ordinance and Mitigation Measure 4.12-1. Therefore, any potential impact would be mitigated to a level that is less than significant.

e) No Impact. The Long Beach Municipal Airport is located approximately 3.5 mi northeast of the project site. Based on the aircraft noise contours produced by the airports, the project site does not lie within the 60 dBA CNEL contour of the airport. Therefore, no impacts related to excessive airport noise are anticipated.

f) No Impact. The project site is not located within the vicinity of a private airstrip. Therefore, there are no impacts related to this issue.

Mitigation Measure

The following mitigation measure will reduce potential construction noise impacts on nearby sensitive receptors to a less than significant level.

4.12-1 In accordance with City of Long Beach (City) standards, construction activities shall be prohibited between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, between the hours of 7:00 p.m. on Friday and 9:00 a.m. on Saturday, and after 6:00 p.m. on Saturday, or at any time on Sundays or federal holidays. No construction activities are permitted outside of these hours, and no construction is permitted on Sundays without a special work permit. The City's Park Development Officer shall verify that the prohibited hours of construction are included on the project plans prior to issuance of any demolition or grading permits.

The following measures shall be implemented to further reduce potential construction noise impacts on nearby sensitive receptors:

1. During all site excavation and grading, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.
2. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.
3. The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

The City's Park Development Officer shall verify that the above measures are noted on the project construction plans prior to issuance of any demolition or grading permits.

4.13 POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion:

a) No Impact. The proposed project will develop a vacant site with parks and recreation uses. The proposed project does not propose the construction of any new residences or businesses and is intended to serve the existing population. Therefore, the proposed project will not impact the location, distribution, density, or growth rate of populations within the vicinity of the project site. Additionally, the proposed project would not create permanent employment opportunities that could increase the City's population. Therefore, no impacts related to population growth are anticipated, and no mitigation is required.

b) No Impact. The proposed project will develop a vacant site. There is no housing currently existing on the project site and housing displacement would not occur as a result of project implementation. Therefore, the proposed project would not result in an impact related to the displacement of housing, and no mitigation is required.

c) No Impact. The project site is currently vacant, and neither permanent nor temporary housing units are located on the site. Therefore, no people would be displaced as a result of project implementation, and no mitigation is required.

4.14 PUBLIC SERVICES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire Protection?	☐	☐	☒	☐
ii) Police Protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Discussion:

a) i) Less Than Significant Impact. The LBFD provides fire protection, emergency medical and rescue services, hazardous inspection and response, and public education activities to approximately 495,000 residents in the City. The LBFD consists of 24 stations. The closest fire station is Fire Station 3, located approximately 250 ft east of the project site, at 1222 Daisy Avenue, Long Beach.

According to the Fire Hazard Areas Map in the City's General Plan Public Safety Element (1975), the project site is located in a critical fire zone. The fire zone designations are based on the number of fire incidents and the number of nonfire incidents for the current year, as well as the age and condition of buildings. However, the project site is not designated as a Special Fire Protection Area or a Fire Hazard Severity Zone on the Statewide CalFire Map.

Emergency LBFD access would be available from Loma Vista Drive and De Forest Avenue/ Fairbanks Avenue. The proposed project would include emergency access via these public roadways as well as from the access road into the project's proposed parking lot. There is an existing fire hydrant located on Loma Vista Drive directly across the street from the project site. Compliance with requirements established in the Fire Code would ensure fire protection for people and structures, as well as the provision of emergency medical services on site.

The proposed project would comply with all Fire Department access requirements and California Fire Code requirements. The proposed project would not impair emergency response vehicles or increase response times and would not substantially increase calls for service. Therefore, with project implementation, the response profile for the project area would remain the same in terms of service delivery, staffing requirements, facilities, and equipment. The LBFD would be able to service the proposed project at the same levels provided to this area of the City before project implementation, and impacts to fire protection services are expected to be less than significant as a result of project implementation. Furthermore, the project would not require the development of new public facilities for fire protection. No mitigation is required.

ii) Less Than Significant Impact. The City of Long Beach Police Department (LBPD) is responsible for providing law enforcement protection throughout the City. According to the City's website, the LBPD currently employs approximately 985 officers. Although the East Patrol Division's substation serves as the headquarters for LBPD, the project site is within the service

area of the South Division. The South Division station is located approximately 1.5 mi away from the project site. Currently, the average response time for the South Division is 3.7 minutes.

The proposed project would result in an increase of visitors/users on site, but project impacts related to policing demand, given the size of the project and proposed uses, are anticipated to be less than significant. In addition, the project would not require the construction of new public facilities for police protection. No mitigation is required.

iii) No Impact. The City is served by the Long Beach Unified School District. As stated in Section 3.13, Population and Housing, the proposed project does not include any residential uses and would not increase population growth, generate an increased demand for school facilities, or require the construction of school facilities. Therefore, there would be no impact on school services and facilities as a result of project implementation, and no mitigation is required.

iv) No Impact. According to the City's General Plan Open Space and Recreation Element (2002), the City currently provides approximately 5.6 ac of recreational open space per 1,000 residents (2,613 ac of open space/461,522 residents). The proposed project includes the development of a greenbelt area with a lighted sports field and a pedestrian trail. The proposed project would add to and have a positive effect on the public recreation amenities available in the City. Therefore, the proposed project would not result in significant adverse impacts associated with park facilities in the City, and no mitigation is required.

v) No Impact. Because the proposed project is a park expansion project, it would not induce population growth that would generate an increased need for additional public facilities (e.g., libraries, City storage). Therefore, the proposed project would not impact other public facilities in the City, and no mitigation is required.

4.15 RECREATION

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Discussion:

a) Less Than Significant Impact. According to the City's General Plan Open Space and Recreation Element (2002), the City currently contains 92 parks totaling 1,413 ac. Loma Vista Park currently abuts the eastern border of the project site.

The 8.75 ac proposed project includes the development of a lighted soccer field and approximately 6.3 ac of passive park space. The purpose of the proposed project is to provide additional recreational opportunities to serve residents within the area. Although the removal of the existing fence separating Loma Vista Park from the project site may result in increased use of Loma Vista Park, the addition of landscaping and street improvements associated with the proposed project would improve the overall aesthetic and physical character of both the project site and Loma Vista Park. Consequently, it is not anticipated that the proposed project would increase capacity of existing neighborhood parks resulting in accelerated physical deterioration. As stated in Section 4.13, Population and Housing, the proposed project is not anticipated to increase employment, nor increase the population that would potentially utilize the existing recreational facilities within the project vicinity. Therefore, implementation of the proposed project would not result in significant impacts related to increased use and deterioration of recreational facilities, and no mitigation is required.

b) Less Than Significant Impact. As previously stated, the proposed project includes the development of a lighted sports field, passive park space, and a pedestrian trail. These recreational amenities would be available to all members of the community.

As detailed throughout this IS/MND, implementation of all design standards and mitigation measures will ensure implementation of the proposed project would not have a significant adverse impact on the environment. Therefore, recreation impacts are considered to be less than significant, and no mitigation is required.

4.16 TRANSPORTATION/TRAFFIC

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e. g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
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 supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☒	☐

Discussion:

The following section is based on a Traffic Impact Analysis conducted by LSA Associates (January 2013). The Traffic Impact Analysis is included in Appendix G.

Roadway performance is evaluated based on the performance of intersections, specifically during peak traffic periods. This methodology is utilized because traffic control at intersections interrupts traffic flow that would otherwise be impeded except for the influences of on-street parking, access to adjacent land uses, or other factors resulting in the interaction of vehicles between intersections. Therefore, traffic analyses for individual projects generally focus on peak-hour conditions for key intersections rather than roadway segments. These peak-hour operating conditions are described in terms of level of service (LOS). LOS can be defined as the measure of a roadway's operating performance and is used in determining thresholds of significance. LOS can be described on a scale from A to F, with LOS A representing free traffic flow and LOS F representing highly congested conditions.

The a.m. and p.m. peak-hour operating conditions for the key study intersections were evaluated using the Intersection Capacity Utilization (ICU) methodology for signalized intersections and the Highway Capacity Manual 2000 (HCM 2000) methodology for unsignalized intersections.

The purpose of utilizing ICU methodology is to estimate the volume-to-capacity (v/c) relationship for a signalized intersection based on the individual v/c ratios for key conflicting traffic movements. The ICU numerical value is representative of the percent signal (green) time, and thus, capacity, required by existing and future traffic. The ICU value translates to an LOS estimate, which is a measure of intersection performance. The ICU value is the sum of the critical v/c ratios at an intersection; it is not intended to be indicative of the LOS for each of the individual turning movements. The six qualitative categories of LOS for signalized intersections have been defined along with the corresponding ICU value range and are shown below in Table 4.16.A

Table 4.16.A: Level of Service Criteria for Signalized Intersections (ICU Methodology)

LOS	ICU (v/c ratio)	Level of Service	ICU (v/c ratio)
A	0.00–0.60	D	0.81–0.90
B	0.61–0.70	E	0.91–1.00
C	0.71–0.80	F	> 1.00

Source: Traffic Impact Analysis, Drake Park Soccer Field Project, LSA Associates, Inc., January 2013.
ICU = Intersection Capacity Utilization
LOS = level of service
v/c = volume-to-capacity

For unsignalized intersections, the HCM methodology estimates the average control delay for each of the subject movements and determines the LOS for each movement. The overall average control delay measured in seconds per vehicle and the LOS are then calculated for the entire intersection. The six qualitative categories of LOS for unsignalized intersections and the corresponding HCM control delay value range are shown below in Table 4.16.B.

Table 4.16.B: Level of Service Criteria for Unsignalized Intersections (HCM Methodology)

LOS	Unsignalized Intersection Delay (seconds)	LOS	Unsignalized Intersection Delay (seconds)
A	≤10.0	D	>25.0 and ≤35.0
B	>10.0 and ≤15.0	E	>35.0 and ≤50.0
C	>15.0 and ≤25.0	F	>50.0

Source: Traffic Impact Analysis, Drake Park Project, LSA Associates, Inc., January 2013.
LOS = level of service
HCM = Highway Capacity Manual

As indicated in the City's General Plan Transportation Element (1991), the City considers LOS D to be the minimum acceptable conditions that should be maintained during a.m. and p.m. peak hours for all intersections. Therefore, a project impact at a signalized intersection occurs when the LOS changes from an acceptable LOS (LOS A through D) to LOS E or F, or, if the project increases the ICU by 0.01 or more at an already unacceptable LOS. In addition, a project impact also occurs at an unsignalized intersection if the project causes the LOS to change from an acceptable LOS (LOS A through D) to LOS E or F, or if the impact of the development is greater than or equal to 10 percent of the existing delay at an already acceptable LOS and the intersection meets a signal warrant.

a) Less Than Significant Impact. An analysis of the Existing Condition, Cumulative Condition, Existing Plus Project Condition, and Cumulative Plus Project Conditions at eight intersections in the vicinity of the proposed project was conducted in an effort to determine the potential traffic impacts as a result of project implementation. The eight key study intersections are listed below.

Signalized

- Oregon Avenue/Anaheim Street
- Daisy Avenue/Anaheim Street
- Daisy Avenue/7th Street
- Daisy Avenue/6th Street

Unsignalized

- Maine Avenue/11th Street
- Maine Avenue/8th Street
- Daisy Avenue/11th Street
- Daisy Avenue/8th Street

The existing peak-hour LOS for the eight key study intersections are summarized below in Table 4.16.C. As show in Table 4.16.C, all study area intersections currently operate at satisfactory LOS.

Table 4.16.C: Existing Level of Service Summary

	Intersection	Analysis Method	Traffic Control	Baseline			
				Weekday PM Peak Hour		Saturday Peak Hour	
				V/C or Delay	LOS	V/C or Delay	LOS
1	Oregon Avenue/Anaheim Street	ICU	Signal	0.56	A	0.44	A
2	Maine Avenue/11th Street	HCM	TWSC	9.2	A	9.1	A
3	Maine Avenue/8th Street	HCM	AWSC	7.1	A	7.0	A
4	Daisy Avenue/Anaheim Street	ICU	Signal	0.71	C	0.49	A
5	Daisy Avenue/11th Street	HCM	TWSC	9.9	A	9.6	A
6	Daisy Avenue/8th Street	HCM	AWSC	7.5	A	7.3	A
7	Daisy Avenue/7th Street	ICU	Signal	0.33	A	0.30	A
8	Daisy Avenue/6th Street	ICU	Signal	0.45	A	0.25	A

Source: Traffic Impact Study, Drake Park Soccer Project, January 2013.
AWSC = All-Way Stop-Controlled
Delay is reported in seconds (for HCM).
For AWSC intersections, delay is the average control delay for the whole intersection.
For TWSC intersections, delay is the worst-case minor street approach delay.
HCM = Highway Capacity Manual
ICU = Intersection Capacity Utilization
TWSC = Two-Way Stop-Controlled
V/C = Volume-to-Capacity ratio (for ICU)

The number of potential trips generated as a result of project implementation was determined using trip generation rates from the Institute of Transportation Engineers (ITE), Trip Generation, 8th Edition. As illustrated by Table 4.16.D, the proposed project is anticipated to generate approximately 389 weekday average daily traffic (ADT), including 76 trips (38 inbound and 38 outbound) in the weekday p.m. peak hour. The project would generate approximately 1,332 weekend (Saturday) ADT, including 156 trips (78 inbound and 78 outbound) in the Saturday midday peak hour.

Table 4.16.D: Project Trip Generation

Trip Generation Rates			**Weekday PM Peak**				**Saturday Midday Peak**			
Land Use		**Units**	**ADT**	**Inbound**	**Outbound**	**Total**	**ADT**	**Inbound**	**Outbound**	**Total**
Soccer Field [1]		field	72.00	24.00	24.00	48.00	224.00	28.00	28.00	56.00
City Park [2]		TSF	1.15	0.05	0.05	0.10	4.02	0.18	0.18	0.36
Trip Generation			**Weekday PM Peak**				**Saturday Midday Peak**			
Land Use	**Size**	**Units**	**ADT**	**Inbound**	**Outbound**	**Total**	**ADT**	**Inbound**	**Outbound**	**Total**
Soccer Fields	1	field	72	24	24	48	224	28	28	56
City Park	275.513	TSF	317	14	14	28	1,108	50	50	100
Total Trip Generation			**389**	**38**	**38**	**76**	**1,332**	**78**	**78**	**156**

[1] Trip rates based on players/spectators per field and an average vehicle occupancy, as documented in the Long Beach Sports Park EIR.
[2] Weekday trip rates referenced from the SANDAG Traffic Generators (2002). Weekend rates developed based on comparison of ITE Trip Generation (2008) weekday vs. weekend rates for County Park.
ADT = Average Daily Trips
EIR = Environmental Impact Report
ITE = Institute of Traffic Engineers
SANDAG = San Diego Association of Governments
TSF = Thousand Square Feet

Existing Plus Project Condition. To determine the impact the proposed project would have on study area intersections compared to existing conditions, an existing plus project LOS analysis was prepared. The analysis assumed that the proposed project would add a total of 76 weekday p.m. peak-hour trips, and 156 midday peak-hour trips on Saturday as compared to the existing conditions. The existing plus project peak-hour LOS analysis is presented in Table 4.16.E. LOS worksheets are provided in Appendix G.

Table 4.16.E: Existing Plus Project Level of Service Summary

	Intersection	Analysis Method	Traffic Control	Baseline				Plus Project				Peak-Hour Δ in V/C or Delay	
				Weekday PM Peak Hour		Saturday Peak Hour		Weekday PM Peak Hour		Saturday Peak Hour			
				V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	Weekday PM	Saturday
1	Oregon Avenue/Anaheim Street	ICU	Signal	0.56	A	0.44	A	0.57	A	0.46	A	0.01	0.02
2	Maine Avenue/11th Street	HCM	TWSC	9.2	A	9.1	A	9.5	A	9.6	A	0.3	0.5
3	Maine Avenue/8th Street	HCM	AWSC	7.1	A	7.0	A	7.1	A	7.2	A	0.0	0.2
4	Daisy Avenue/Anaheim Street	ICU	Signal	0.71	C	0.49	A	0.73	C	0.52	A	0.02	0.03
5	Daisy Avenue/11th Street	HCM	TWSC	9.9	A	9.6	A	10.4	B	10.0	B	0.5	0.4
6	Daisy Avenue/8th Street	HCM	AWSC	7.5	A	7.3	A	7.6	A	7.4	A	0.1	0.1
7	Daisy Avenue/7th Street	ICU	Signal	0.33	A	0.30	A	0.33	A	0.31	A	0.00	0.01
8	Daisy Avenue/6th Street	ICU	Signal	0.45	A	0.25	A	0.46	A	0.26	A	0.01	0.01

Delay is reported in seconds (for HCM).
For TWSC intersections, delay is the worst-case minor street approach delay. For AWSC intersections, delay is the average control delay for the whole intersection.
AWSC = All-Way Stop-Controlled
HCM = Highway Capacity Manual
ICU = Intersection Capacity Utilization
TWSC = Two-Way Stop-Controlled
V/C = Volume-to-Capacity ratio (for ICU)

As Table 4.16.E indicates, all study area intersections are anticipated to operate at satisfactory LOS (defined as LOS D or better) with the addition of project traffic. Therefore, the proposed project would not create a significant project-related traffic impact under this scenario. The proposed project would not conflict with any plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system or congestion management program (i.e., LOS standards). No mitigation is required.

Cumulative Plus Project Condition. To determine the cumulative 2015 (project opening) plus project condition, traffic generated by the proposed project was added to the cumulative traffic volumes at each study area intersection. In order to develop an opening year (2015) condition, traffic volumes for other committed and/or approved (cumulative) developments were added to existing baseline traffic volumes. LSA obtained a list of approved/pending projects from the Long Beach Development Services Project Status Report. However, based on review, it was determined that none of the listed/approved projects would impact the proposed project because they would generate few or no trips, or they would be located too far from the project site. Instead, LSA applied a 2 percent growth rate to the existing traffic conditions to account for all future development in the project vicinity. The cumulative plus project peak-hour LOS analysis is provided in Table 4.16.F. LOS worksheets are provided in Appendix F.

As Table 4.16.F indicates, all study area intersections are forecast to operate at satisfactory LOS (defined as LOS D or better) with the addition of project traffic. Therefore, the proposed project would not create a significant project-related traffic impact under this scenario. The proposed project would not conflict with any plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, and no mitigation is required.

b) Less Than Significant. The County Metropolitan Transportation Authority adopted the Congestion Management Program (CMP) in 2010. This CMP establishes a standard of LOS E for signalized roadway intersections in the County. Because the eight key study area intersections would continue to operate at an acceptable LOS (LOS D or better) under both the Existing Plus Project Condition and the Cumulative Plus Project Condition, the proposed project would not result in an ICU greater than 0.01 at signalized intersections or add greater than 1 second of delay at an unsignalized intersections operating at LOS E or F, the proposed project would not conflict with an applicable CMP. No mitigation is required.

c) No Impact. The project site is located approximately 3.5 mi southwest of the Long Beach Airport. The proposed project does not include the development of structures that would be of sufficient height that would potentially change air traffic patterns. Therefore, the project site is not located within the immediate vicinity of airfields or airports and would not impact air traffic patterns. No mitigation is required.

d) No Impact. The proposed project does not include or involve any sharp curves, dangerous intersections, or incompatible uses. Therefore, the proposed project would not result in any potential hazards associated with a project design feature, and no mitigation is required.

Table 4.16.F: Cumulative Plus Project Level of Service Summary

	Intersection	Analysis Method	Traffic Control	Baseline				Plus Project				Peak-Hour Δ in V/C or Delay	
				Weekday PM Peak Hour		Saturday Peak Hour		Weekday PM Peak Hour		Saturday Peak Hour			
				V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	Weekday PM	Saturday
1	Oregon Avenue/Anaheim Street	ICU	Signal	0.61	B	0.48	A	0.62	B	0.50	A	0.01	0.02
2	Maine Avenue/11th Street	HCM	TWSC	9.2	A	9.2	A	9.5	A	9.6	A	0.3	0.4
3	Maine Avenue/8th Street	HCM	AWSC	7.1	A	7.1	A	7.2	A	7.2	A	0.1	0.1
4	Daisy Avenue/Anaheim Street	ICU	Signal	0.77	C	0.53	A	0.79	C	0.56	A	0.02	0.03
5	Daisy Avenue/11th Street	HCM	TWSC	10.1	B	9.7	A	10.6	B	10.1	B	0.5	0.4
6	Daisy Avenue/8th Street	HCM	AWSC	7.6	A	7.4	A	7.7	A	7.5	A	0.1	0.1
7	Daisy Avenue/7th Street	ICU	Signal	0.35	A	0.32	A	0.35	A	0.33	A	0.00	0.01
8	Daisy Avenue/6th Street	ICU	Signal	0.49	A	0.26	A	0.49	A	0.27	A	0.00	0.01

Delay is reported in seconds (for HCM).
For TWSC intersections, delay is the worst-case minor street approach delay. For AWSC intersections, delay is the average control delay for the whole intersection.
ICU = Intersection Capacity Utilization
HCM = Highway Capacity Manual
TWSC = Two-Way Stop-Controlled
AWSC = All-Way Stop-Controlled
V/C = Volume-to-Capacity ratio (for ICU)

e) Less Than Significant Impact. Access to the project site would be provided via De Forest Avenue, Loma Vista Drive, and Anaheim Street. The proposed project would not impede or prevent emergency access to the project site. As part of the proposed project's approval process, the LBFD and the LBPD would review and approve the final site plan to ensure that adequate emergency access would be provided. Therefore, impacts are considered less than significant, and no mitigation is required.

f) Less Than Significant Impact. The proposed project would not be subject to adopted policies supporting alternative transportation and would therefore not conflict with policies, plans, or programs of the City and other applicable agencies supporting alternative modes of transportation. However, the proposed project would support alternative modes of transportation by providing a pedestrian trail on the project site. Pedestrians accessing the project site would utilize this trail, as well as sidewalks and crosswalks that are part of the surrounding circulation system. Sidewalks along Loma Vista Drive, De Forest Avenue, and Anaheim Street would provide pedestrian access to the project site. The pedestrian pathway location on the project site would link pedestrian entrances from Anaheim Street to De Forest Avenue. In addition, the proposed project would support alternative modes of transportation by including bike racks throughout the project site.

The project site is supported by alternative modes of transportation. The Pacific Blue Line runs near the project site along Anaheim Street, and Bus Lines 181 and 182 run along Magnolia Avenue and Pacific Avenue, respectively. Bus service would be provided from the bus stop located one block away from the project site on Anaheim Street near Oregon Avenue. The proposed project would not remove or relocate any alternative transportation access points. Therefore, the proposed project would not conflict with any adopted policies, plans, or programs supporting the use of alternative transportation. No mitigation is required.

4.17 UTILITIES/SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment or collection facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f) Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid wastes.	☐	☐	☒	☐

Discussion:

a) Less Than Significant Impact. The Sanitation Districts of Los Angeles County (LACSD) facilities would receive wastewater generated from the proposed project.[1] LACSD facilities are required to meet all wastewater treatment requirements from the Los Angeles RWQCB. In addition, the proposed project does not include any industrial land uses that would require a special wastewater treatment. Therefore, the proposed project would have less than significant impacts on wastewater treatment requirements, and no mitigation is required.

b) Less Than Significant Impact. The City's main sources of water supply are groundwater and imported water. The City is able to meet approximately half of its water supply needs due to the fact that the City has ownership rights to groundwater wells located throughout the City. In addition, the City is able to purchase treated surface water from the Metropolitan Water District of Southern California; this water originates from the Colorado River Aqueduct and the Northern California Bay-Delta region.[2] The Long Beach Water Reclamation Plant (WRP) also reuses reclaimed water in the City for irrigation of parks, schools, golf courses, cemeteries, greenbelts, and commercial nurseries. This plant currently has a capacity of 25 million gallons per day (mgd).[3]

The proposed project includes the development of a sports field, a passive park area, and pedestrian pathways. The only structure on the project site would include the proposed restroom facilities. The project site would be covered by large grassy and landscaped areas as a result of project implementation; however, there is no existing irrigation system in place. Therefore, implementation of a new irrigation system on the project site would be required due to the addition of grassy areas and ornamental vegetation included as part of the proposed project. The proposed soccer field would be composed of natural turf, thus requiring irrigation to maintain the condition of these fields. However, the water demand as a result of project implementation is anticipated to be minimal and would be

[1] http://www.lbwater.org/sewage-treatment (accessed January 16, 2013).
[2] http://www.lbwater.org/sources-water (accessed January 16, 2013).
[3] http://www.clearwaterprogram.org/clearwater/wastewaterplants.asp#longbeach (accessed January 16, 2013).

within the Long Beach WRP's capacity to provide water to the project site. In addition, the proposed project does not include the development of any structures that would result in an increase in potable water consumption over existing conditions. Therefore, implementation of the proposed project would not require or result in the construction of new or expanded water treatment facilities, and no mitigation would be required.

Refer to Response 4.17.e for a discussion of the proposed project's impacts on wastewater.

c) Less Than Significant Impact. Development of the proposed project would include the development of an on-site parking lot consisting of permeable materials. The addition of landscaping and other pervious materials would also reduce the rate and amount of surface runoff from the project site. Due to the fact that the volume of runoff from the project site would not significantly increase as a result of project implementation, impacts to the existing storm drain are anticipated to be less than significant. Therefore, the proposed project would not cause the expansion of new storm water drainage facilities or the expansion of existing facilities, and no mitigation is required.

d) Less Than Significant Impact. As previously stated, the proposed project would result in a nominal increase in water use and wastewater generation. Therefore, the proposed project would not require new or expanded facilities, and impacts related to water supplies and wastewater generation are anticipated to be less than significant. No mitigation is required.

e) Less Than Significant Impact. The City's Water Department operates wastewater lines and delivers this wastewater to the LACSD facilities located on the northern and southern sides of the City. The majority of the City's wastewater is delivered to the Joint Water Pollution Control Plant (JWPCP), and the remaining portion is delivered to the Long Beach WRP. The JWPCP currently treats up to 350 mgd, and the Long Beach WRP treats up to 25 mgd.[1]

Wastewater at the project site would be generated by the proposed restroom facilities. However, since these facilities would not be in constant use, it is anticipated that a nominal amount of wastewater would be generated as a result of project implementation. Therefore, impacts to wastewater treatment facilities would be less than significant, and no mitigation is required.

f) Less Than Significant Impact. As discussed in Section 4.13, Population and Housing, the proposed project would not result in any increase in population or employment. Therefore, the proposed project is not anticipated to generate waste that would exceed the capacity of landfills; however, solid waste generated during construction activities and project operation would be taken to the Puente Hills Landfill in Whittier. It is anticipated that impacts related to solid waste generation as a result of project implementation would be less than significant, and no mitigation is required.

In addition, the proposed project would comply with existing and future statutes and regulations mandated by the City, State, or federal law. Because the proposed project is not anticipated to result in a significant production of solid waste that would exceed the capacity of the landfill serving the project site, the proposed project would not result in an impact related to City, State, or federal statutes and regulations related to solid wastes, and no mitigation is required.

[1] http://www.lbwater.org/sewage-treatment (accessed January 16, 2013).

g) Less Than Significant Impact. The California Integrated Waste Management Act (AB 939) changed the focus of solid waste management from landfill to diversion strategies such as resource reduction, recycling, and composting. The intent of these diversions strategies is to reduce dependence on landfills for solid waste disposal. AB 939 established mandatory diversion goals of 25 percent by 1995 and 50 percent by 2000. As of 2010, the City had accomplished a waste diversion rate of 72 percent. The City provides curbside recycling and collection of green waste for all residences within the City; both of these collection services count toward the City's diversion rate.

It is anticipated that the proposed project would comply with existing and future regulations, including waste diversion programs mandated by the City, State, or federal law. In addition, as previously stated, the proposed project would not result in an excessive production of solid waste that would exceed the capacity of the existing landfill serving the project site. Therefore, the proposed project would not result in an impact related to federal, State, and local statutes and regulations related to solid wastes, and no mitigation is required.

4.18 MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects?)	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion:

a) Less Than Significant with Mitigation Incorporated. The project site is currently vacant. The proposed project includes a soccer field, park areas with a pedestrian path, and associated parking. The site has been subject to previous grading and is entirely surrounded by urban developed areas. Based on the project description and the preceding responses, development of the proposed project does not have the potential to degrade the quality of the natural environment. There is very little existing vegetation on site. As indicated in Mitigation Measure 4.4-1, the removal of any existing trees along the eastern perimeter would be subject to a tree removal permit, as required by the City's Municipal Code. Adherence to Mitigation Measure 4.4-1 would ensure that the removal of any existing trees is less than significant, thereby reducing potential project impacts related to biological resources to a less than significant level.

As previously stated, evidence of an archaeological site was observed on the slope immediately west of Loma Vista Drive. This evidence consisted of historic building material dating to the turn of the century, including amethyst glass, miscellaneous glass, ceramic fragments, and other historic artifacts. Although the proposed project does not include excavation, it has the potential to impact unknown buried cultural or paleontological resources should any ground disturbance greater than 3 ft in depth occur. Mitigation Measure 4.5-1 requires archaeological monitoring and proper treatment of any archaeological find. In the event that cultural or paleontological resources are discovered, no further grading shall occur in the area of the find until the resource can be evaluated and appropriately recovered. Implementation of Mitigation Measure 4.5-1 would reduce any potential impacts to previously undiscovered cultural or paleontological resources to a less than significant level. Mitigation Measure 4.5-2 would also reduce any impacts to sensitive cultural resources on the project site by requiring the sensitive slope to be capped with materials so as not to disturb the existing ground surface. Similarly, Mitigation Measure 4.5-3 would reduce any potential impacts related to the discovery of unknown buried human remains on site to a less than significant level.

With implementation of Mitigation Measures 4.4-1, 4.5-1, 4.5-2, and 4.5-3, impacts to biological resources and cultural resources would be less than significant.

b) Less Than Significant with Mitigation Incorporated. The project site is currently vacant. The proposed project includes a soccer field, park areas with a pedestrian path, and associated parking. The site has been subject to previous grading and is entirely surrounded by urban developed areas. The

proposed project would consistent with the City's General Plan Land Use designation, but would require a zone change to PD-10 Subarea 3.

In addition, the proposed project is subject to regulations under the Construction General Permit due to the fact that project implementation would disturb greater than 1 ac of soil and would potentially introduce pollutants to the storm water drainage system associated with erosion, siltation, and accidental spills. Implementation of Mitigation Measure 4.9-1 would require the preparation of a SWPPP to identify BMPs to reduce potential impacts related to erosion and sedimentation and the discharge of pollutants in storm water runoff.

Impacts related to the proposed project are less than significant or could be reduced to less than significant levels with incorporation of mitigation measures. The proposed project's project contribution to any significant cumulative impacts would be less than cumulatively considerable.

c) Less Than Significant with Mitigation Incorporated. The project site is currently vacant. The proposed project includes a soccer field, park areas with a pedestrian path, and associated parking. The site has been subject to previous grading and is entirely surrounded by urban developed areas. Based on the project description and the preceding responses, development of the proposed project would not cause substantial adverse effects on human beings because all potentially significant impacts of the proposed project could be mitigated to a less than significant level.

With implementation of the required Mitigation Measures, impacts to human beings would be reduced a less than significant level.

5.0 MITIGATION MONITORING AND REPORTING PROGRAM

5.1 MITIGATION MONITORING REQUIREMENTS

PRC Section 21081.6 (enacted by the passage of AB 3180) mandates that the following requirements shall apply to all reporting or mitigation monitoring programs:

- The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes which have been required or incorporated into the project at the request of a Responsible Agency or a public agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by the Lead Agency or a Responsible Agency, prepare and submit a proposed reporting or monitoring program.
- The Lead Agency shall specify the location and custodian of the documents or other material which constitute the record of proceedings upon which its decision is based. A public agency shall provide the measures to mitigate or avoid significant effects on the environment that are fully enforceable through permit conditions, agreements, or other measures. Conditions of project approval may be set forth in referenced documents which address required mitigation measures or in the case of the adoption of a plan, policy, regulation, or other project, by incorporating the mitigation measures into the plan, policy, regulation, or project design.
- Prior to the close of the public review period for a draft Environmental Impact Report (EIR) or Mitigated Negative Declaration (MND), a Responsible Agency, or a public agency having jurisdiction over natural resources affected by the project, shall either submit to the Lead Agency complete and detailed performance objectives for mitigation measures which would address the significant effects on the environment identified by the Responsible Agency or agency having jurisdiction over natural resources affected by the project, or refer the Lead Agency to appropriate, readily available guidelines or reference documents. Any mitigation measures submitted to a Lead Agency by a Responsible Agency or an agency having jurisdiction over natural resources affected by the project shall be limited to measures which mitigate impacts to resources which are subject to the statutory authority of, and definitions applicable to, that agency. Compliance or noncompliance by a Responsible Agency or agency having jurisdiction over natural resources affected by a project with that requirement shall not limit that authority of the Responsible Agency or agency having jurisdiction over natural resources affected by a project, or the authority of the Lead Agency, to approve, condition, or deny projects as provided by this division or any other provision of law.

5.2 MTIGATION MONITORING PROCEDURES

The Mitigation Monitoring and Reporting Program (MMRP) has been prepared in compliance with PRC Section 21081.6. It describes the requirements and procedures to be followed by the City to ensure that all mitigation measures adopted as part of the proposed project will be carried out as described in this IS/MND. Table 5.A lists each of the mitigation measures specified in this IS/MND and identifies the party or parties responsible for implementation and monitoring of each measure.

Table 5.A: Mitigation Monitoring Reporting Program

Mitigation Measures		Responsible Party	Timing for PDF or Mitigation Measure
4.1 Aesthetics			
4.1-1	Prior to issuance of building permits, the City of Long Beach (City) Park Development Officer shall ensure that the final construction drawings include specifications for: (1) energy-efficient luminaries that control light energy, and (2) exterior sports field lighting that is shielded and directed downward and away from adjacent streets and adjoining land uses in a manner designed to minimize off-site spillage. On-site pathway and park lighting shall be limited to the minimum needed to comply with City security requirements.	City of Long Beach Park Development Officer	Prior to issuance of building permits
4.2 Agricultural & Forest Resources			
The proposed project would not result in significant adverse impacts related to agricultural or forest resources. No mitigation would be required.			
4.3 Air Quality			
The proposed project would not result in significant adverse impacts related to air quality. No mitigation would be required.			
4.4 Biological Resources			
4.4-1	Prior to the issuance of any grading or construction permits, the City of Long Beach (City) Park Development Officer shall ensure that a tree removal permit has been obtained in accordance with the City's Municipal Code (Title 14.28, Trees and Shrubs).	City of Long Beach Park Development Officer	Prior to the issuance of any grading or construction permits
4.5 Cultural Resources			
4.5-1	Prior to issuance of any grading or construction permits, the City of Long Beach Park Development Officer shall confirm that a qualified archaeologist and a Native American representative have been retained to provide cultural resource monitoring services at the project site. The Native American representative and the archeological monitor shall be present during all ground-disturbing activities in the bluff areas during project construction to ensure there are no impacts to cultural resources. Monitoring is not necessary in other areas of the project where the potential to encounter buried cultural material is low, or in areas where there will be fill and no ground disturbance at all. In the event that previously undocumented cultural resources are identified while monitoring during construction activities, the archaeological monitor shall have the authority to direct work away from the find until it can be assessed, and treatment per the guidelines established by the California	City of Long Beach Park Development Officer	Prior to issuance of any grading or construction permits

Mitigation Measures		Responsible Party	Timing for PDF or Mitigation Measure
	Environmental Quality Act (CEQA) can be recommended. If previously undocumented cultural resources are identified in any other area of the project site during ground-disturbing activities, a qualified archaeologist shall be contacted to assess the nature and significance of the newly discovered resources.		
4.5-2	Prior to issuance of any grading or construction permits, the City of Long Beach Park Development Officer shall confirm that project construction plans require the bluff area to be capped with materials so that no new disturbance can take place and so that the existing ground surface is not disturbed. The area to be capped shall be identified by a qualified archaeologist. The cap should be of sufficient depth so as not to disturb the existing ground surface. The criteria for the cap are as follows: that it be visually distinct from the existing native soil; that it is of known origin; and that it is culturally sterile. If existing built environment is being removed, there shall be no new disturbance below the level of the existing modern disturbance or in any intact soils.	City of Long Beach Park Development Officer	Prior to issuance of any grading or construction permits
4.5-3	In the event that that human remains are encountered during construction activities, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Los Angeles County (County) Coroner has determined the origin and disposition of the remains pursuant to State Public Resources Code Section 5097.98. The County Coroner shall be notified of the find immediately. If the human remains are determined to be of Native American descent, the County Coroner shall notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). The City of Long Beach shall give permission to the MLD to inspect the site of the discovery. The MLD shall complete the inspection of the site within 72 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of the remains and items associated with Native American burials.	Construction Contractor/City of Long Beach Parks Officer, or designee	Ongoing during construction activities

Mitigation Measures		Responsible Party	Timing for PDF or Mitigation Measure
4.6 Geology and Soils			
The proposed project would not result in significant adverse impacts related to geology or soils. No mitigation would be required.			
4.7 Greenhouse Gas Emissions			
The proposed project would not result in significant adverse impacts related to greenhouse gas emissions. No mitigation would be required.			
4.8 Hazards and Hazardous Materials			
The proposed project would not result in significant adverse impacts related to hazards or hazardous materials. No mitigation would be required.			
4.9 Hydrology and Water Quality			
4.9-1	Prior to issuance of a grading permit, the City of Long Beach shall obtain coverage under the State Water Resources Control Board National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ, NPDES No. CAS000002) (Construction General Permit). Construction activities shall not commence until the Waste Discharge Identification Number (WDID) is obtained from the State Water Resources Control Board. A Storm Water Pollution Prevention Plan (SWPPP) shall be prepared and implemented for the proposed project in compliance with the requirements of the Construction General Permit. The SWPPP shall identify construction Best Management Practices (BMPs) to be implemented to ensure that the potential for soil erosion and sedimentation is minimized and to control the discharge of pollutants in storm water runoff as a result of construction activities.	City of Long Beach Park Development Officer, or designee	Prior to issuance of a grading permit
4.10 Land Use/Planning			
The proposed project would not result in significant adverse impacts related to land use/planning. No mitigation would be required.			
4.11 Mineral Resources			
The proposed project would not result in significant adverse impacts related to mineral resources. No mitigation would be required.			

Mitigation Measures		Responsible Party	Timing for PDF or Mitigation Measure
4.12 Noise			
4.12-1	In accordance with City of Long Beach (City) standards, construction activities shall be prohibited between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, between the hours of 7:00 p.m. on Friday and 9:00 a.m. on Saturday, and after 6:00 p.m. on Saturday, or at any time on Sundays or federal holidays. No construction activities are permitted outside of these hours, and no construction is permitted on Sundays without a special work permit. The City's Park Development Officer shall verify that the prohibited hours of construction are included on the project plans prior to issuance of any demolition or grading permits. The following measures shall be implemented to further reduce potential construction noise impacts on nearby sensitive receptors: 1. During all site excavation and grading, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards. 2. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site. 3. The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction. The City's Park Development Officer shall verify that the above measures are noted on the project construction plans prior to issuance of any demolition or grading permits.	City of Long Beach Park Development Officer	Prior to issuance of any demolition or grading permits
4.13 Population and Housing			
The proposed project would not result in significant adverse impacts related to population or housing. No mitigation would be required.			

Mitigation Measures	Responsible Party	Timing for PDF or Mitigation Measure
4.14 Public Services and Utilities		
The proposed project would not result in significant adverse impacts related to public services or utilities. No mitigation would be required.		
4.15 Recreation		
The proposed project would not result in significant adverse impacts related to recreation. No mitigation would be required.		
4.16 Transportation/Traffic		
The proposed project would not result in significant adverse impacts related to transportation/traffic. No mitigation would be required.		
4.17 Utilities/Service Systems		
The proposed project would not result in significant adverse impacts related to utilities/service systems. No mitigation would be required.		

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APPENDIX A

AIR QUALITY MODELING WORKSHEETS

CalEEMod Input Parameters

Drake Park

CLB1202

Land Use Type	Land Use SubType	Land Use Unit Amount	Land Use Size Metric	Lot Acreage	Land Use Square Feet	Population
Parking	Parking Lot	94	Space	0.85	37,600	0
Recreational	City Park	7.91	Acre	7.91	0	0
				8.8	37,600	

Opening Year:	2014	
Climate Zone:	9	
Utility Company:	Southern California Edison	
CO_2 Intensity Factor	641.26	(lb/MWh)
CH_4 Intensity Factor	0.029	(lb/MWh)
N_2O Intensity Factor	0.011	(lb/MWh)
Total Population	0	

Construction

PhaseNumber	PhaseName	Phase Start Date	Phase End Date	Number of Days/Week	NumDays	NumMonths	Notes	Demolition Amount	Unit
1	Grading & Utilities	10/01/2013	11/29/2013	5	44	2.0		0	0
2	Flatwork, Amenities, and Electrical	11/30/2013	01/30/2014	5	44	2.0			
3	Irrigation	01/31/2014	03/27/2014	5	40	1.8			
4	Restroom	03/28/2014	05/28/2014	5	44	2.0			
5	Landscaping	05/29/2014	09/26/2014	5	87	4.0			

Phase Name	OffRoad Equipment Type	OffRoad Equipment Unit Amount	Usage Hours	Horse Power	Load Factor	Mitigation	Number Of Equipment Mitigated
Grading & Utilities	Excavators	1	8	157	0.57		
Grading & Utilities	Graders	1	8	162	0.61		
Grading & Utilities	Rubber Tired Dozers	1	8	358	0.59		
Grading & Utilities	Tractors/Loaders/Backhoes	3	8	75	0.55		
Flatwork, Amenities, and Ele	Other Material Handling Equipment	2	7	196	0.59		
Flatwork, Amenities, and Ele	Trenchers	2	7	69	0.75		
Irrigation	Other Material Handling Equipment	2	7	196	0.59		
Irrigation	Trenchers	2	7	69	0.75		
Restroom	Cranes	1	7	208	0.43		
Restroom	Forklifts	3	8	149	0.3		
Restroom	Generator Sets	1	8	84	0.74		
Restroom	Tractors/Loaders/Backhoes	3	7	75	0.55		
Restroom	Welders	1	8	46	0.45		
Landscaping	Pavers	2	8	89	0.62		
Landscaping	Paving Equipment	2	8	82	0.53		
Landscaping	Rollers	2	8	84	0.56		

Architectural Coating Parameters	
Residential Interior VOC (g/L)	0
Residential Interior Area (sqft)	0
Residential Exterior VOC (g/L)	0
Residential Exterior Area (sqft)	0
Non-Residential Interior VOC (g/L)	0
Non-Residential Interior Area (sqft)	0
Non-Residential Exterior VOC (g/L)	0
Non-Residential Exterior Area (sqft)	0

Phase Name	Number of Worker Trips	Number of Vendor Trips	Number of Haul Trips	Worker Trip Length	Vendor Trip Length	Hauling Trip Length
Grading & Utilities	8	15	750	12.7	7.4	20
Flatwork, Amenities, and Ele	8	3	0	12.7	7.4	20
Irrigation	4	2	0	12.7	7.4	20
Restroom	4	2	0	12.7	7.4	20

Phase	Soil Imported	Soil Exported	Units	Acres of Grading
Grading & Utilit	6,000	0	Cubic Yards	22.0
0	0	0	0	0.0

Construction Dust Mitigation

Water per Day	PM_{10} % Reduction	$PM_{2.5}$ % Reduction	Unpaved Road Vehicle Speed
3	61	61	15

Operations

Vehicle Trips

Land Use SubType	Vehicle Trips Land Use Size Metric	Trip Rate (/size/day) Weekday	Saturday	Sunday	Residential Trip Length (miles) H-W	H-S	H-O	Nonresidential Trip Len. (miles) C-C	C-W	C-NW	Primary Trip %	Divert Trip %	Pass-By %	Total Trip check
City Park	Acre	49.18	168.39	168.39	0	0	0	13.3	8.9	7.4	66	28	6	658.4
Parking Lot	Space	0	0	0	0	0	0	13.3	8.9	7.4	0	0	0	0.0

	Residential Trip Percentage			Nonresidential Trip Percentage			Energy Use (kWhr/yr) or (kBTU/yr)					Water Use (gal/yr)		Solid Waste (tons/yr)
	H-W	H-S	H-O	C-C	C-W	C-NW	Title 24 Electricity	NonTitle24 Elelctricity	Lighting Electricity	Title 24 NatGas	NonTitle24 NatGas	Indoor	Outdoor	
City Park	0	0	0	48	33	19	123,752	258,752	159,750	0	0	0	9,424,617	0.68
Parking Lot	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Fleet Mix	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH	Total
Annual	52.92%	6.86%	22.58%	9.73%	1.99%	0.60%	1.59%	2.60%	0.14%	0.22%	0.45%	0.09%	0.23%	100.00%
Summer	52.92%	6.86%	22.58%	9.73%	1.99%	0.60%	1.59%	2.60%	0.14%	0.22%	0.45%	0.09%	0.23%	100.00%
Winter	52.92%	6.86%	22.58%	9.73%	1.99%	0.60%	1.59%	2.60%	0.14%	0.22%	0.45%	0.09%	0.23%	100.00%

Drake Park

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Parking Lot	94	Space
City Park	7.91	Acre

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Southern California Edison
Climate Zone	9		2.2		
		Precipitation Freq (Days)			
			33		

1.3 User Entered Comments

Project Characteristics -

Land Use -

Construction Phase - Park construction estimated to take 12 months.

Off-road Equipment - Equipment for utility installation.

Off-road Equipment - Equipment for irrigation installation.

Off-road Equipment -

Trips and VMT - Per project plans

Grading -

Vehicle Trips - Trip rate from traffic study - total ADT = 389 weekday, 1,332 Saturday & Sunday

Energy Use - Used Arena electric usage rates of 2.75 KWhr/sf, 5.75 KWhr/sf, 3.55 KWhr/sf and assuming soccer field will be 100x50 yards.

Construction Off-road Equipment Mitigation - Standard SCAQMD Rule 403 fugitive dust control measures.

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					
2013	7.63	60.75	38.66	0.07	24.33	3.25	27.57	3.38	3.25	6.62	0.00	7,192.51	0.00	0.64	0.00	7,205.86
2014	5.30	32.44	23.68	0.04	0.15	2.75	2.86	0.01	2.75	2.75	0.00	4,146.64	0.00	0.47	0.00	4,156.59
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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					
2013	7.63	60.75	38.66	0.07	20.32	3.25	23.57	1.35	3.25	4.60	0.00	7,192.51	0.00	0.64	0.00	7,205.86
2014	5.30	32.44	23.68	0.04	0.15	2.75	2.86	0.01	2.75	2.75	0.00	4,146.64	0.00	0.47	0.00	4,156.59
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.98	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	7.16	17.28	69.99	0.12	12.58	0.77	13.35	0.43	0.77	1.21		12,100.28		0.56		12,112.11
Total	**8.14**	**17.28**	**69.99**	**0.12**	**12.58**	**0.77**	**13.35**	**0.43**	**0.77**	**1.21**		**12,100.28**		**0.56**	**0.00**	**12,112.11**

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	0.98	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00

Mobile	7.16	17.28	69.99	0.12	12.58	0.77	13.35	0.43	0.77	1.21		12,100.28		0.56		12,112.11
Total	**8.14**	**17.28**	**69.99**	**0.12**	**12.58**	**0.77**	**13.35**	**0.43**	**0.77**	**1.21**		**12,100.28**		**0.56**	**0.00**	**12,112.11**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Grading & Utilities - 2013

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					6.57	0.00	6.57	3.31	0.00	3.31						0.00
Off-Road	6.36	48.81	31.00	0.05		2.73	2.73		2.73	2.73		5,240.06		0.57		5,252.04
Total	**6.36**	**48.81**	**31.00**	**0.05**	**6.57**	**2.73**	**9.30**	**3.31**	**2.73**	**6.04**		**5,240.06**		**0.57**		**5,252.04**

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	0.98	9.35	5.39	0.01	17.50	0.42	17.92	0.05	0.42	0.47		1,434.53		0.05		1,435.52
Vendor	0.24	2.54	1.65	0.00	0.14	0.09	0.23	0.01	0.09	0.10		415.13		0.01		415.38
Worker	0.05	0.05	0.62	0.00	0.12	0.00	0.13	0.00	0.00	0.01		102.79		0.01		102.92
Total	**1.27**	**11.94**	**7.66**	**0.01**	**17.76**	**0.51**	**18.28**	**0.06**	**0.51**	**0.58**		**1,952.45**		**0.07**		**1,953.82**

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					2.56	0.00	2.56	1.29	0.00	1.29						0.00
Off-Road	6.36	48.81	31.00	0.05		2.73	2.73		2.73	2.73	0.00	5,240.06		0.57		5,252.04
Total	**6.36**	**48.81**	**31.00**	**0.05**	**2.56**	**2.73**	**5.29**	**1.29**	**2.73**	**4.02**	**0.00**	**5,240.06**		**0.57**		**5,252.04**

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	0.98	9.35	5.39	0.01	17.50	0.42	17.92	0.05	0.42	0.47		1,434.53		0.05		1,435.52
Vendor	0.24	2.54	1.65	0.00	0.14	0.09	0.23	0.01	0.09	0.10		415.13		0.01		415.38
Worker	0.05	0.05	0.62	0.00	0.12	0.00	0.13	0.00	0.00	0.01		102.79		0.01		102.92
Total	**1.27**	**11.94**	**7.66**	**0.01**	**17.76**	**0.51**	**18.28**	**0.06**	**0.51**	**0.58**		**1,952.45**		**0.07**		**1,953.82**

3.3 Flatwork, Amenities, and Electrical - 2013

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	3.50	28.66	11.24	0.03		1.49	1.49		1.49	1.49		2,933.39		0.31		2,940.00
Total	**3.50**	**28.66**	**11.24**	**0.03**		**1.49**	**1.49**		**1.49**	**1.49**		**2,933.39**		**0.31**		**2,940.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.05	0.51	0.33	0.00	0.03	0.02	0.05	0.00	0.02	0.02		83.03		0.00		83.08
Worker	0.05	0.05	0.62	0.00	0.12	0.00	0.13	0.00	0.00	0.01		102.79		0.01		102.92
Total	**0.10**	**0.56**	**0.95**	**0.00**	**0.15**	**0.02**	**0.18**	**0.00**	**0.02**	**0.03**		**185.82**		**0.01**		**186.00**

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	3.50	28.66	11.24	0.03		1.49	1.49		1.49	1.49	0.00	2,933.39		0.31		2,940.00
Total	**3.50**	**28.66**	**11.24**	**0.03**		**1.49**	**1.49**		**1.49**	**1.49**	**0.00**	**2,933.39**		**0.31**		**2,940.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.05	0.51	0.33	0.00	0.03	0.02	0.05	0.00	0.02	0.02		83.03		0.00		83.08
Worker	0.05	0.05	0.62	0.00	0.12	0.00	0.13	0.00	0.00	0.01		102.79		0.01		102.92
Total	**0.10**	**0.56**	**0.95**	**0.00**	**0.15**	**0.02**	**0.18**	**0.00**	**0.02**	**0.03**		**185.82**		**0.01**		**186.00**

3.3 Flatwork, Amenities, and Electrical - 2014

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	3.31	26.49	11.06	0.03		1.38	1.38		1.38	1.38		2,933.39		0.30		2,939.65
Total	**3.31**	**26.49**	**11.06**	**0.03**		**1.38**	**1.38**		**1.38**	**1.38**		**2,933.39**		**0.30**		**2,939.65**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.04	0.46	0.30	0.00	0.03	0.02	0.04	0.00	0.02	0.02		83.19		0.00		83.24
Worker	0.05	0.05	0.57	0.00	0.12	0.00	0.13	0.00	0.00	0.01		101.13		0.01		101.25
Total	**0.09**	**0.51**	**0.87**	**0.00**	**0.15**	**0.02**	**0.17**	**0.00**	**0.02**	**0.03**		**184.32**		**0.01**		**184.49**

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	3.31	26.49	11.06	0.03		1.38	1.38		1.38	1.38	0.00	2,933.39		0.30		2,939.65
Total	**3.31**	**26.49**	**11.06**	**0.03**		**1.38**	**1.38**		**1.38**	**1.38**	**0.00**	**2,933.39**		**0.30**		**2,939.65**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.04	0.46	0.30	0.00	0.03	0.02	0.04	0.00	0.02	0.02		83.19		0.00		83.24
Worker	0.05	0.05	0.57	0.00	0.12	0.00	0.13	0.00	0.00	0.01		101.13		0.01		101.25
Total	**0.09**	**0.51**	**0.87**	**0.00**	**0.15**	**0.02**	**0.17**	**0.00**	**0.02**	**0.03**		**184.32**		**0.01**		**184.49**

3.4 Irrigation - 2014

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	3.31	26.49	11.06	0.03		1.38	1.38		1.38	1.38		2,933.39		0.30		2,939.65
Total	**3.31**	**26.49**	**11.06**	**0.03**		**1.38**	**1.38**		**1.38**	**1.38**		**2,933.39**		**0.30**		**2,939.65**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.31	0.20	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.46		0.00		55.49
Worker	0.02	0.02	0.29	0.00	0.06	0.00	0.06	0.00	0.00	0.00		50.56		0.00		50.62
Total	**0.05**	**0.33**	**0.49**	**0.00**	**0.08**	**0.01**	**0.09**	**0.00**	**0.01**	**0.01**		**106.02**		**0.00**		**106.11**

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	3.31	26.49	11.06	0.03		1.38	1.38		1.38	1.38	0.00	2,933.39		0.30		2,939.65
Total	**3.31**	**26.49**	**11.06**	**0.03**		**1.38**	**1.38**		**1.38**	**1.38**	**0.00**	**2,933.39**		**0.30**		**2,939.65**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.31	0.20	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.46		0.00		55.49
Worker	0.02	0.02	0.29	0.00	0.06	0.00	0.06	0.00	0.00	0.00		50.56		0.00		50.62
Total	**0.05**	**0.33**	**0.49**	**0.00**	**0.08**	**0.01**	**0.09**	**0.00**	**0.01**	**0.01**		**106.02**		**0.00**		**106.11**

3.5 Restroom - 2014

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	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02		4,040.61		0.42		4,049.51
Total	**4.74**	**32.06**	**23.20**	**0.04**		**2.02**	**2.02**		**2.02**	**2.02**		**4,040.61**		**0.42**		**4,049.51**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.31	0.20	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.46		0.00		55.49
Worker	0.02	0.02	0.29	0.00	0.06	0.00	0.06	0.00	0.00	0.00		50.56		0.00		50.62
Total	**0.05**	**0.33**	**0.49**	**0.00**	**0.08**	**0.01**	**0.09**	**0.00**	**0.01**	**0.01**		**106.02**		**0.00**		**106.11**

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	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02	0.00	4,040.61		0.42		4,049.51
Total	**4.74**	**32.06**	**23.20**	**0.04**		**2.02**	**2.02**		**2.02**	**2.02**	**0.00**	**4,040.61**		**0.42**		**4,049.51**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.31	0.20	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.46		0.00		55.49
Worker	0.02	0.02	0.29	0.00	0.06	0.00	0.06	0.00	0.00	0.00		50.56		0.00		50.62
Total	**0.05**	**0.33**	**0.49**	**0.00**	**0.08**	**0.01**	**0.09**	**0.00**	**0.01**	**0.01**		**106.02**		**0.00**		**106.11**

3.6 Landscaping - 2014

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	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74		2,917.65		0.47		2,927.48
Paving	0.03					0.00	0.00		0.00	0.00						0.00
Total	**5.23**	**32.09**	**20.70**	**0.03**		**2.74**	**2.74**		**2.74**	**2.74**		**2,917.65**		**0.47**		**2,927.48**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.31	0.20	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.46		0.00		55.49
Worker	0.04	0.04	0.43	0.00	0.09	0.00	0.10	0.00	0.00	0.01		75.85		0.00		75.94
Total	**0.07**	**0.35**	**0.63**	**0.00**	**0.11**	**0.01**	**0.13**	**0.00**	**0.01**	**0.02**		**131.31**		**0.00**		**131.43**

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	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74	0.00	2,917.65		0.47		2,927.48
Paving	0.03					0.00	0.00		0.00	0.00						0.00
Total	**5.23**	**32.09**	**20.70**	**0.03**		**2.74**	**2.74**		**2.74**	**2.74**	**0.00**	**2,917.65**		**0.47**		**2,927.48**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.31	0.20	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.46		0.00		55.49
Worker	0.04	0.04	0.43	0.00	0.09	0.00	0.10	0.00	0.00	0.01		75.85		0.00		75.94
Total	**0.07**	**0.35**	**0.63**	**0.00**	**0.11**	**0.01**	**0.13**	**0.00**	**0.01**	**0.02**		**131.31**		**0.00**		**131.43**

4.0 Mobile Detail

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	7.16	17.28	69.99	0.12	12.58	0.77	13.35	0.43	0.77	1.21		12,100.28		0.56		12,112.11
Unmitigated	7.16	17.28	69.99	0.12	12.58	0.77	13.35	0.43	0.77	1.21		12,100.28		0.56		12,112.11
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	389.01	1,331.96	1331.96	1,878,208	1,878,208
Parking Lot	0.00	0.00	0.00		
Total	389.01	1,331.96	1,331.96	1,878,208	1,878,208

4.3 Trip Type Information

	Miles			Trip %		
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
City Park	8.90	13.30	7.40	33.00	48.00	19.00
Parking Lot	8.90	13.30	7.40	0.00	0.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	lb/day										lb/day					
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Parking Lot	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Parking Lot	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.98	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	0.98	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.24					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.74					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.98**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.24					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.74					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.98**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Drake Park

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Parking Lot	94	Space
City Park	7.91	Acre

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Southern California Edison
Climate Zone	9		2.2		
		Precipitation Freq (Days)			
			33		

1.3 User Entered Comments

Project Characteristics -

Land Use -

Construction Phase - Park construction estimated to take 12 months.

Off-road Equipment - Equipment for utility installation.

Off-road Equipment - Equipment for irrigation installation.

Off-road Equipment -

Trips and VMT - Per project plans

Grading -

Vehicle Trips - Trip rate from traffic study - total ADT = 389 weekday, 1,332 Saturday & Sunday

Energy Use - Used Arena electric usage rates of 2.75 KWhr/sf, 5.75 KWhr/sf, 3.55 KWhr/sf and assuming soccer field will be 100x50 yards.

Construction Off-road Equipment Mitigation - Standard SCAQMD Rule 403 fugitive dust control measures.

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					
2013	7.67	61.39	39.23	0.07	24.33	3.25	27.58	3.38	3.25	6.63	0.00	7,175.33	0.00	0.64	0.00	7,188.72
2014	5.30	32.46	23.70	0.04	0.15	2.75	2.86	0.01	2.75	2.75	0.00	4,142.52	0.00	0.47	0.00	4,152.47
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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					
2013	7.67	61.39	39.23	0.07	20.32	3.25	23.57	1.35	3.25	4.61	0.00	7,175.33	0.00	0.64	0.00	7,188.72
2014	5.30	32.46	23.70	0.04	0.15	2.75	2.86	0.01	2.75	2.75	0.00	4,142.52	0.00	0.47	0.00	4,152.47
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.98	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	7.49	18.68	69.42	0.11	12.58	0.78	13.36	0.43	0.78	1.21		11,367.99		0.46		11,377.59
Total	**8.47**	**18.68**	**69.42**	**0.11**	**12.58**	**0.78**	**13.36**	**0.43**	**0.78**	**1.21**		**11,367.99**		**0.46**	**0.00**	**11,377.59**

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	0.98	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00

Mobile	7.49	18.68	69.42	0.11	12.58	0.78	13.36	0.43	0.78	1.21		11,367.99		0.46		11,377.59
Total	**8.47**	**18.68**	**69.42**	**0.11**	**12.58**	**0.78**	**13.36**	**0.43**	**0.78**	**1.21**		**11,367.99**		**0.46**	**0.00**	**11,377.59**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Grading & Utilities - 2013

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					6.57	0.00	6.57	3.31	0.00	3.31						0.00
Off-Road	6.36	48.81	31.00	0.05		2.73	2.73		2.73	2.73		5,240.06		0.57		5,252.04
Total	**6.36**	**48.81**	**31.00**	**0.05**	**6.57**	**2.73**	**9.30**	**3.31**	**2.73**	**6.04**		**5,240.06**		**0.57**		**5,252.04**

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	1.00	9.86	5.79	0.01	17.50	0.42	17.92	0.05	0.42	0.47		1,427.85		0.05		1,428.87
Vendor	0.26	2.66	1.85	0.00	0.14	0.09	0.23	0.01	0.09	0.10		412.19		0.01		412.46
Worker	0.06	0.06	0.59	0.00	0.12	0.00	0.13	0.00	0.00	0.01		95.23		0.01		95.35
Total	**1.32**	**12.58**	**8.23**	**0.01**	**17.76**	**0.51**	**18.28**	**0.06**	**0.51**	**0.58**		**1,935.27**		**0.07**		**1,936.68**

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					2.56	0.00	2.56	1.29	0.00	1.29						0.00
Off-Road	6.36	48.81	31.00	0.05		2.73	2.73		2.73	2.73	0.00	5,240.06		0.57		5,252.04
Total	**6.36**	**48.81**	**31.00**	**0.05**	**2.56**	**2.73**	**5.29**	**1.29**	**2.73**	**4.02**	**0.00**	**5,240.06**		**0.57**		**5,252.04**

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	1.00	9.86	5.79	0.01	17.50	0.42	17.92	0.05	0.42	0.47		1,427.85		0.05		1,428.87
Vendor	0.26	2.66	1.85	0.00	0.14	0.09	0.23	0.01	0.09	0.10		412.19		0.01		412.46
Worker	0.06	0.06	0.59	0.00	0.12	0.00	0.13	0.00	0.00	0.01		95.23		0.01		95.35
Total	**1.32**	**12.58**	**8.23**	**0.01**	**17.76**	**0.51**	**18.28**	**0.06**	**0.51**	**0.58**		**1,935.27**		**0.07**		**1,936.68**

3.3 Flatwork, Amenities, and Electrical - 2013

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	3.50	28.66	11.24	0.03		1.49	1.49		1.49	1.49		2,933.39		0.31		2,940.00
Total	**3.50**	**28.66**	**11.24**	**0.03**		**1.49**	**1.49**		**1.49**	**1.49**		**2,933.39**		**0.31**		**2,940.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.05	0.53	0.37	0.00	0.03	0.02	0.05	0.00	0.02	0.02		82.44		0.00		82.49
Worker	0.06	0.06	0.59	0.00	0.12	0.00	0.13	0.00	0.00	0.01		95.23		0.01		95.35
Total	**0.11**	**0.59**	**0.96**	**0.00**	**0.15**	**0.02**	**0.18**	**0.00**	**0.02**	**0.03**		**177.67**		**0.01**		**177.84**

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	3.50	28.66	11.24	0.03		1.49	1.49		1.49	1.49	0.00	2,933.39		0.31		2,940.00
Total	**3.50**	**28.66**	**11.24**	**0.03**		**1.49**	**1.49**		**1.49**	**1.49**	**0.00**	**2,933.39**		**0.31**		**2,940.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.05	0.53	0.37	0.00	0.03	0.02	0.05	0.00	0.02	0.02		82.44		0.00		82.49
Worker	0.06	0.06	0.59	0.00	0.12	0.00	0.13	0.00	0.00	0.01		95.23		0.01		95.35
Total	**0.11**	**0.59**	**0.96**	**0.00**	**0.15**	**0.02**	**0.18**	**0.00**	**0.02**	**0.03**		**177.67**		**0.01**		**177.84**

3.3 Flatwork, Amenities, and Electrical - 2014

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	3.31	26.49	11.06	0.03		1.38	1.38		1.38	1.38		2,933.39		0.30		2,939.65
Total	**3.31**	**26.49**	**11.06**	**0.03**		**1.38**	**1.38**		**1.38**	**1.38**		**2,933.39**		**0.30**		**2,939.65**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.05	0.48	0.34	0.00	0.03	0.02	0.04	0.00	0.02	0.02		82.59		0.00		82.63
Worker	0.05	0.06	0.54	0.00	0.12	0.00	0.13	0.00	0.00	0.01		93.69		0.01		93.80
Total	**0.10**	**0.54**	**0.88**	**0.00**	**0.15**	**0.02**	**0.17**	**0.00**	**0.02**	**0.03**		**176.28**		**0.01**		**176.43**

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	3.31	26.49	11.06	0.03		1.38	1.38		1.38	1.38	0.00	2,933.39		0.30		2,939.65
Total	**3.31**	**26.49**	**11.06**	**0.03**		**1.38**	**1.38**		**1.38**	**1.38**	**0.00**	**2,933.39**		**0.30**		**2,939.65**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.05	0.48	0.34	0.00	0.03	0.02	0.04	0.00	0.02	0.02		82.59		0.00		82.63
Worker	0.05	0.06	0.54	0.00	0.12	0.00	0.13	0.00	0.00	0.01		93.69		0.01		93.80
Total	**0.10**	**0.54**	**0.88**	**0.00**	**0.15**	**0.02**	**0.17**	**0.00**	**0.02**	**0.03**		**176.28**		**0.01**		**176.43**

3.4 Irrigation - 2014

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	3.31	26.49	11.06	0.03		1.38	1.38		1.38	1.38		2,933.39		0.30		2,939.65
Total	**3.31**	**26.49**	**11.06**	**0.03**		**1.38**	**1.38**		**1.38**	**1.38**		**2,933.39**		**0.30**		**2,939.65**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.32	0.23	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.06		0.00		55.09
Worker	0.03	0.03	0.27	0.00	0.06	0.00	0.06	0.00	0.00	0.00		46.84		0.00		46.90
Total	**0.06**	**0.35**	**0.50**	**0.00**	**0.08**	**0.01**	**0.09**	**0.00**	**0.01**	**0.01**		**101.90**		**0.00**		**101.99**

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	3.31	26.49	11.06	0.03		1.38	1.38		1.38	1.38	0.00	2,933.39		0.30		2,939.65
Total	**3.31**	**26.49**	**11.06**	**0.03**		**1.38**	**1.38**		**1.38**	**1.38**	**0.00**	**2,933.39**		**0.30**		**2,939.65**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.32	0.23	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.06		0.00		55.09
Worker	0.03	0.03	0.27	0.00	0.06	0.00	0.06	0.00	0.00	0.00		46.84		0.00		46.90
Total	**0.06**	**0.35**	**0.50**	**0.00**	**0.08**	**0.01**	**0.09**	**0.00**	**0.01**	**0.01**		**101.90**		**0.00**		**101.99**

3.5 Restroom - 2014

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	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02		4,040.61		0.42		4,049.51
Total	**4.74**	**32.06**	**23.20**	**0.04**		**2.02**	**2.02**		**2.02**	**2.02**		**4,040.61**		**0.42**		**4,049.51**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.32	0.23	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.06		0.00		55.09
Worker	0.03	0.03	0.27	0.00	0.06	0.00	0.06	0.00	0.00	0.00		46.84		0.00		46.90
Total	**0.06**	**0.35**	**0.50**	**0.00**	**0.08**	**0.01**	**0.09**	**0.00**	**0.01**	**0.01**		**101.90**		**0.00**		**101.99**

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	4.74	32.06	23.20	0.04		2.02	2.02		2.02	2.02	0.00	4,040.61		0.42		4,049.51
Total	**4.74**	**32.06**	**23.20**	**0.04**		**2.02**	**2.02**		**2.02**	**2.02**	**0.00**	**4,040.61**		**0.42**		**4,049.51**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.32	0.23	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.06		0.00		55.09
Worker	0.03	0.03	0.27	0.00	0.06	0.00	0.06	0.00	0.00	0.00		46.84		0.00		46.90
Total	**0.06**	**0.35**	**0.50**	**0.00**	**0.08**	**0.01**	**0.09**	**0.00**	**0.01**	**0.01**		**101.90**		**0.00**		**101.99**

3.6 Landscaping - 2014

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	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74		2,917.65		0.47		2,927.48
Paving	0.03					0.00	0.00		0.00	0.00						0.00
Total	**5.23**	**32.09**	**20.70**	**0.03**		**2.74**	**2.74**		**2.74**	**2.74**		**2,917.65**		**0.47**		**2,927.48**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.32	0.23	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.06		0.00		55.09
Worker	0.04	0.04	0.41	0.00	0.09	0.00	0.10	0.00	0.00	0.01		70.26		0.00		70.35
Total	**0.07**	**0.36**	**0.64**	**0.00**	**0.11**	**0.01**	**0.13**	**0.00**	**0.01**	**0.02**		**125.32**		**0.00**		**125.44**

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	5.20	32.09	20.70	0.03		2.74	2.74		2.74	2.74	0.00	2,917.65		0.47		2,927.48
Paving	0.03					0.00	0.00		0.00	0.00						0.00
Total	**5.23**	**32.09**	**20.70**	**0.03**		**2.74**	**2.74**		**2.74**	**2.74**	**0.00**	**2,917.65**		**0.47**		**2,927.48**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.32	0.23	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.06		0.00		55.09
Worker	0.04	0.04	0.41	0.00	0.09	0.00	0.10	0.00	0.00	0.01		70.26		0.00		70.35
Total	**0.07**	**0.36**	**0.64**	**0.00**	**0.11**	**0.01**	**0.13**	**0.00**	**0.01**	**0.02**		**125.32**		**0.00**		**125.44**

4.0 Mobile Detail

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	7.49	18.68	69.42	0.11	12.58	0.78	13.36	0.43	0.78	1.21		11,367.99		0.46		11,377.59
Unmitigated	7.49	18.68	69.42	0.11	12.58	0.78	13.36	0.43	0.78	1.21		11,367.99		0.46		11,377.59
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	389.01	1,331.96	1331.96	1,878,208	1,878,208
Parking Lot	0.00	0.00	0.00		
Total	389.01	1,331.96	1,331.96	1,878,208	1,878,208

4.3 Trip Type Information

	Miles			Trip %		
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
City Park	8.90	13.30	7.40	33.00	48.00	19.00
Parking Lot	8.90	13.30	7.40	0.00	0.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	lb/day										lb/day					
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Parking Lot	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Parking Lot	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.98	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	0.98	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.24					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.74					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.98**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.24					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.74					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.98**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Drake Park

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Parking Lot	94	Space
City Park	7.91	Acre

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Southern California Edison
Climate Zone	9		2.2		
		Precipitation Freq (Days)			
			33		

1.3 User Entered Comments

Project Characteristics -

Land Use -

Construction Phase - Park construction estimated to take 12 months.

Off-road Equipment - Equipment for utility installation.

Off-road Equipment - Equipment for irrigation installation.

Off-road Equipment -

Trips and VMT - Per project plans

Grading -

Vehicle Trips - Trip rate from traffic study - total ADT = 389 weekday, 1,332 Saturday & Sunday

Energy Use - Used Arena electric usage rates of 2.75 KWhr/sf, 5.75 KWhr/sf, 3.55 KWhr/sf and assuming soccer field will be 100x50 yards.

Construction Off-road Equipment Mitigation - Standard SCAQMD Rule 403 fugitive dust control measures.

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					
2013	0.21	1.66	0.99	0.00	0.49	0.09	0.58	0.08	0.09	0.16	0.00	174.40	174.40	0.02	0.00	174.73
2014	0.44	2.96	1.81	0.00	0.01	0.21	0.22	0.00	0.21	0.21	0.00	288.94	288.94	0.04	0.00	289.69
Total	**0.65**	**4.62**	**2.80**	**0.00**	**0.50**	**0.30**	**0.80**	**0.08**	**0.30**	**0.37**	**0.00**	**463.34**	**463.34**	**0.06**	**0.00**	**464.42**

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					
2013	0.21	1.66	0.99	0.00	0.41	0.09	0.49	0.03	0.09	0.12	0.00	174.40	174.40	0.02	0.00	174.73
2014	0.44	2.96	1.81	0.00	0.01	0.21	0.22	0.00	0.21	0.21	0.00	288.94	288.94	0.04	0.00	289.69
Total	**0.65**	**4.62**	**2.80**	**0.00**	**0.42**	**0.30**	**0.71**	**0.03**	**0.30**	**0.33**	**0.00**	**463.34**	**463.34**	**0.06**	**0.00**	**464.42**

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	0.18	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
Energy	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
Mobile	0.63	1.57	6.30	0.01	1.01	0.07	1.08	0.04	0.07	0.11	0.00	945.68	945.68	0.04	0.00	946.46
Waste						0.00	0.00		0.00	0.00	0.14	0.00	0.14	0.01	0.00	0.31
Water						0.00	0.00		0.00	0.00	0.00	30.46	30.46	0.00	0.00	30.65
Total	**0.81**	**1.57**	**6.30**	**0.01**	**1.01**	**0.07**	**1.08**	**0.04**	**0.07**	**0.11**	**0.14**	**976.14**	**976.28**	**0.05**	**0.00**	**977.42**

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	0.18	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
Energy	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
Mobile	0.63	1.57	6.30	0.01	1.01	0.07	1.08	0.04	0.07	0.11	0.00	945.68	945.68	0.04	0.00	946.46
Waste						0.00	0.00		0.00	0.00	0.14	0.00	0.14	0.01	0.00	0.31
Water						0.00	0.00		0.00	0.00	0.00	30.46	30.46	0.00	0.00	30.65
Total	**0.81**	**1.57**	**6.30**	**0.01**	**1.01**	**0.07**	**1.08**	**0.04**	**0.07**	**0.11**	**0.14**	**976.14**	**976.28**	**0.05**	**0.00**	**977.42**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Grading & Utilities - 2013

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					0.14	0.00	0.14	0.07	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.14	1.07	0.68	0.00		0.06	0.06		0.06	0.06	0.00	104.55	104.55	0.01	0.00	104.79
Total	**0.14**	**1.07**	**0.68**	**0.00**	**0.14**	**0.06**	**0.20**	**0.07**	**0.06**	**0.13**	**0.00**	**104.55**	**104.55**	**0.01**	**0.00**	**104.79**

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	0.02	0.21	0.12	0.00	0.34	0.01	0.35	0.00	0.01	0.01	0.00	28.57	28.57	0.00	0.00	28.60
Vendor	0.01	0.06	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.26	8.26	0.00	0.00	8.27
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.95	1.95	0.00	0.00	1.95
Total	**0.03**	**0.27**	**0.17**	**0.00**	**0.34**	**0.01**	**0.35**	**0.00**	**0.01**	**0.01**	**0.00**	**38.78**	**38.78**	**0.00**	**0.00**	**38.82**

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					0.06	0.00	0.06	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.14	1.07	0.68	0.00		0.06	0.06		0.06	0.06	0.00	104.55	104.55	0.01	0.00	104.79
Total	**0.14**	**1.07**	**0.68**	**0.00**	**0.06**	**0.06**	**0.12**	**0.03**	**0.06**	**0.09**	**0.00**	**104.55**	**104.55**	**0.01**	**0.00**	**104.79**

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	0.02	0.21	0.12	0.00	0.34	0.01	0.35	0.00	0.01	0.01	0.00	28.57	28.57	0.00	0.00	28.60
Vendor	0.01	0.06	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.26	8.26	0.00	0.00	8.27
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.95	1.95	0.00	0.00	1.95
Total	**0.03**	**0.27**	**0.17**	**0.00**	**0.34**	**0.01**	**0.35**	**0.00**	**0.01**	**0.01**	**0.00**	**38.78**	**38.78**	**0.00**	**0.00**	**38.82**

3.3 Flatwork, Amenities, and Electrical - 2013

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	0.04	0.32	0.12	0.00		0.02	0.02		0.02	0.02	0.00	29.26	29.26	0.00	0.00	29.33

Total	**0.04**	**0.32**	**0.12**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**29.26**	**29.26**	**0.00**	**0.00**	**29.33**

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	0.00	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
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.83	0.00	0.00	0.83
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97	0.97	0.00	0.00	0.97
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.80**	**1.80**	**0.00**	**0.00**	**1.80**

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	0.04	0.32	0.12	0.00		0.02	0.02		0.02	0.02	0.00	29.26	29.26	0.00	0.00	29.33
Total	**0.04**	**0.32**	**0.12**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**29.26**	**29.26**	**0.00**	**0.00**	**29.33**

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	0.00	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
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.83	0.00	0.00	0.83
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97	0.97	0.00	0.00	0.97
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.80**	**1.80**	**0.00**	**0.00**	**1.80**

3.3 Flatwork, Amenities, and Electrical - 2014

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	0.04	0.29	0.12	0.00		0.02	0.02		0.02	0.02	0.00	29.26	29.26	0.00	0.00	29.33
Total	**0.04**	**0.29**	**0.12**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**29.26**	**29.26**	**0.00**	**0.00**	**29.33**

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	0.00	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
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.83	0.00	0.00	0.83
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.96	0.96	0.00	0.00	0.96
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.79**	**1.79**	**0.00**	**0.00**	**1.79**

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	0.04	0.29	0.12	0.00		0.02	0.02		0.02	0.02	0.00	29.26	29.26	0.00	0.00	29.33
Total	**0.04**	**0.29**	**0.12**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**29.26**	**29.26**	**0.00**	**0.00**	**29.33**

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	0.00	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
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.83	0.00	0.00	0.83
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.96	0.96	0.00	0.00	0.96
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.79**	**1.79**	**0.00**	**0.00**	**1.79**

3.4 Irrigation - 2014

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	0.07	0.53	0.22	0.00		0.03	0.03		0.03	0.03	0.00	53.21	53.21	0.01	0.00	53.32
Total	**0.07**	**0.53**	**0.22**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**53.21**	**53.21**	**0.01**	**0.00**	**53.32**

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	0.00	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
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.87	0.00	0.00	0.87
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.87**	**1.87**	**0.00**	**0.00**	**1.87**

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	0.07	0.53	0.22	0.00		0.03	0.03		0.03	0.03	0.00	53.21	53.21	0.01	0.00	53.32
Total	**0.07**	**0.53**	**0.22**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**53.21**	**53.21**	**0.01**	**0.00**	**53.32**

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	0.00	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

Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.87	0.00	0.00	0.87
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.87**	**1.87**	**0.00**	**0.00**	**1.87**

3.5 Restroom - 2014

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	0.10	0.71	0.51	0.00		0.04	0.04		0.04	0.04	0.00	80.62	80.62	0.01	0.00	80.80
Total	**0.10**	**0.71**	**0.51**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**80.62**	**80.62**	**0.01**	**0.00**	**80.80**

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	0.00	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
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10	1.10	0.00	0.00	1.10
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.96	0.96	0.00	0.00	0.96
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.06**	**2.06**	**0.00**	**0.00**	**2.06**

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	0.10	0.71	0.51	0.00		0.04	0.04		0.04	0.04	0.00	80.62	80.62	0.01	0.00	80.80
Total	**0.10**	**0.71**	**0.51**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**80.62**	**80.62**	**0.01**	**0.00**	**80.80**

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	0.00	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
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10	1.10	0.00	0.00	1.10
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.96	0.96	0.00	0.00	0.96
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.06**	**2.06**	**0.00**	**0.00**	**2.06**

3.6 Landscaping - 2014

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	0.23	1.40	0.90	0.00		0.12	0.12		0.12	0.12	0.00	115.11	115.11	0.02	0.00	115.49
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.23**	**1.40**	**0.90**	**0.00**		**0.12**	**0.12**		**0.12**	**0.12**	**0.00**	**115.11**	**115.11**	**0.02**	**0.00**	**115.49**

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	0.00	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
Vendor	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.18	2.18	0.00	0.00	2.18
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.84	2.84	0.00	0.00	2.84
Total	**0.00**	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.02**	**5.02**	**0.00**	**0.00**	**5.02**

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	0.23	1.40	0.90	0.00		0.12	0.12		0.12	0.12	0.00	115.11	115.11	0.02	0.00	115.49
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Total	**0.23**	**1.40**	**0.90**	**0.00**		**0.12**	**0.12**		**0.12**	**0.12**	**0.00**	**115.11**	**115.11**	**0.02**	**0.00**	**115.49**

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	0.00	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
Vendor	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.18	2.18	0.00	0.00	2.18
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.84	2.84	0.00	0.00	2.84
Total	**0.00**	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.02**	**5.02**	**0.00**	**0.00**	**5.02**

4.0 Mobile Detail

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	0.63	1.57	6.30	0.01	1.01	0.07	1.08	0.04	0.07	0.11	0.00	945.68	945.68	0.04	0.00	946.46
Unmitigated	0.63	1.57	6.30	0.01	1.01	0.07	1.08	0.04	0.07	0.11	0.00	945.68	945.68	0.04	0.00	946.46
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	389.01	1,331.96	1331.96	1,878,208	1,878,208
Parking Lot	0.00	0.00	0.00		
Total	389.01	1,331.96	1,331.96	1,878,208	1,878,208

4.3 Trip Type Information

	Miles			Trip %		
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
City Park	8.90	13.30	7.40	33.00	48.00	19.00
Parking Lot	8.90	13.30	7.40	0.00	0.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	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						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Mitigated	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
NaturalGas Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	tons/yr										MT/yr					
City Park	0	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
Parking Lot	0	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
Total		**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**

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	tons/yr										MT/yr					
City Park	0	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
Parking Lot	0	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
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
City Park	0					0.00	0.00	0.00	0.00
Parking Lot	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
City Park	0					0.00	0.00	0.00	0.00
Parking Lot	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.18	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
Unmitigated	0.18	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.04					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.14					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**0.18**	**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**

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	0.04					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.14					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**0.18**	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					30.46	0.00	0.00	30.65
Unmitigated					30.46	0.00	0.00	30.65
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
City Park	0 / 9.42462					30.46	0.00	0.00	30.65
Parking Lot	0 / 0					0.00	0.00	0.00	0.00
Total						**30.46**	**0.00**	**0.00**	**30.65**

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
City Park	0 / 9.42462					30.46	0.00	0.00	30.65
Parking Lot	0 / 0					0.00	0.00	0.00	0.00
Total						**30.46**	**0.00**	**0.00**	**30.65**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					0.14	0.01	0.00	0.31
Unmitigated					0.14	0.01	0.00	0.31
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
City Park	0.68					0.14	0.01	0.00	0.31
Parking Lot	0					0.00	0.00	0.00	0.00
Total						**0.14**	**0.01**	**0.00**	**0.31**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
City Park	0.68					0.14	0.01	0.00	0.31
Parking Lot	0					0.00	0.00	0.00	0.00
Total						**0.14**	**0.01**	**0.00**	**0.31**

9.0 Vegetation

APPENDIX B

BIOLOGICAL RESOURCES ASSESSMENT AND WETLAND DELINEATION MEMORANDUM

BIOLOGICAL ASSESSMENT

DRAKE PARK SOCCER FIELD PROJECT

LONG BEACH, LOS ANGELES COUNTY, CALIFORNIA

LSA

January 2013

BIOLOGICAL ASSESSMENT

DRAKE PARK SOCCER FIELD PROJECT

LONG BEACH, LOS ANGELES COUNTY, CALIFORNIA

Submitted to:

City of Long Beach
Department of Parks, Recreation and Marine
2760 Studebaker Road
Long Beach, California 90815

Prepared by:

LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, California 92614
949.553.0666

Project No. CLB1202

LSA

January 2013

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INTRODUCTION

The City of Long Beach (City) proposes to develop an 8.75-acre (ac) new park facility on existing vacant parcels (Figures 1 and 2). This report describes the biological setting for the project and analyzes the biological consequences of implementing the project.

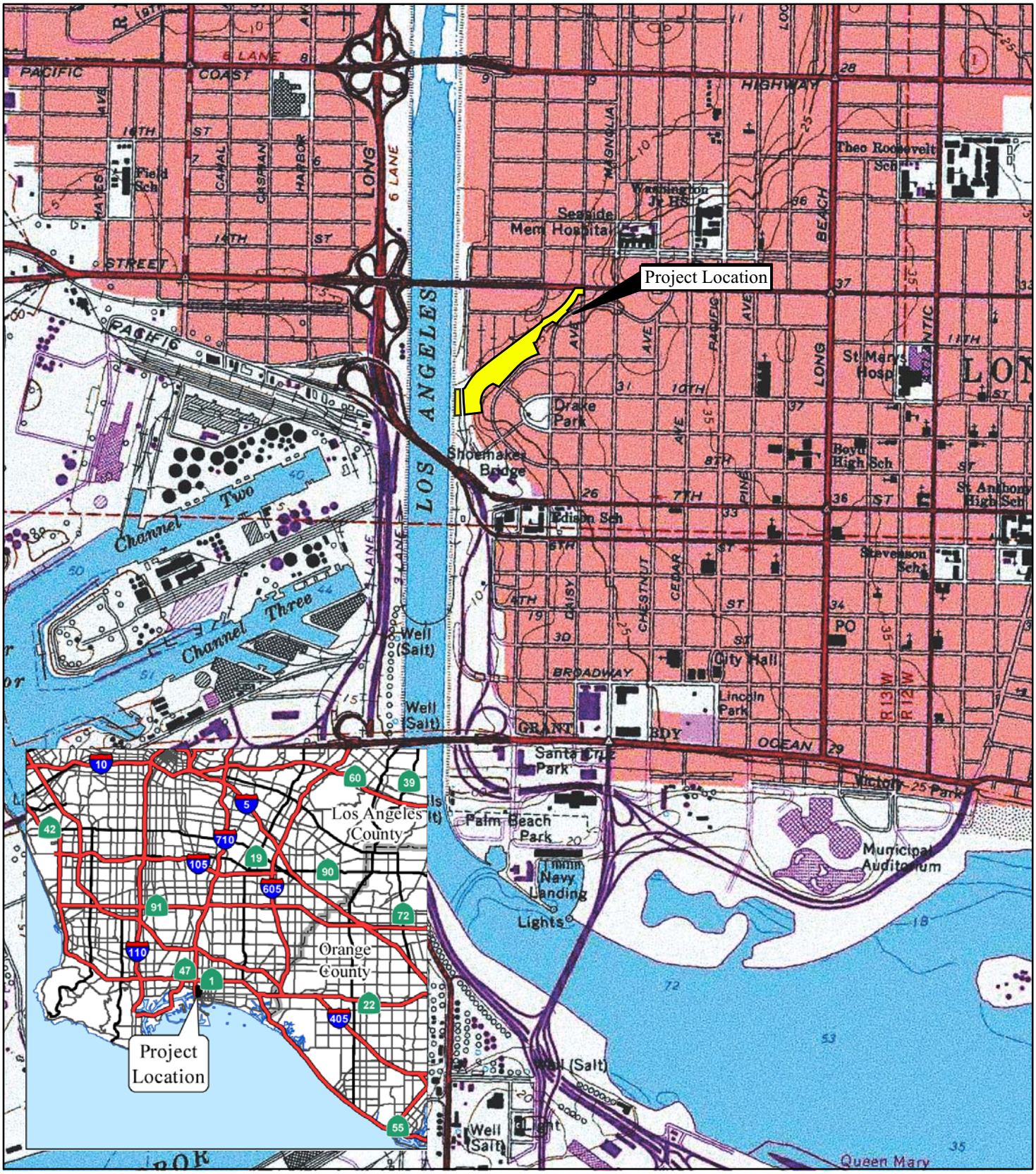
PROJECT DESCRIPTION

The proposed Drake Park Soccer Field project site is located in the Downtown area of the City in Los Angeles County, California. The currently vacant project site is located to the east of the Los Angeles River and Interstate 710 (I-710). The project site is bound by Loma Vista Drive and single-family residential uses to the southeast and east, a ceramic factory and industrial uses to the south, De Forest Avenue to the west, and existing industrial and commercial uses to the north. Existing Drake Park facilities are located to the southeast across Loma Vista Drive. In addition, Loma Vista Park currently abuts a portion of the northeastern boundary of the project site. Currently, Loma Vista Park provides a grassy park area and park bench.

The proposed project includes the development of an 8.75 ac new park facility on existing vacant parcels. The proposed project would consist of one striped soccer field, large landscaped open space/ passive park areas, a pedestrian walking trail, restroom facilities, and parking. The proposed park would incorporate the existing Loma Vista Park into the new park layout by removing the existing chain-link fencing along the northwestern portions of Loma Vista Park. The proposed Drake Park Soccer Field Project would be linear in form and would be characterized by an 8-foot (ft) wide pedestrian trail traversing the park from the northeast to southwest. The northeast entrance at Anaheim Street and N. Daisy Avenue is envisioned to be a gateway entrance to the proposed park.

Lighting would be provided to the soccer field from six standard field light poles, and low-level security lighting would be provided along the pedestrian path at 50 ft intervals. Lighting would be directed downward and shielded so that it is contained within the site boundaries.

The proposed project will provide a total of 66 parking spaces in a parking lot on the southwest end of the site and 28 parking spaces along De Forest Avenue to satisfy the City's parking requirements.



LSA

FIGURE 1

0 1000 2000
FEET

SOURCE: USGS 7.5' QUAD - Long Beach ('81)

I:\CLB1202\G\ProjLoc.cdr (1/14/13)

Drake Park Soccer Field Project

Project Location

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FIGURE 2

Proposed Site Boundary

N

0 200 400
FEET

SOURCE:Google Earth, 2013

I:\CLB1202\G\Site Plan.cdr (1/25/13)

Drake Park Soccer Field Project

Proposed Site Plan

REGULATORY BACKGROUND

California Environmental Quality Act

The California Environmental Quality Act (CEQA) was enacted in the early 1970s and was applied to private as well as public projects to ensure that projects proposed for implementation receive an evaluation of the environmental implications prior to project approval and that the public and decision makers be informed of potential project impacts. Through subsequent legislation, court interpretation, and publication of Guidelines by the State of California, environmental evaluations have become somewhat standardized throughout the State. Public and agency review of projects and their environmental evaluations is required of all discretionary projects through established procedures and methods. The public agency that takes the lead on a project (having review and approval authority over the project) is known as the Lead Agency. Other agencies involved in subsequent approvals or responsible for implementing mitigation identified in the environmental documentation are called Responsible Agencies.

Should a project be determined by the Lead Agency to have the potential to create one or more significant impacts, the Lead Agency shall require mitigation of the impact to lessen or avoid the identified impacts. If mitigation is determined to be feasible and is judged to offset the impacts, a Negative Declaration may be adopted by the Lead Agency after a mandatory public review period. Should the Lead Agency determine that an impact or several impacts are significant and that mitigation may not fully mitigate these project effects to below a level of significance, an EIR shall be prepared by the Lead Agency and submitted to the public and interested agencies for a minimum 45-day review period prior to consideration of the project.

Significance Criteria. Section 15382 of the CEQA Guidelines provides the following definition:

> "Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.

Section 15380 of the CEQA Guidelines provides a definition of rare or endangered species that is summarized as follows:

> "Species" as used in this subsection means a species or subspecies of animal or plant or a variety of plant.
>
> Plants or animals already listed by a government agency (California Department of Fish and Game and/or the United States Fish and Wildlife Service) as being rare, threatened, or endangered shall be presumed rare or endangered for purposes of CEQA. The section also provides that a plant or animal may be treated as rare or endangered even if it has not been listed by a government agency if it can be shown that the species meets the criteria for such listing.

As indicated in the Environmental Checklist Form, Appendix G of the CEQA Guidelines, impacts to biological resources may be considered significant if a project results in any of the following:

- Substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service
- Substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service
- Substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
- Substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan

California Department of Fish and Wildlife

California Endangered Species Act. The California Department of Fish and Wildlife (CDFW), via policies formulated by the California Fish and Game Commission (Commission), regulates species of plants and animals that are in danger of or threatened with extinction. The Commission has established a list of endangered, threatened, and candidate species that are regulated by the CDFW. Endangered species are native species or subspecies of plants and animals that are in serious danger of becoming extinct throughout all or a significant portion of their range. Threatened species are those species that, although not presently threatened with extinction, are likely to become endangered species in the foreseeable future in the absence of special protection and management efforts. Candidate species are those species the Commission has formally noticed as being under review for addition to either the list of endangered or threatened species or a species proposed for listing.

Streambed Alteration Regulations (SB 418). The CDFW, through provisions of the State of California Administrative Code, is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected. Streams (and rivers) are defined by the presence of a channel bed and banks and at least a periodic flow of water. The CDFW regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by the CDFW. The CDFW also includes nonwetland riparian communities that are associated with rivers and streams as part of jurisdictional waters of the State. These areas may extend beyond jurisdictional waters of the United States (U.S.).

California Natural Diversity Data Base. The CDFW administers the California Natural Diversity Data Base **(**CNDDB), which maintains lists of special-status plants, animals, and natural communities

that occur within California. These include species listed under the State and federal endangered species acts, California Species of Special Concern, and United States Fish and Wildlife Service (USFWS) Birds of Conservation Concern. Additional species and natural communities, or habitat types, are designated as being of special interest because of their rarity (e.g., very localized distribution, few scattered occurrences) and/or because of threats to their existence. The purpose of these additional listings is solely informational; there is no specific regulatory protection afforded by these CNDDB listings.

California Native Plant Society

The California Native Plant Society (CNPS) is a nonprofit organization whose purpose is to promote the preservation of native California plants. CNPS created and maintains an Online Inventory of Rare and Endangered Plants of California. This extensive database is used by amateur and professional biologists and identifies four specific designations, or "Lists," of special-interest plant species (see Appendix C).

United States Fish and Wildlife Service

The USFWS, pursuant to the Federal Endangered Species Act (FESA), protects endangered and threatened species. An endangered species is defined as a species "in danger of extinction throughout all or a significant portion of its range;" a threatened species is one that is likely to become endangered in the foreseeable future.

The USFWS also identifies species that are proposed for listing as endangered or threatened. Other than for federal actions, there is no formal protection for these species under the FESA. However, consultation with the USFWS regarding proposed species can prevent project delays that could occur if a species is listed prior to project completion.

"Take" of a listed species is prohibited under Section 9 of the FESA. "Take" is to harass, harm, pursue, hunt, shoot, wound, trap, capture, or collect or attempt to engage in any such conduct. Harm is further defined as significant habitat alteration that results in death or injury to listed species by significantly impairing behavior patterns such as breeding, feeding, or sheltering. "Take" of a listed species incidental to otherwise lawful activities can be authorized by the USFWS. The take of federally listed species can be authorized under Section 10(a) of the FESA, with development of an HCP or as part of a Section 7 consultation between the USFWS and another federal agency if the project is subject to federal action (e.g., a Section 404 Permit).

United States Army Corps of Engineers

Regulations. The United States Army Corps of Engineers (Corps) regulates discharges of dredged or fill material into waters of the U.S. These waters include wetlands and nonwetland bodies of water that meet specific criteria. The Corps regulatory jurisdiction pursuant to Section 404 of the federal CWA is founded on a connection, or nexus, between the water body in question and interstate commerce. This connection may be direct, through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce, or may be indirect, through a

nexus identified in the Corps regulations. The following definition of waters of the U.S. is taken from the discussion provided in 33 Code of Federal Regulations (CFR) 328.3:

> "The term waters of the United States means:
>
> (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce . . . ;
>
> (2) All interstate waters including interstate wetlands;
>
> (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams) . . . the use, degradation or destruction of which could affect interstate or foreign commerce . . . ;
>
> (4) All impoundments of waters otherwise defined as waters of the United States under the definition; and
>
> (5) Tributaries of waters defined in paragraphs (a) (1)–(4) of this section."

The Corps typically considers any body of water displaying an ordinary high water mark (OHWM) for designation as waters of the U.S., subject to guidance derived from Supreme Court decisions. The landward limits of Corps jurisdiction in tidal waters of the U.S. extend to the high tide line, and Corps jurisdiction over nontidal waters of the U.S. extends laterally to the OHWM or beyond the OHWM to the limit of any adjacent wetlands, if present (33 CFR 328.4). The OHWM is defined as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area" (33 CFR 328.3). Jurisdiction typically extends upstream to the point where the OHWM is no longer perceptible.

The Corps and United States Environmental Protection Agency (EPA) define wetlands as follows:

> "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions."

In order to be considered a jurisdictional wetland under Section 404, an area must possess three wetland characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. Each characteristic has a specific set of mandatory wetland criteria that must be satisfied in order for that particular wetland characteristic to be met. Several parameters may be analyzed to determine whether the criteria are satisfied.

Regional Water Quality Control Board

The California Regional Water Quality Control Board (RWQCB) is responsible for the administration of Section 401 of the CWA, which is implemented through the issuance of a Section 401 Certification for Section 404 permits issued by the Corps. Typically, the areas subject to RWQCB jurisdiction

coincide with those of the Corps (i.e., waters of the U.S., including any wetlands). RWQCB also asserts authority over waters of the State under waste discharge requirements pursuant to the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), but this mechanism is typically not invoked in cases where the Corps asserts permitting authority pursuant to the CWA.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 United States Code [USC] 703–712, as amended) governs take, possession, import, export, transport, selling, purchasing, or bartering of migratory birds, their eggs, parts, and nests, except as authorized under a valid permit (50 CFR 21.11). The take of all migratory birds is governed by the MBTA's regulation of taking migratory birds for educational, scientific, and recreational purposes and requiring harvests to be limited to levels that prevent overutilization. Section 704 of the MBTA states that the Secretary of the Interior is authorized and directed to determine if, and by what means, the take of migratory birds should be allowed and to adopt suitable regulations permitting and governing take but ensuring that take is compatible with protection of the species.

Most bird species are protected under the MBTA and under the California Fish and Game Code. It is unlawful to take, possess, or needlessly destroy any bird or the nests or eggs of any bird species except as otherwise provided in California Fish and Game Code and regulations. Disturbances at the active nesting territories should be avoided during the nesting season.

METHODS

Literature Review

A literature review was conducted to determine potential occurrence of special-status plant and animal species on the proposed project site or in the vicinity. Database records for the *Inglewood, South Gate, Whittier, Torrance, Long Beach, Los Alamitos, San Pedro,* and *Seal Beach, California* United States Geological Survey (USGS) 7.5-minute quadrangles were reviewed on October 22, 2010 and January 24, 2013, using the CDFW's *Rarefind 3* CNDDB 2010.

General Biological Survey

A general biological survey of the project area was conducted by LSA biologist Richard Erickson on October 27, 2010.

A follow-up visit was made on November 2, 2010, by LSA biologist Leo Simone, primarily to address potential wetland issues within the project area.

EXISTING CONDITIONS

The entire project area appears to have been developed in the past; there is no natural habitat and the site is 100 percent disturbed.

Trees and other vegetation in urban parks provide the most habitat in the area for wildlife, albeit wildlife well adapted to life in an urban environmnt. Ruderal vegetation and open space in disturbed areas such as the project site also provide wildlife habitat, particularly for a number of the aerial insects that were observed. Plant and animal species detected in the project area are listed in Appendices A and B.

Special-status plant and animal species are addressed in Appendix C. The appendix comprises Tables C-1 and C-2, one showing plant species potentially present in the project vicinity and the other showing animal species. General habitat and range descriptions are included, as is a determination of the liklihood of the species actually being present in the project area.

As explained in Appendix D, no wetlands or potentially jurisdictional waters were identified within the project area.

PROJECT-RELATED IMPACTS

General Impacts to Vegetation and Wildlife

Project implementation will result in impacts to 8.75 ac of disturbed habitat. Changes will generally be positive. Many species, including native ones, are well-adapted to disturbed areas. Many of those species are also well-adapted to parkland and other relatively open conditions that will remain after the project is completed. The project's impacts on these species should be neutral. But for a many other native and nonnative species that prefer park-like conditions, the project will be beneficial.

From a biological perspective, the changes described here do not represent a significant negative impact. Indeed, the increased parkland, with accompanying increase in vegetation, will be a benefit to many plant and animal species.

Threatened and Endangered Species

Six plant and no animal species listed as threatened or endangered potentially occur in the project area and are discussed in more detail in Appendix C. Other species that occur in the area but are restricted to habitats not present on the project site are excluded (e.g., wetland species). None of the six listed species is likely to occur within the project site.

Nonlisted Special-Status Species and Associated Plant Communities

In addition to the 6 listed species, Appendix C discusses a number of nonlisted special-status species that might occur in the project vicinity: 16 plants, 1 invertebrate, 3 reptiles, 13 birds, and 12 mammals (all bats). None of the plants is given even a moderate chance of actually occurring on the project site. The southern tarplant does occur in disturbed areas in the project vicinity, but this conspicuous species was not seen during LSA's site visits.

One invertebrate, the monarch butterfly, is given special status when it gathers in considerable numbers at winter roost sites. Individual monarchs were seen during LSA's site visits, but no concentration was found.

Four special-status bird species have a moderate or high probability of occurring on the project site. Cooper's hawk and Allen's hummingbird are well adjusted to urban habitats in the Los Angeles Basin. Both species have a moderate potential of nesting in the project area and are even more likely to occur outside the nesting season. Peregrine falcon populations have recovered in many parts of the country, resulting in delisting by the USFWS and CDFW. Because they have taken to using bridges and buildings as nesting sites, it is likely that more peregrine falcons nest in the City area now than ever before. Foraging birds may use almost any area along the lower Los Angeles River, including the project site. The merlin does not nest in the Los Angeles Basin and occurs only during fall, winter, and spring. This small falcon specializes in hunting small birds and forages in virtually all habitats.

Only one special-status mammal species is believed to have a moderate chance of occurring within the project area, the Yuma myotis. This small bat is widespread in Southern California and is known to occur along the lower Los Angeles River. Additional bat species may occur farther upstream, where water conditions are less brackish.

None of the animal species discussed in this section would suffer from the anticipated habitat changes, and most would benefit from the project's habitat modifications. The monarch, Allen's hummingbird, and perhaps Cooper's hawk would probably benefit from the addition of more parkland.

Habitat Fragmentation and Wildlife Movement

The project site has long been enmeshed in the urban fabric of the City of Long Beach. There is no native habitat to fragment, and there are no wildlife movement corridors to sever. Whatever limited terrestrial wildlife movement may occur along the edge of the Los Angeles River will not be negatively impacted by the project. No significant negative impacts will result from the project.

Potential Jurisdictional Waters and Wetlands

As detailed in Appendix D, there are no jurisdictional waters or wetlands within the project site.

MITIGATION AND MINIMIZATION

Because there are no significant negative impacts to biological resources, no mitigation measures are warranted.

As for minimization, to the maximum extent feasible, construction activities that may impact existing vegetation or other potential nesting substrates should be conducted outside the primary nesting season for birds. In the City area, land birds can nest in almost any month, but there is typically little to no activity from September through December. Peak nesting months are typically March through June.

Trees are especially useful for nesting birds, so it is recommended that any necessary tree removal be done during the autumn months (i.e., September through December). If tree removal or trimming must be done outside this period, a qualified biologist should search for nesting birds sometime

during the 3 days prior to the work being done. If a nest with eggs or young of any species covered under the MBTA is found, work should not be permitted within a safe distance to be determined by the qualified biologist involved. If conditions allow, the qualified biologist may determine that the safe distance can be adjusted over time. Birds often become more committed to their nests, and therefore more tolerant of disturbance, as each nesting event progresses.

CUMULATIVE IMPACTS

As with direct project impacts, the only cumulative impacts resulting from the project are beneficial.

APPENDIX A

VASCULAR PLANT SPECIES OBSERVED

APPENDIX A
VASCULAR PLANT SPECIES OBSERVED

The following vascular plant species were observed in the project area by LSA biologists.

* Species not native to the study area

GYMNOSPERMAE	**CONE-BEARING PLANTS**
Cupressaceae	**Cypress Family**
* *Cupressus sempervirens* (planted)	Italian cypress
* *Juniperus chinensis 'Torulosa'* (planted)	Hollywood juniper
* *Metasequoia glyptostroboides* (planted)	Dawn redwood
* *Sequoia sempervirens* (planted)	Redwood
Ginkgoaceae	**Ginkgo Family**
* *Ginkgo biloba* (planted)	Ginkgo
Pinaceae	**Pine Family**
* *Abies concolor* (planted)	White fir
* *Pinus canariensis* (planted)	Canary Island pine
* *Pinus radiata* (planted)	Monterey pine
* *Pinus thunbergiana* (planted)	Japanese black pine
Podocarpaceae	**Podocarpus Family**
* *Afrocarpus gracilior* (planted)	African fern pine
ANGIOSPERMAE: DICOTYLEDONAE	**DICOT FLOWERING PLANTS**
Aizoaceae	**Carpet-Weed Family**
* *Carpobrotus edulis*	Hottentot-fig
Altingiaceae	**Altingia Family**
* *Liquidamber styraciflua* (planted)	American sweetgum
Amaranthaceae	**Amaranth Family**
* *Amaranthus* sp.	Pigweed
Anacardiaceae	**Sumac Family**
* *Schinus molle* (planted)	Peruvian pepper tree
Apiaceae	**Carrot Family**
* *Foeniculum vulgare*	Sweet fennel

Apocynaceae	**Dogbane Family**
* *Carissa macrocarpa* (planted)	Natal plum
* *Nerium oleander* (planted)	Oleander
* *Trachelospermum jasminoides* (planted)	Star jasmine
Araliaceae	**Ginseng Family**
* *Scheffelera actinophylla* (planted)	Queensland umbrella tree
Araucariaceae	**Araucaria Family**
* *Araucaria heterophylla* (planted)	Norfolk Island pine
Asteraceae	**Sunflower Family**
Baccharis pilularis	Coyote bush
Baccharis salicifolia	Mule fat
* *Erigeron* sp.	Horseweed
* *Gazania linearis*	Gazania
Heterotheca grandiflora	Telegraph weed
Stephanomeria virgata ssp. *virgata*	Tall wreath-plant
Betulaceae	**Birch Family**
* *Alnus rhombifolia* (planted)	White alder
Boraginaceae	**Borage Family**
* *Echium candicans* (planted)	Pride of Madeira
Cactaceae	**Cactus Family**
* *Opuntia* sp. (planted)	Prickly-pear
Chenopodiaceae	**Goosefoot Family**
* *Atriplex semibaccata*	Australian saltbush
* *Bassia hyssopifolia*	Five-hook bassia
* *Salsola tragus*	Russian-thistle
Convolvulaceae	**Morning-Glory Family**
* *Ipomoea purpurea* (planted)	Common morning-glory
Cucurbitaceae	**Gourd Family**
Cucurbita foetidissima	Calabazilla
Euphorbiaceae	**Spurge Family**
* *Ricinis communis*	Castor bean
Fabaceae	**Legume Family**
* *Acacia longifolia* (planted)	Sydney wattle
* *Albizia julibrissin* (planted)	Silk tree
* *Ceratonia siliqua* (planted)	Carob tree
* *Jacaranda mimosifolia* (planted)	Jacaranda

Fagaceae	**Beech Family**
* *Quercus ilex* (planted)	Holly-leaved oak
Geraniaceae	**Geranium Family**
* *Geranium* sp. (planted)	Geranium
Lauraceae	**Laurel Family**
* *Cinnamomum camphora* (planted)	Camphor tree
Magnoliaceae	**Magnolia Family**
* *Magnolia grandiflora* (planted)	Southern magnolia
Malvaceae	**Mallow Family**
* *Malva parviflora*	Cheeseweed
Moraceae	**Mulberry Family**
* *Ficus* sp. (planted)	Ficus
Myrtaceae	**Myrtle Family**
* *Agonis flexuosa* (planted)	Peppermint tree
* *Eucalyptus camaldulensis* (planted)	Red gum
* *Eucalyptus citriodora.* (planted)	Lemon scented gum
* *Eucalyptus globulus* (planted)	Blue gum
* *Eucalyptus polyanthemos* (planted)	Silver dollar gum
* *Eucalyptus sideroxylon* (planted)	Red ironbark
Nyctaginaceae	**Four O'Clock Family**
* *Bougainvillea* sp. (planted)	Bougainvillea
Oleaceae	**Olive Family**
* *Fraxinus excelsior* (planted)	European ash
* *Olea europaea* (planted)	Olive
Passifloraceae	**Passion Flower Family**
* *Passiflora* sp. (planted)	Passion flower
Pittosporaceae	**Pittosporum Family**
* *Pittosporum undulatum* (planted)	Victorian box
Platanaceae	**Sycamore Family**
* *Platanus acerifolia* (planted)	London plane tree
* *Platanus occidentalis* (planted)	American sycamore
* *Platanus racemosa* (planted)	Western sycamore
Plumbaginaceae	**Leadwort Family**
* *Plumbago auriculata*	Leadwort

Proteaceae	**Protea Family**
* *Grevillea robusta* (planted)	Silk oak
Rhamnaceae	**Buckthorn Family**
* *Ceanothus* sp. (planted)	Ceanothus
Rosaceae	**Rose Family**
* *Cotoneaster* sp. (planted)	Cotoneaster
* *Pyracantha* sp. (planted)	Pyracantha
* *Rhapholepis indica* (planted)	India hawthorn
Salicaceae	**Willow Family**
* *Populus fremontii* ssp. *fremontii* (planted)	Western cottonwood
Simaroubaceae	**Simarouba Family**
* *Ailanthus altissima* (planted)	Tree of heaven
Solanaceae	**Nightshade Family**
* *Nicotiana glauca*	Tree tobacco
Sterculiaceae	**Sterculia Family**
* *Brachychiton populneus*	Bottle tree
Ulmaceae	**Elm Family**
* *Ulmus parvifolia*	Chinese evergreen elm
ANGIOSPERMAE: MONOCOTYLEDONAE	**MONOCOT FLOWERING PLANTS**
Agavaceae	**Agave Family**
* *Agave americana* (planted)	American agave
* *Phormium tenax* (planted)	New Zealand flax
Arecaceae	**Palm Family**
* *Phoenix canariensis* (planted)	Canary Island date palm
* *Phoenix roebelenii* (planted)	Pigmy date palm
* *Trachycarpus fortunei* (planted)	Windmill palm
* *Washingtonia filifera* (planted)	Califonia fan palm
* *Washingtonia robusta* (planted)	Mexican fan palm
Iridaceae	**Iris Family**
* *Dietes* sp. (planted)	Fortnight iris
Poaceae	**Grass Family**
* *Avena barbata*	Slender wild oat
* *Avena fatua*	Common wild oat

*	*Bambusa* sp.	Bamboo
*	*Bromus diandrus*	Ripgut grass
*	*Bromus hordeaceus*	Soft chess
*	*Bromus madritensis* ssp. *rubens*	Foxtail chess
*	*Cortaderia selloana*	Pampas grass
*	*Cynodon dactylon*	Bermuda grass
*	*Festuca ovina glauca* (planted)	Sheep fescue
*	*Festuca rubra* (planted)	Red fescue
*	*Hordeum murinum*	Barley

Taxonomy and scientific nomenclature of native and naturalized taxa conform to Baldwin et al. (2012, *The Jepson Manual: Vascular Plants of California*. University of California Press, Berkeley.). Common names for taxa generally conform to Roberts (2008, *The Vascular Plants of Orange County, California, An Annotated Checklist*, F. M. Roberts Publications, San Luis Rey, California.), although Abrams (1923–1951, *Illustrated Flora of the Pacific States; Washington, Oregon, and California, Vols. I–III*. Stanford University Press, Stanford, California.) and Abrams and Ferris (1960, *Illustrated Flora of the Pacific States; Washington, Oregon, and California, Vol. IV*. Stanford University Press, Stanford, California.) are also used, particularly when species specific common names were not identified by Roberts (1998). Taxonomy and scientific nomenclature of ornamental taxa generally follow Clark (1979, *Sunset New Western Garden Book*, Lane Publishing, Menlo Park, California).

APPENDIX B

ANIMAL SPECIES OBSERVED

APPENDIX B
ANIMAL SPECIES DETECTED

This is a list of the conspicuous aerial insects (i.e., damselflies, dragonflies, and butterflies), amphibians, reptiles, birds, and mammals noted in the project area by LSA biologists. Presence may be noted if a species is seen or heard, or identified by the presence of tracks, scat, or other signs.

* Species not native to the study area

ANISOPTERA	**TYPICAL DRAGONFLIES**
Aeshnidae	**Darners**
Anax junius	Common green darner
Libellulidae	**Skimmers**
Sympetrum corruptum	Variegated meadowhawk
Pantala flavescens	Wandering glider
Pantala hymenaea	Spot-winged glider
LEPIDOPTERA	**BUTTERFLIES**
Pieridae	**Whites and Sulphurs**
cf. *Colias eurytheme*	Orange sulphur
Lycaenidae	**Gossamer-Wing Butterflies**
Strymon melinus	Gray hairstreak
Nymphalidae	**Brush-Footed Butterflies**
Agraulis vanillae	Gulf fritillary
Vanessa cardui	Painted lady
Danaus plexippus	Monarch
Hesperiidae	**Skippers**
Hylephila phyleus	Fiery skipper
AVES	**BIRDS**
Accipitridae	**Hawks, Kites, Eagles, and Allies**
Accipiter striatus	Sharp-shinned hawk
Buteo jamaicensis	Red-tailed hawk
Laridae	**Gulls, Terns, and Skimmers**
Larus delawarensis	Ring-billed gull
Larus occidentalis	Western gull

Columbidae	**Pigeons and Doves**
* *Columba livia*	Rock pigeon
Zenaida macroura	Mourning dove
Trochilidae	**Hummingbirds**
Calypte anna	Anna's hummingbird
Tyrannidae	**Tyrant Flycatchers**
Sayornis nigricans	Black phoebe
Sayornis saya	Say's phoebe
Corvidae	**Crows and Jays**
Corvus brachyrhynchos	American crow
Mimidae	**Mockingbirds and Thrashers**
Mimus polyglottos	Northern mockingbird
Sturnidae	**Starlings**
* *Sturnus vulgaris*	European starling
Parulidae	**Wood Warblers**
Setophaga coronata	Yellow-rumped warbler
Emberizidae	**Emberizids**
Zonotrichia leucophrys	White-crowned sparrow
Fringillidae	**Fringilline and Cardueline Finches and Allies**
Haemorhous mexicanus	House finch
Passeridae	**Old World Sparrows**
* *Passer domesticus*	House sparrow

Taxonomy and nomenclature are based on the following.

Damselflies and dragonflies: Paulson, D. (2009, Dragonflies and Damselflies of the West, Princeton University Press, Princeton, New Jersey).

Butterflies: North American Butterfly Association (2001, NABA checklist and English Names of North American Butterflies, Second Edition, North American Butterfly Association, Morristown, New Jersey; see http://www.naba.org/pubs/checklst.html).

Birds: American Ornithologists' Union (1998, The A.O.U. Checklist of North American Birds, Seventh Edition, American Ornithologists' Union, Washington D.C.; and supplements; see http://www.aou.org/checklist/north/index.php).

APPENDIX C

SPECIAL-STATUS SPECIES TABLES

Table C-1: Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status: Federal/ State/CNPS	General Habitat Description	Potential for Occurrence at the Project Site	Rationale
Aphanisma	*Aphanisma blitoides*	--/--/1B	Sandy or clay soils on slopes or bluffs near the ocean, usually in coastal bluff scrub, coastal dunes, or coastal scrub below 305 m (1,000 ft) elevation. Known in California from Ventura, Santa Barbara, Los Angeles, Orange, and San Diego Counties. Also occurs in Mexico. Blooms March–June.	Low	No sand or clay soils occur within the project site.
Coastal dunes milk-vetch	*Astragalus tener* var. *titi*	FE/CE/1B	Moist, sandy depressions of coastal dunes and bluffs, or clay terrace, below 50 m (160 ft) elevation. Believed extirpated from Los Angeles County. Blooms March–May.	Low	No coastal dunes, bluffs, or clay terraces occur within the project site. Believed extirpated from Los Angeles County.
Coulter's saltbush	*Atriplex coulteri*	--/--/1B	Alkaline or clay soils in ocean bluffs and ridgetops and alkaline low places in coastal bluff scrub, coastal dunes, coastal sage scrub, and valley and foothill grasslands below 460 m (1,500 ft) elevation. In California, known only from Los Angeles, Orange, Santa Barbara, San Bernardino, San Luis Obispo, Ventura, and San Diego Counties. Also occurs in Mexico. Blooms March–October.	Low	No alkaline or clay soils or suitable habitat occurs within the project site.
South Coast saltscale	*Atriplex pacifica*	--/--/1B	Alkali soils in coastal sage scrub, playas, coastal bluff scrub, coastal dunes, and chenopod scrub below 200 m (600 ft) elevation, and perhaps formerly up to about 430 m (1,400 ft) in Los Angeles County. In California, known from the Channel Islands and mainland Los Angeles, San Diego, and Orange Counties. Also occurs in Mexico. Blooms March–October.	Low	No alkaline soils or other suitable habitat occurs within the project site.
Parish's brittlescale	*Atriplex parishii*	--/--/1B	Alkali meadows, vernal pools, chenopod scrub, and playas. Usually on drying alkali flats with fine soils. In California, known from Riverside, San Diego, and Orange Counties. Also occurs in Mexico. Believed extirpated from Los Angeles and San Bernardino Counties. Blooms June–October.	Low	No alkaline soils or other suitable habitat occurs within the project site. Believed extirpated from Los Angeles County.
Davidson's saltscale	*Atriplex serenana* var. *davidsonii*	--/--/1B	Alkaline soils in scrub and herbaceous communities from 10 to 460 m (30 to 1,500 ft) elevation. In California, known only from Los Angeles(?), Orange, Riverside, San Diego, San Luis Obispo, and Ventura Counties. Believed extirpated from Santa Barbara and perhaps Los Angeles Counties. Also occurs in Mexico. Blooms April–October.	Low	No alkaline soils or other suitable habitat occurs within the project site. Perhaps extirpated from Los Angeles County.
Round-leaved filaree	*California macrophylla*	--/--/1B	Clay soils in woodland, scrub, and grassland communities from 15 to 1,200 m (50 to 4,000 ft) elevation. Known from central and south coastal areas and the Central Valley in California. Also occurs in Oregon and Mexico. Blooms March–May.	Low	No clay soils occur within the project site.

Table C-1: Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status: Federal/ State/CNPS	General Habitat Description	Potential for Occurrence at the Project Site	Rationale
Plummer's mariposa-lily	*Calochortus plummerae*	--/--/4	Sandy or rocky sites of (usually) granitic or alluvial material in valley and foothill grassland, coastal scrub, chaparral, cismontane woodland, and lower montane coniferous forest at 100 to 1,700 m (300 to 5,600 ft) elevation. Known from the Santa Monica Mountains to San Jacinto Mountains in Riverside, San Bernardino, Orange, Los Angeles, and Ventura Counties. Blooms May–July	Low	No sandy or rocky soils occur within the project site.
Southern tarplant	*Centromadia parryi* ssp. *australis*	--/--/1B	In vernally wet areas such as edges of marshes and vernal pools, at edges of roads and trails, and in other areas of compacted, poorly drained, or alkaline soils where competition from other plants is limited, often due to disturbance, below 425 m (1,400 ft) elevation. In California, known only from Santa Barbara, Ventura, Los Angeles, Orange, and San Diego Counties. Also occurs in Mexico. Blooms May–November.	Low	Habitat may be marginally suitable in places, but not observed during site visits in October and November 2010.
Salt marsh bird's-beak	*Chloropyron maritimum ssp. maritimum*	FE/CE/1B	Coastal dunes and salt marshes below 30 m (100 ft) elevation. In California, known from Los Angeles, Orange, Santa Barbara, San Diego, San Luis Obispo, and Ventura Counties. Also occurs in Mexico. Blooms May–October.	Low	No dunes or salt marshes occur within the project site.
Many-stemmed dudleya	*Dudleya multicaulis*	--/--/1B	Heavy, often clay soils or around granitic outcrops in chaparral, coastal sage scrub, and grassland below 790 m (2,600 ft) elevation. Known only from Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties. Blooms April–July.	Low	No clay, granitic outcrops, or similar habitat occurs within the project site.
Vernal barley	*Hordeum intercedens*	--/CP/3	Vernal pools and saline flats and depressions below 1,000 m (3,300 ft) elevation. Known from many California Counties. Also occurs in Mexico.	Low	No vernal pools, saline flats, or depressions occur within the project site.
Mesa horkelia	*Horkelia cuneata* var. *puberula*	--/--/1B	Sandy or gravelly soils in chaparral, or rarely in cismontane woodland or coastal scrub at 70 to 825 m (200 to 2,700 ft) elevation. Occurs in San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, and San Bernardino Counties. Believed extirpated from Riverside and San Diego Counties. Blooms February–July (September).	Low	No gravelly or sandy habitat occurs within the project site.
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*	--/--/1B	Usually alkaline soils in marshes, playas, vernal pools, and valley and foothill grassland below 1,400 m (4,600 ft) elevation. Known from Colusa, Merced, Tulare(?), Orange, Riverside, Santa Barbara, San Diego, San Luis Obispo, and Ventura Counties. Believed extirpated from Kern, Los Angeles, and San Bernardino Counties. Also occurs in Mexico. Blooms February–June.	Low	No alkaline soils or other suitable habitat occurs within the project site. Believed extirpated from Los Angeles County.

Table C-1: Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status: Federal/ State/CNPS	General Habitat Description	Potential for Occurrence at the Project Site	Rationale
Mud nama	*Nama stenocarpum*	--/--/2	Lake shores, riverbanks, and similar intermittently wet areas at five to 500 m (20 to 1,600 ft) elevation. Known in California from San Diego, Orange, and Riverside Counties and from San Clemente Island. Believed extirpated from Los Angeles and Imperial Counties. Known also from Baja California and Arizona. Blooms January–July.	Low	Habitat probably unsuitable. Believed extirpated from Los Angeles County.
Moran's navarretia	*Navarretia fossalis*	FT/--/1B	In vernal pools, playas, shallow freshwater marshes and similar sites at 30 to 1,310 m (100 to 4,300 ft) elevation. In California, known only from Los Angeles, San Luis Obispo, Riverside, and San Diego Counties. Also occurs in Mexico. Blooms April–June.	Low	No vernal pools or other suitable habitat occurs within the project site.
Prostrate vernal pool navarretia	*Navarretia prostrata*	--/--/1B	Vernal pools, usually alkaline, from 15 to 700 m (50 to 2,300 ft) elevation. Known only from Alameda, Los Angeles, Merced, Los Angeles, Orange, Riverside, San Benito, San Diego San Luis Obispo, and possibly San Bernardino Counties. Blooms April–June.	Low	No vernal pools or other suitable habitat occurs within the project site.
Coast wooly-heads	*Nemacaulis denudata* var. *denudata*	--/--/1B	Sandy places such as coastal dunes below 100 m (300 ft) elevation. Known in California from Orange, Los Angeles, and San Diego Counties. Also occurs in Mexico. April–September.	Low	No sandy soils occur within the project site.
California Orcutt grass	*Orcuttia californica*	FE/CE1B	Vernal pools from 15 to 660 m (50 to 2,200 ft) elevation. In California, known from Los Angeles, Ventura, Riverside, and San Diego Counties. Also occurs in Mexico. Blooms April–August.	Low	No vernal pools occur within the project site.
Lyon's pentachaeta	*Pentachaeta lyonii*	FE/CE/1B	Clay soils in edges of openings in fire-adapted coastal sage scrub and chaparral on saddles between hills, on the tops of small knolls, or in flat areas at the base of slopes, particularly where soil crust results in less competition from annual grasses, from 30 to 630 m (100 to 2,100 ft) elevation. Occurs only in the Santa Monica Mountains in eastern Ventura and western Los Angeles Counties and in the western Simi Hills in Ventura County. Based on historical records, it once occurred on the Palos Verdes Peninsula and on Santa Catalina Island, but has not been seen at those locations since 1910 and is assumed to be extirpated there. Blooms March–August.	Low	No clay habitats occur within the project site. Believed to be extirpated from the area.

Table C-1: Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status: Federal/ State/CNPS	General Habitat Description	Potential for Occurrence at the Project Site	Rationale
Hubby's phacelia	*Phacelia hubbyi*	--/--/4	Occurs in gravelly, rocky, and talus areas as well as chaparral, coastal scrub, and valley and foothill grasslands. Elevation range from 0 to 3,280 feet. Santa Barbara to Orange Counties and Santa Cruz Island..	Low	No suitable habitat on site.
Brand's star phacelia	*Phacelia stellaris*	FC/--/1B	Sandy openings, sandy benches, dunes, sandy washes, or river floodplains in coastal sage scrub at five to 400 m (20 to 1,300 ft) elevation. In California, known only from Los Angeles (believed extirpated), Riverside, and San Diego Counties. Blooms March–June.	Low	No sandy soils or other suitable habitat occurs within the project site. Believed extirpated from Los Angeles County.
San Bernardino aster	*Symphyotrichum defoliatum*	--/--/1B	Vernally wet sites (such as ditches, streams, and springs) in many plant communities below 2,040 m (6,700 ft) elevation. In California, known from Ventura, Kern, San Bernardino, Los Angeles, Orange, Riverside, and San Diego Counties. May also occur in San Luis Obispo County. Blooms July–November.	Low	Habitat probably unsuitable.

Status: Federal Endangered (FE); Federal Threatened (FT); Federal Candidate (FC); California Endangered (CE); California Threatened (CT); California Fully Protected Species (CFP); California Species of Special Concern (CSC); California Special Plant (CSP), California Special Animal (CSA), California Native Plant Society (CNPS); 1A, Plants presumed extinct in California; 1B, Plants considered by CNPS to be rare, threatened, or endangered in California and elsewhere, 2, Plants considered by CNPS to be rare, threatened, or endangered in California, but more common elsewhere; 3, Plants about which more information is needed – a CNPS review list; CNPS threat categories: 0.1-Seriously threatened in California (high degree/immediacy of threat); 0.2-Fairly threatened in California (moderate degree/immediacy of threat); 0.3-Not very threatened in California (low degree/immediacy of threats or no current threats known); 4, Plants Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.

m = meter
ft = feet/foot

Table C-2: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status: Federal/ State	General Habitat Description	Potential for Occurrence at the Project Site	Rationale
INVERTEBRATES					
Monarch butterfly	*Danaus plexippus*	--/CSA (overwintering concentration)	Winter roost sites extend along the coast from northern Mendocino County to Baja California. Roosts located in wind-protected tree groves (eucalyptus, pine, cypress), with nectar and water sources nearby.	Individuals observed, but potential for roosting concentration is low	Suitable winter roost sites may be present in developed areas nearby, but none have been reported in the area.
REPTILES					
Coastal western whiptail	*Aspidoscelis tigris stejnegeri*	--/CSA	Wide variety of habitats, including CSS, sparse grassland, and riparian woodland; coastal and inland valleys and foothills; Ventura County to Baja California.	Low	May persist along the lower Los Angeles River, but unlikely to be found within the project site.
Silvery legless lizard	*Anniella pulchra pulchra*	--/CSC	Fossorial. Inhabits loose soil and humus from central California to northern Baja California.	Low	May persist along the lower Los Angeles River, but unlikely to be found within the project site.
San Bernardino ring-necked snake	*Diadophis punctatus modestus*	--/CSA	Along drainage courses, in mesic chaparral and oak and walnut woodland communities. Moist habitats of southwestern California from approximately Ventura to Orange Counties.	Low	Probably persists along the lower Los Angeles River, but unlikely to be found within the project site, although potential habitat is present.
BIRDS					
Great blue heron	*Ardea herodias*	--/CSA (rookery site)	Rookeries consist of a colony of breeding animals. Usually nests in trees, but also on large bushes, poles, reed beds, and even on the ground. Frequents a wide range of wetland habitats at other times of year. Widespread in North America; winters to northern South America.	Low	May have nested within the project site historically, but not known to do so currently. Suitable nesting habitat is lacking on the project site.
Great egret	*Ardea alba*	--/CSA (rookery site)	Occurs in a wide range of wetland habitats in much of the temperate and tropical zones worldwide. Nests primarily in trees.	Low	May have nested within the project site historically, but not known to do so currently. Suitable nesting habitat is lacking on the project site.
Snowy egret	*Egretta thula*	--/CSA (rookery site)	Occurs in a wide range of wetland habitats throughout much of the Americas. Nests primarily in trees.	Low	May have nested within the project site historically, but not known to do so currently. Suitable nesting habitat is lacking on the project site.

Table C-2: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status: Federal/ State	General Habitat Description	Potential for Occurrence at the Project Site	Rationale
Black-crowned night-heron	*Nycticorax nycticorax*	--/CSA (rookery site)	Occurs in a wide range of wetland habitats in much of the temperate and tropical zones worldwide. Nests primarily in trees, sometimes in urban habitats.	Low	May have nested within the project site historically, but not known to do so currently. Suitable nesting habitat is lacking on the project site.
Cooper's hawk	*Accipiter cooperii*	--/CSA (nesting)	Primarily forests and woodlands throughout North America. Nests in trees.	Moderate	This species is now a rather common and widespread breeder in urban areas through the Los Angeles Basin. Foraging habitat is present on the project site, but nesting habitat is lacking.
Burrowing owl	*Athene cunicularioa*	BCC/CSC (burrow sites)	Open country in much of North and South America.	Low	Occasional migrants and wintering birds still occur along the lower Los Angeles River, but believed to be extirpated as a nesting species.
Costa's hummingbird	*Calypte costae*	BCC/CSA (nesting)	Primarily deserts, arid brushy foothills, and chaparral in the southwestern United States and northwestern Mexico.	Low	Probably occurs in small numbers as a transient and winter visitor (nearly year-round), but natural arid scrub breeding habitat is absent.
Allen's hummingbird	*Selasphorus sasin*	BCC/CSA (nesting)	Chaparral, open oak woodland riparian woodland and residential areas on the breeding grounds from southwestern Oregon to southwestern California; primarily montane woodland on the wintering grounds in central Mexico.	Moderate	Fairly common resident within the project area. It is an abundant, adaptable, and increasing species throughout urban Southern California, and expected anywhere there is a mix of exotic flowering trees and shrubs.
Nuttall's woodpecker	*Picoides nuttallii*	BCC/CSA (nesting)	Oak, pine-oak, and riparian woodland in California and northwestern Baja California.	Low	Occasional visitors may occur, but suitable habitat for nesting is absent within the project area.
Merlin	*Falco columbarius*	--/CSA	Open fields; breeds in the Holarctic Region and winters south to the tropics. Uncommon fall migrant and winter visitor to southwestern California.	High	This species has increased greatly as a wintering species in the Los Angeles Basin and regularly forages along the length of the Los Angeles River.
American peregrine falcon	*Falco peregrinus anatum*	FDE,BCC/ SDE,CFP	Widespread, but scarce and local throughout North America. Nests on buildings and bridges in the Los Angeles Basin.	Moderate	Nests in the Port of Los Angeles and regularly forages within the project area.
Loggerhead shrike	*Lanius ludovicianus*	BCC/CSC (nesting)	Open country in much of North America, but declining in many areas, including southwestern California.	Low	Nested along the lower Los Angeles River in Long Beach and Cudahy as recently as 2002 and 2004, but now probably extirpated as a nesting species. Has greatly declined as a wintering species in the area as well.
California horned lark	*Eremophila alpestris actia*	--/CSA (nesting)	Open grasslands and fields, agricultural areas from northern coastal California to northwestern Baja California.	Low	May no longer breed in coastal Los Angeles County.

Table C-2: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status: Federal/ State	General Habitat Description	Potential for Occurrence at the Project Site	Rationale
MAMMALS					
Western mastiff bat	*Eumops perotis californicus*	--/CSC	Ranged historically throughout much of the southwestern United States and northwestern Mexico. In California, most records are from rocky areas at low elevations. Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.; roosts in crevices in vertical cliff faces, high buildings, trees, and tunnels throughout southwestern California. May roost in tall bridges.	Low	Although only marginally suitable roosting habitat is present in the project area, numerous historic roosting areas exist in the Los Angeles Basin. In addition, foraging habitat is present along the Los Angeles River, and this species is known to forage over large distances from roost sites.
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	--/CSC	Varied habitats, but usually associated with high cliffs or rocky areas. Spotty distribution, ranging from Southern California and southwestern Arizona through central Mexico. Roosts primarily in cliffs/rock crevices; may use buildings for roosting. Rarely roosts in bridges.	Low	Although roosting is unlikely within the project area, foraging habitat is present along the Los Angeles River, and this species is known to forage over large distances from roost sites. Recorded from Harbor City and Inglewood.
Big free-tailed bat	*Nyctinomops macrotis*	--/CSC	Mainly inhabits rugged, rocky habitats in arid southwestern North America. Feeds principally on large moths. Roosts primarily in cliffs/rock crevices, and rarely in buildings, caves, and tree cavities. Not known to use bridges for roosting.	Low	Although roosting is unlikely within the project area, foraging habitat is present along the Los Angeles River, and this species is known to forage over large distances from roost sites. Recorded from Long Beach and Los Angeles.
Western red bat	*Lasiurus blossevillii*	--/CSC	Ranges from southwestern Canada through the western United States and Middle America to South America. Forages over a wide range of habitats, but often associated with intact riparian habitat, and particularly with willows, cottonwoods, and sycamores. Typically solitary, roosting in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas.	Low	Not known to use bridges for roosting but may roost in large-leaved trees along portions of the lower Los Angeles River and adjacent residential areas. Foraging habitat is present along the Los Angeles River.
Hoary bat	*Lasiurus cinereus*	--/CSA	Widespread in North America (and Hawaii). Forages over a wide range of habitats, but prefers open habitats with access to water and trees for roosting. Typically solitary, roosting in the foliage of shrubs or coniferous and deciduous trees. Roosts are usually near the edge of a clearing.	Low	Not known to use bridges for roosting but may roost in trees along portions of the lower Los Angeles River or in adjacent residential areas. Foraging habitat is present along the river. Recorded throughout the Los Angeles area.
Western yellow bat	*Lasiurus xanthinus*	--/CSC	Varied habitats from the southwestern United States to southern Mexico; often associated with palms and desert riparian habitats. In Southern California, occurs in palm oases and in residential areas with untrimmed palm trees. Roosts primarily in trees, especially the dead fronds of palm trees, though they have also been documented to roost under the leaves of deciduous	Low	Not known to use bridges for roosting but may roost in palms along portions of the lower Los Angeles River and adjacent residential areas. Foraging habitat is present along the Los Angeles River. Recorded from Garden Grove.

Table C-2: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status: Federal/ State	General Habitat Description	Potential for Occurrence at the Project Site	Rationale
			trees such as cottonwoods.		
Townsend's big-eared bat	*Corynorhinus townsendii*	--/CSC	Ranges from southwestern Canada through the western United States to southern Mexico. Requires caves, mines, tunnels, buildings, or other similar structures for roosting. Occasionally roosts in hollow spaces of bridges or buildings. Will occasionally roost in hollow trees. Highly sensitive to disturbance.	Low	Known to occasionally roost in the hollow spaces of bridges. Foraging habitat is present along the Los Angeles River.
Pallid bat	*Antrozous pallidus*	--/CSC	Varied habitats in western North America, including grasslands, shrublands, woodlands, deserts, and forest. Primarily day roosts in bridges, hollows or crevices of trees, or buildings. Occasionally roosts in mines, caves, and cliff/rock crevices. Night roosts may be more open sites, such as porches, open buildings, and bridges.	Low	Known to frequently roost in bridges. Foraging habitat is present along the Los Angeles River. Recorded throughout the Los Angeles area, including Long Beach.
Silver-haired bat	*Lasionycteris noctivagans*	--/CSA	Primarily associated with north temperate zone conifer and mixed conifer/hardwood forests across southern Canada and most of the United States. May be found in winter and during seasonal migration in lower, xeric habitats. Roosts mainly in hollows or crevices of trees, but may also roost in rock crevices, mines, or caves. May forage a considerable distance from roosting area.	Low	Rarely uses bridges for roosting, but may roost in trees within the project area and forage along the Los Angeles River. Recorded from Bellflower and Long Beach.
Western small-footed myotis	*Myotis ciliolabrum*	--/CSA	Found across much of North America, primarily in relatively arid wooded and brushy uplands near water. Individuals are known to roost singly or in small groups in cliff and rock crevices, buildings, concrete overpasses, caves, and mines.	Low	Known to occasionally roost in bridges. Foraging habitat is present along the Los Angeles River.
Long-eared myotis	*Myotis evotis*	--/CSA	Found throughout much of North America in semiarid shrublands, chaparral, and agricultural areas, but is usually associated with coniferous forests. Roosts under exfoliating tree bark and in hollow trees, caves, mines, and crevices in cliffs/rocks. Sometimes roosts in buildings and bridges.	Low	Known to occasionally roost in bridges. Foraging habitat is present along the Los Angeles River, and the species has been recorded as close as Arroyo Seco.

Table C-2: Special-Status Animal Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status: Federal/ State	General Habitat Description	Potential for Occurrence at the Project Site	Rationale
Yuma myotis	*Myotis yumanensis*	--/CSA	Occurs in a variety of habitats in western North America including riparian, arid scrublands and deserts, and forests. Optimal habitats are open forests and woodlands with sources of water over which to feed. Roosts in buildings, mines, caves, or crevices; and under bridges. May occasionally roost in swallow nests.	Moderate	Known to frequently roost in bridges. Observed roosting and foraging along the lower Los Angeles River from SR-91 to Willow St. (LSA data). No roosting habitat on the project site.

Habitat Present/Absent: Absent (A) - no habitat present and no further work needed. Habitat Present (P) – habitat is, or may be present. (O) – Based on the literature review and field surveys, the species has been observed within the project site. Critical Habitat (CH) – Project footprint is located within designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.

Status: Federal Endangered (FE); Federal Threatened (FT); Federal Proposed (FP, FPE, FPT); Federal Candidate (FC); Federally Delisted as Endangered (FDE); United States Fish and Wildlife Service Birds of Conservation Concern (BCC); California Endangered (CE); California Threatened (CT); California Delisted as Endangered (SDE); Fully Protected Species (CFP); California Species of Special Concern (CSC); California Special Plant (CSP), California Special Animal (CSA)

BSA = biological study area
CDFW = California Department of Fish and Game
CSS = coastal sage scrub
ESU = Evolutionarily Significant Unit
ft = feet/foot
I-405 = Interstate 405
SR-91 = State Route 91
USFWS = United States Fish and Wildlife Service

LSA

LSA ASSOCIATES, INC.
20 EXECUTIVE PARK, SUITE 200
IRVINE, CALIFORNIA 92614
949.553.0666 TEL
949.553.8076 FAX

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RIVERSIDE
ROCKLIN
SAN LUIS OBISPO
SOUTH SAN FRANCISCO

M E M O R A N D U M

DATE: December 7, 2010

TO: Sandra J. Gonzalez, City of Long Beach Department of Parks, Recreation and Marine

FROM: Richard Erickson

SUBJECT: Preliminary Wetland Delineation for the Proposed Drake-Chavez Greenbelt Project

As part of its environmental review of the proposed Drake-Chavez Greenbelt (Greenbelt) Project in the City of Long Beach, LSA Associates, Inc. (LSA) evaluated the possibility of there being any on-site jurisdictional waters of the State, waters of the United States, or wetlands. This is typically referred to as a Preliminary Wetland Delineation.

According to the California Department of Fish and Game, jurisdictional waters of the State are defined by the presence of a channel bed and banks and at least a periodic flow of water.

United States Army Corps of Engineers (Corps) regulations (33 Code of CFR 328.3) state that "waters of the United States means: (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce . . . ; (2) All interstate waters including interstate wetlands; (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams) . . . the use, degradation or destruction of which could affect interstate or foreign commerce . . . ; (4) All impoundments of waters otherwise defined as waters of the United States under the definition; and (5) Tributaries of waters defined in paragraphs (a) (1)–(4) of this section."

The Corps and United States Environmental Protection Agency (EPA) define wetlands as "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions." In order to be considered a jurisdictional wetland under Section 404 of the federal Clean Water Act, an area must possess three wetland characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. Each characteristic has a specific set of mandatory wetland criteria that must be satisfied in order for that particular wetland characteristic to be met.

METHODS

On October 27 and November 2, 2010, respectively, LSA biologists Richard Erickson and Leo Simone visited the site of the proposed Greenbelt Project. On both occasions, the entire project site was surveyed for any conditions that might suggest the presence of any of the wetland features discussed above. Mr. Simone, in particular, has prepared many Preliminary Wetland Delineations and is well suited for this evaluation.

RESULTS

No wetland physical characteristics or wetland-indicator species were found at the Greenbelt Project site. Rain puddles were present in many disturbed areas and at Cesar E. Chavez Park—the result of recent storms—but there was no suggestion of a flow of water anywhere. During both site visits, the bike path undercrossing of the Interstate 710 off-ramp and the Shoreline Drive connectors was flooded to a depth of several feet. The entire flooded area was unnatural and lined with concrete.

CONCLUSION AND DISCUSSION

There are no jurisdictional waters of the State, waters of the United States, or wetlands on the Greenbelt Project site.

Although historical maps show that a drainage once followed the track of the northeastern arm of the project site, no suggestion of waters or wetlands remains in that area. The drainage appears to have been undergrounded, as there is a water discharge structure on the river side of the Los Angeles River dike approximately half way up the west side of the project site, corresponding to the historical mouth of the drainage. Design features of the Greenbelt Project will bring 4 acres of new wetlands to the project site.

APPENDIX C

CULTURAL RESOURCES ASSESSMENT REPORT
(CONFIDENTIAL-ON FILE WITH THE CITY)
AND
PALEONTOLOGICAL ASSESSMENT REPORT

PALEONTOLOGICAL RESOURCES ASSESSMENT FOR THE

DRAKE PARK SOCCER FIELD PROJECT

LONG BEACH, LOS ANGELES COUNTY, CALIFORNIA

Prepared for:

Anna Mendiola
City of Long Beach
Department of Parks, Recreation and Marine
2760 Studebaker Road
Long Beach, California 90815

Prepared by:

Steven W. Conkling
LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, California 92614
949.553.0666

Project No. CLB1202

LSA

January 2013

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ABSTRACT

A paleontological resource assessment for the Drake Park Soccer Field Project was conducted by LSA Associates, Inc. (LSA). This assessment included a locality and archival search conducted at the Los Angeles County Museum of Natural History and through the records maintained by LSA. All work was completed during January 2013.

The project proposes development of a new park facility on an 8.75-acre (ac) vacant parcel located northeast of the existing Drake Park improvements. The proposed project would consist of one striped soccer field, large landscaped open space/passive park areas, a pedestrian walking trail, restroom facilities, and parking. The proposed park would incorporate the existing Loma Vista Park into the new park layout by removing the existing chain-link fencing along the northwestern portions of Loma Vista Park. The proposed Drake Park Soccer Field Project would be linear in form and would be characterized by an 8 foot (ft) wide pedestrian trail traversing the park from the northeast to southwest. The northeast entrance at Anaheim Street and N. Daisy Avenue is envisioned to be a gateway entrance to the proposed park.

Based on the results of this study, LSA finds that the project has the potential to significantly impact paleontological resources if excavation for the project extends below 3 ft. Due to the potential for buried fossils at depths below 3 ft, LSA recommends that any project excavation that will extend below 3 ft be monitored by a qualified paleontological monitor.

In the event that previously undocumented paleontological resources are identified while monitoring during construction activities, the monitor will have the authority to temporarily redirect work away from the find until it can be assessed and recovered using best professional practices.

Copies of this report are on file at the LSA Irvine office.

INTRODUCTION

LSA was contracted by the City of Long Beach (City) to conduct a paleontological resource assessment for the Drake Park Soccer Field Project located in the City of Long Beach, Los Angeles County, California. The purpose of this assessment was to identify any fossil resources that may be impacted by the project. This assessment will address the requirements of the California Environmental Quality Act (CEQA), as amended March 2010.

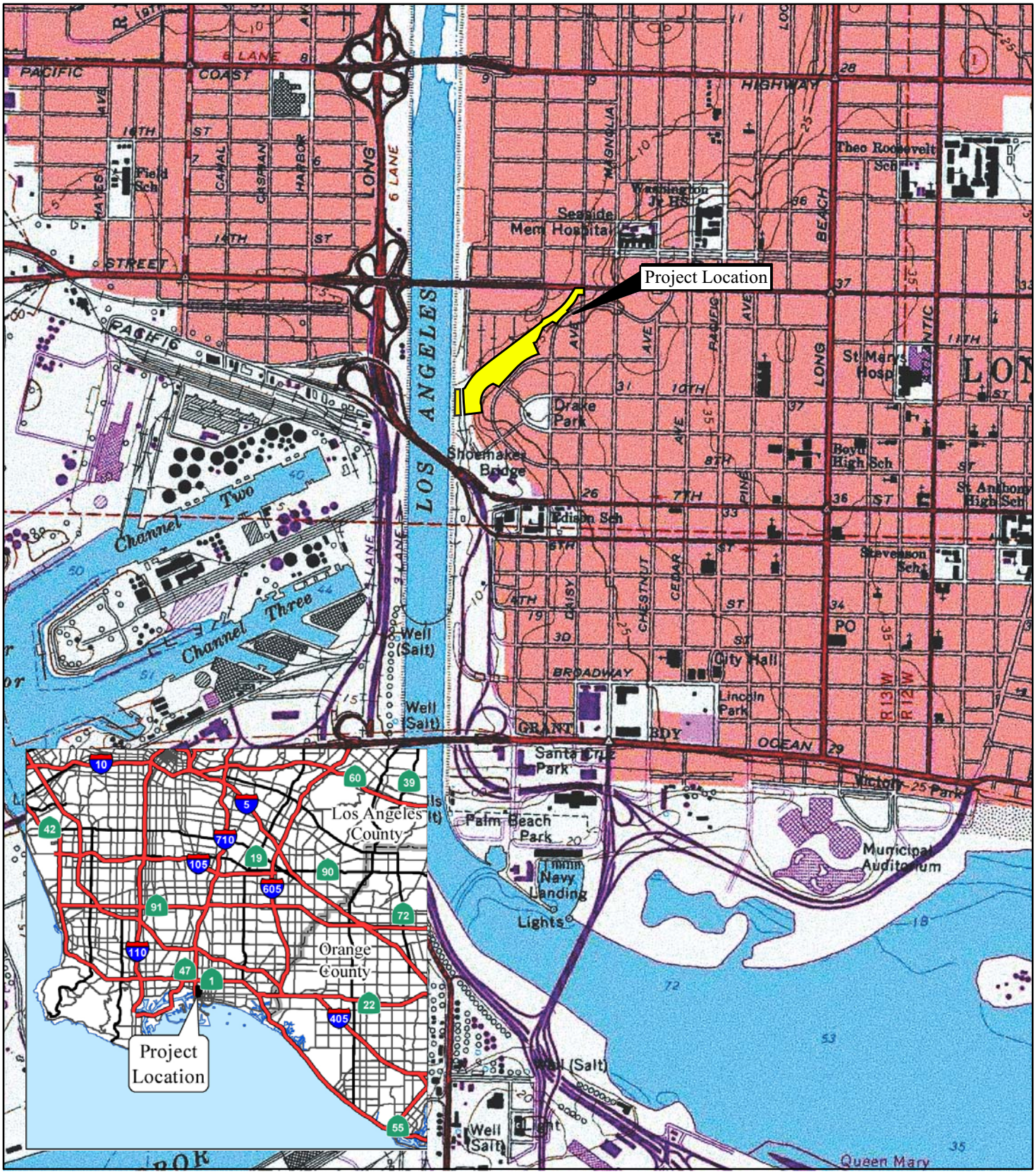
The proposed project would consist of one striped soccer field, large landscaped open space/passive park areas, a pedestrian walking trail, restroom facilities, and parking. The proposed park would incorporate the existing Loma Vista Park into the new park layout by removing the existing chain-link fencing along the northwestern portions of Loma Vista Park. The proposed Drake Park Soccer Field Project would be linear in form and would be characterized by an 8 ft wide pedestrian trail traversing the park from the northeast to southwest. The northeast entrance at Anaheim Street and N. Daisy Avenue is envisioned to be a gateway entrance to the proposed park.

Lighting would be provided to the soccer field from six standard field light poles, and low-level security lighting would be provided along the pedestrian path at 50 ft intervals. Lighting would be directed downward and shielded so that it is contained within the site boundaries.

The proposed project will provide a total of 66 parking spaces in a parking lot on the southwest end of the site and 28 parking spaces along De Forest Avenue to satisfy the City's parking requirements.

The project area is depicted on an unsectioned portion of the United States Geological Survey (USGS) *Long Beach, California* 7.5-minute topographic quadrangle map, Township 4 South, Range 13 West, San Bernardino Baseline and Meridian (Figure 1). No paleontological localities have been identified within the project area.

Steven W. Conkling, Paleontologist, completed the tasks associated with this assessment.



LSA

FIGURE 1

0 1000 2000
FEET

SOURCE: USGS 7.5' QUAD - Long Beach ('81)

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Drake Park Soccer Field Project

Project Location

PROJECT DESCRIPTION

The proposed Drake Park Soccer Field project site is located in the Downtown area of the City in Los Angeles County, California. The currently vacant project site is located to the east of the Los Angeles River and Interstate 710 (I-710). The project site is bound by Loma Vista Drive and single-family residential uses to the southeast and east, a ceramic factory and industrial uses to the south, De Forest Avenue to the west, and existing industrial and commercial uses to the north. Existing Drake Park facilities are located to the southeast across Loma Vista Drive. In addition, Loma Vista Park abuts a portion of the northeastern boundary of the project site. Currently, Loma Vista Park provides a grassy park area and park bench.

The proposed project includes the development of an 8.75 ac new park facility on existing vacant parcels. The proposed project would consist of one striped soccer field, large landscaped open space/ passive park areas, a pedestrian walking trail, restroom facilities, and parking. The proposed park would incorporate the existing Loma Vista Park into the new park layout by removing the existing chain-link fencing along the northwestern portions of Loma Vista Park. The proposed Drake Park Soccer Field Project would be linear in form and would be characterized by an 8 ft wide pedestrian trail traversing the park from the northeast to southwest. The northeast entrance at Anaheim Street and N. Daisy Avenue is envisioned to be a gateway entrance to the proposed park.

Lighting would be provided to the soccer field from six standard field light poles, and low-level security lighting would be provided along the pedestrian path at 50 ft intervals. Lighting would be directed downward and shielded so that it is contained within the site boundaries.

The proposed project will provide a total of 66 parking spaces in a parking lot on the southwest end of the site and 28 parking spaces along De Forest Avenue to satisfy the City’s parking requirements.

GEOLOGICAL SETTING

The proposed project is located at the northern end of the Peninsular Range geomorphic province, a 900-mile (mi) long northwest-southeast-trending structural block that extends from the tip of Baja California to the Transverse Ranges and includes the Los Angeles Basin (Norris and Webb, 1976). The total width of the province is approximately 225 mi, with a maximum landbound width of 65 mi (Sharp, 1976). It contains extensive pre-Cretaceous (> 65 million years ago) igneous and metamorphic rocks covered by limited exposures of post-Cretaceous sedimentary deposits.

Specifically, the project is located within the Los Angeles Basin (Basin) adjacent to and northwest of the current channel of the San Gabriel River where it meets the Pacific Ocean. The Basin is a broad, gently sloping alluvial plain (gradient of 0.5 to 1 percent). It is bound on the north and northwest by hills and mountains of the Northern Peninsular and Transverse Ranges and on the south and west by the Pacific Ocean. The current sediment sources for the Basin are several rivers that flow into it. These include the Los Angeles, the San Gabriel, and the Santa Ana Rivers. As the gradient of the Basin is quite shallow, these rivers have not always flowed in their current channels; rather, they have flowed across the entire Basin, depositing sediment evenly across the plain. Approximately 20 million years ago the Basin was an undersea basin that collected mud and sand from the land, as well as plankton from the sea. Over the 20-million-year period, the Basin was filled with approximately 20,000 ft of sediment. This sediment is the source for many of the rich oil reserves in the area.

Pointi and Lajoie (1992) report that beneath the Long Beach area there is an almost continuous sequence of sediments (mostly marine) from the late Miocene through the late Pleistocene. This sequence records several sea level changes and a shallowing of the water beginning in the Pliocene. Pointi and Lajoie (1992) report that due to movement along faults, Signal Hill, located approximately 3 mi to the northwest, rose to its current height of 360 ft in a span of 220,000 years, an average uplift rate of approximately 0.56 millimeters (mm) per year, a rate much faster than the uplift rate of 0.35 mm per year for the Palos Verdes Hills, located 6 mi to the west. Signal Hill is part of a northwest-trending alignment of low hills and mesas that extends across the Los Angeles Coastal Plain between Newport Beach and Beverly Hills. This alignment of local highlands is the topographic expression of uplift, deformation, and faulting that has occurred along the Newport-Inglewood structural/fault zone (Barrows, 1974). The Newport-Inglewood structural/fault zone is immediately adjacent to the project area.

Within the project area, Saucedo et al. (2003) have mapped the project and surrounding area rocks as being entirely deposited within middle to late Pleistocene (300,000 to 10,000 years before the present [ybp]). Old Paralic Deposits are those sediments located in the transition area between the sea and the land and can include a mixture of deposits from the subtidal to beach deposits to colluvium and alluvium from the land. Paralic Deposits, as described by Saucedo et al. (2003), are mostly poorly sorted, moderately permeable, reddish-brown, interfingered strandline, beach, estuarine, and colluvial deposits that locally may include older alluvium. These deposits can be composed of siltstone, sandstone, and conglomerate; however, within the project area, they are mapped as being primarily silty. These deposits rest on the now-emergent wave-cut abrasion platforms preserved by regional uplift. Paralic Deposits can essentially be thought of as an interfingering of Pleistocene marine terrace deposits and older alluvium.

PALEOENVIRONMENT

Although the Holocene climate has in general been considerably more stable than the Late Pleistocene climate (Ditlevsen et al., 1996; GRIP, 1993), California has experienced relatively rapid changes in climatic and environmental conditions over the past 10,000 years. The economic and settlement history of Southern California can largely be understood as a response to the challenges and opportunities posed by this environment. For example, many archaeologists have linked periods of poor environmental conditions to the emergence of complex social organization among some Southern Californian hunter-gatherer societies. Two variables, sea levels and the incidence of drought and flooding, played significant roles in determining the distribution and abundance of important coastal and inland resources.

The sequence of changes in coastlines and habitats has been well-documented for the Southern California coast (Gallegos, 1987; Inman, 1983; Masters and Gallegos, 1997; Nardin et al., 1981). Sea levels rose rapidly following the end of the Ice Age. Along the southern coast during the Early Holocene, sea level rise created many lagoons and cobble beaches. Rising sea levels produced rich estuarine habitats and rich nearshore habitats, including rocky reefs and kelp beds. The climate has generally become more xeric since the last Ice Age (Axelrod, 1981; Heusser and Sirocko, 1997).

CURRENT LAND USE

The project area was previously occupied by railroad tracks of the Union Pacific Railroad. The project parcels are currently vacant but will be joined with Loma Vista Park through final design.

METHODS

LOCALITY SEARCH AND RESEARCH

A paleontological literature review encompassing the project site was conducted in May 2011 using unpublished reports, paleontological assessment and monitoring reports, field notes, published literature, and maps. For that study, a paleontological resource records search was conducted through the Los Angeles County Museum of Natural History (LACM). Paleontological resource locality forms housed in this institution record fossil localities in sediments equivalent in age to those on the proposed project. As geologic formations and units can be exposed over large geographic areas but contain similar lithologies and fossils, the literature review and fossil locality search includes areas well beyond the project area.

FIELD SURVEY

A pedestrian survey encompassing the project site was conducted by Paleontologist Steven Conkling in September 2010 and during the first week of December 2010. Mr. Conkling resurveyed the Drake Park Soccer Field Project area on January 22, 2013 to verify that conditions on the parcel had not change, and to re-examine geological exposures present within the project area. During the survey, bedrock exposures along the slope from Loma Vista Drive and Drake Park down to the project area were examined to identify exposures of fossiliferous sediments. The purpose of this survey was to confirm the accuracy of the geologic mapping and to identify whether any paleontological resources might be exposed on the surface. All areas to be impacted by the project were examined for fossil evidence. Parallel transects spaced approximately 10 meters apart were walked over portions of the project area, with intuitive deviations to examine exposures of rock.

REPORT OF FINDINGS

LOCALITY SEARCH AND RESEARCH

The LACM does not have any recorded vertebrate localities within the project area. However, the LACM does record numerous localities from the same or similar sedimentary deposits that occur within the project area.

Old Alluvial Fan and Valley Deposits and Old Paralic Deposits

Across the Los Angeles Basin, a veneer of Holocene sediments often overlies older Pleistocene sediments. This creates a situation where excavation into Holocene surficial sediments extends into Pleistocene sediments with a high paleontological sensitivity. The project area is mapped as being underlain by young Holocene sediments, but the results of the locality search demonstrate that fossils are relatively common.

The LACM records numerous localities in these sediments in the vicinity of the project. These localities have produced a “typical” suite of Rancholabrean land mammals, including bison, mammoth, diminutive antelope, horse, and giant ground sloth.

The LACM believes that shallow excavations in the uppermost few feet of the younger Quaternary alluvium exposed in portions of the project are not likely to uncover significant fossil vertebrate remains. Deeper excavations in the areas mapped as Quaternary alluvium that extend down toward older sedimentary deposits, however, may well encounter significant vertebrate fossils. Any excavations in the older Quaternary Alluvial Fan and Valley Deposits or Old Paralic Deposits may encounter significant to highly significant vertebrate fossils. Therefore, the LACM believes that, except for recent Quaternary alluvium, the paleontological sensitivity of the proposed project area is rated high. The LACM believes that any substantial excavations should be closely monitored to quickly and professionally collect any specimens without impeding development. Any fossils recovered during construction should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

FIELD SURVEY

The majority of the project area has been disturbed by development and contains elements of the modern built environment. No fossil resources were found in these areas; however, the potential to encounter unknown buried resources during construction is relatively high due to the nature of the underlying geology.

The project is located along the lower reach of the Los Angeles River, which crosses the Los Angeles Basin from north to south. The project area is typified by a low-lying topography.

Geologic mapping (Morton and Miller, 2006; Morton, 2004) indicates that sediments from the latest Quaternary are mapped as occurring within the project area. Table A lists the ages for the formations and units exposed within the study area.

Table A: Geologic Time Periods and Geologic Units within the Project Area

Epoch	Age (years)	Geologic Formation/Unit	Map Symbol
Quaternary Period			
Holocene	Less than 100 years	Artificial Fill	Af
Holocene	Less than 10,000	Young Alluvium	Qyf
Pleistocene	10,000–1.8 million	Old Alluvial Fan and Valley Deposits	Qof
Pleistocene	10,000–1.8 million	Old Paralic Deposits, silt	Qops

Artificial Fill (af)

Artificial fill is mapped in the project. This is consistent with the fact that the project is located in a developed area that has been substantially altered by human activity. Artificial fill consists of sediments that have been removed from one location and transported to another by humans. Sometimes the transportation distance can range from a few feet to dozens of miles. Composition is dependent on the source. When it is compacted and dense, it is known as “engineered fill,” but it can be unconsolidated and loosely compacted. Artificial fill will sometimes contain modern debris such as asphalt, wood, bricks, concrete, metal, glass, plastic, and even plant material. Depending on the area, thickness can be less than 1 ft or several hundred feet. Artificial fill can contain fossils, but these fossils have been removed from their original location and are thus out of context. They are not considered to be important for scientific study.

Young Alluvium (Qyf)

Young alluvium, also known as recent alluvium, can range in age from Recent to Latest Pleistocene. It is similar to older alluvium, but is usually located closer to an active stream channel. These deposits consist of loosely consolidated gravel, sand, and silt ranging from poorly sorted to well sorted, composed of mainly quartz, but also containing feldspar and biotite. The sand grains are generally subangular to subrounded, while the gravels and cobbles are rounded to well rounded. Color is usually yellow-brown to gray-brown and is somewhat dependent on the nearby, or upstream, geology. These sediments cover the majority of the project area. Young alluvium can contain remains of once-living things such as bones, shells, and plants; however, as these are less than 10,000 years old, not enough time has passed to mineralize the remains, and they are not considered to be “fossils.” In addition, most of the remains that are found are contemporaneous with modern species. Occasionally, fossils from older upstream formations are eroded out and transported to a new location. However, it is usually impossible to determine where the fossils originally came from.

Old Paralic Deposits and Old Alluvial Fan and Valley Deposits (Qof, Qops)

Paralic Deposits are marine- or nonmarine-derived sediments that came from an estuarine or swamp environment. Older alluvium is an alluvial deposit older than 10,000 years and is often called a nonmarine terrace deposit, as it is often the sediment contained within the stream terraces that are

above and flank the active stream channel. However, these sediments can also be found at depths below the active stream channel. These deposits consist of interbedded silt, clayey sand, and conglomeratic coarse-grained sands. Colors can vary from light yellows to browns and reds. The sand grains are generally subangular to subrounded, while the gravels and cobbles are rounded to well-rounded. Within the project area, these deposits are well formed along the Los Angeles River. Fossils have been collected in similar deposits from excavations for roads, housing developments, retention basins, and quarries in the Los Angeles Basin and vicinity (Lander, 2003; Jefferson, 1991a and 1991b; Conkling, 1997 and 1988; Miller, 1971). Remains of Rancholabrean animals (including elephant, horse, bison, camel, saber tooth cat, deer, and sloth) are known from these localities. The potential exists to encounter similar fossils in all Pleistocene alluvium.

SUMMARY AND RECOMMENDATIONS

There is a potential for paleontological resources to be unearthed during ground-disturbing activities at depths greater than 3 ft for the Drake Park Soccer Field Project. LSA recommends that all ground-disturbing construction activities and excavations to depths greater than 3 ft should take place under the supervision of a qualified paleontological monitor who shall be empowered to temporarily halt or redirect construction work in the event of a paleontological discovery.

However, the proposed project requires the import of approximately 5,932 cubic yards of fill material; no excavation or ground disturbance is required on site. Therefore, the Drake Park Soccer Field Project will not result in a substantial adverse change to any paleontological resource pursuant to CEQA, and any potential impacts to fossil resources will be maintained below a level of significance.

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APPENDIX D

SOIL REMEDIATION REPORT (PREPARED BY SCS ENGINEERING)

(FIGURES, TABLES, AND APPENDICES ON FILE WITH THE CITY)

AND

"NO FURTHER ACTION" LETTER

TECHNICAL REPORT
SOIL REMEDIATION
960 DEFOREST AVENUE
LONG BEACH, CALIFORNIA 90813

Prepared for:

Long Beach Redevelopment Agency

C/o Overland, Pacific, & Cutler, Inc.
100 West Broadway, Suite 500
Long Beach, CA 90802
(562) 304-2000

Prepared by:

SCS ENGINEERS
3900 Kilroy Airport Way, Suite 100
Long Beach, California 90806
(562) 426-9544

And

Mearns Consulting LLC
738 Ashland Avenue
Santa Monica, California 90405
(310) 396-9606

July 2009
File No. 01208197.00

This Technical Report for Soil Remediation for the property at 960 DeForest Avenue, Long Beach, California, dated July 2009, was prepared and reviewed by the following:

Jeffrey T. Sieg
Staff Geologist
SCS ENGINEERS

Kevin W. Green, P.G., R.E.A.
Project Director
SCS ENGINEERS

Dr. Susan Mearns, PhD, R.E.A.
Principal
MEARNS CONSULTING LLC

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LIMITATIONS/DISCLAIMER

This report has been prepared specifically for Overland, Pacific & Cutler, Inc., on behalf of the Long Beach Redevelopment Agency, with specific application to remediation of soils at property located at 960 DeForest Avenue in Long Beach, California. This report has been prepared in accordance with the care and skill generally exercised by reputable professionals, under similar circumstances, in this or similar localities. No other warranty, expressed or implied, is made as to the professional opinions presented herein. Third parties use this report at their own risk. SCS assumes no responsibility for the accuracy of information obtained from, compiled or provided by outside sources. Changes in site use and conditions may occur due to variations in rainfall, temperature, water usage, economic, or other factors. This report is not a legal opinion.

1 INTRODUCTION

SCS Engineers (SCS) was retained by Overland, Pacific & Cutler, Inc. on behalf of the Long Beach Redevelopment Agency to conduct remediation of soils at the former UPRR Bulk Terminal located at 960 DeForest Avenue, Long Beach, California (the "Property"). A map showing the location of the Property is provided as **Figure 1**.

This report documents soil remediation activities conducted at the Property under the oversight and approval of the Los Angeles Regional Water Quality Control Board (RWQCB). Remedial activities were conducted in accordance with workplan prepared by Mearns Consulting LLC (Mearns) titled *Remedial Action Plan, 960 DeForest Avenue, Long Beach, California 90813* (the "RAP") and SCS's *Proposal for Remediation Services*, dated January 30, 2009. The Workplan was approved by the RWQCB in a letter dated November 10, 2008.

2 BACKGROUND

The City of Long Beach acquired the Property in May 2007 using grant funds to add much needed open space to the underserved public in this area of low-income and very-low income residents of the City, as part of the Drake Chavez Greenbelt.

SITE HISTORICAL OPERATIONS

Prior to 1965 the Property was owned and operated by Pacific Electric Railway Company and used for electric railcar repair, maintenance and inspection (*Soil & Groundwater Remedial Investigation Report, 960 DeForest Avenue, Long Beach, California*; dated September 1999; prepared by ERM; prepared for Union Pacific Railroad Company).

Southern Pacific Transportation Company acquired the Property in 1965 and leased the Property to various entities whose primary operations were bulk transfer and storage of liquid petroleum and chemical products (ERM 1999).

Union Pacific Railroad Company (UPRR) acquired the Property in a merger of Southern Pacific Transportation Company in 1996 (ERM 1999).

CHEMICAL STORAGE AND DISTRIBUTION

Chemicals were stored in ten (10) aboveground storage tanks (ASTs) between 1967 – 1992 in an area of the Property referred to as the North AST Pad or North AST Area. This tank farm was constructed with a concrete and asphalt floor divided into secondary containment with cinder-block walls (ERM 1999).

An Overhead Pipe rack was used to transfer chemicals from 1967 – 1992. Ten product delivery pipes were installed and connected the Overhead Pipe rack to the North AST Pad (ERM 1999).

Approximately 18 to 26 ASTs were installed on a continuous concrete pad surrounded by a secondary-containment wall in 1980 and referred to as the South AST Area (ERM 1999).

DOCUMENTED RELEASES

Various environmental databases (Vista 1995) identify releases at the Property, including, but not limited to:

- A release of approximately 18,000 gallons of xylenes from underground piping near the Overhead Pipe rack in 1979,
- A spill of unknown quantity of petroleum product known as transmix (contains 2 percent benzene) from Tank No. 4 at the North AST Pad in 1990,
- A spill of approximately 50 to 100 gallons of propylene glycol methyl ether (1-methoxy-2-propanol) in 1991, and
- Releases of sulfuric acid on and near the South AST Pad, including a significant spill in 1991 (ERM 1999).

REGULATORY HISTORY

The LARWQCB has been the lead regulatory agency since at least 1984 (ERM 1999).

PREVIOUS INVESTIGATIONS

Various consultants, Kleinfelder & Associates in 1984, Osborne Geotechnical Engineering, Inc. in 1985 and 1988, Hydrologic Consultants, Inc. in 1990, Terranext in 1997 and ERM in 1999, 2004, 2005 and 2006 have documented the presence of chlorinated volatile organic compounds (VOCs) and aromatic VOCs (primarily xylenes) in the soils onsite and shallow groundwater (approximately 6-feet below ground surface) underlying the site (ERM 1999).

PREVIOUS REMEDIATION

Total petroleum hydrocarbon (TPH)-impacted soils associated with the transmix release in 1990 were excavated and removed from the Property in 2003 (*Health Risk Assessment, 960 DeForest Avenue, Long Beach, California*; dated March 2007; prepared by ERM; prepared for UPRR).

All ASTs, warehouses, infrastructure, pipe racks, concrete pads, berms, secondary containment, et cetera, were removed by UPRR's contractors in 1997 and 1998 (ERM 2007).

ERM, on behalf of UPRR, installed a soil vapor extraction (SVE) system in 2003 which operated until 2004 and was enhanced with thermal injection from 2004 to 2006 (ERM 2007). ERM estimates that over 60,000 pounds of contaminants have been removed from the site by the SVE (*Summary of Activities – January to June 2006, 960 DeForest Avenue, Long Beach, California, File No. 681, PCA No. 2048H*; dated August 7, 2006; prepared by ERM; prepared for UPRR).

The LARWQCB approved the decommissioning of the SVE system, by ERM, on behalf of UPRR, in May 2007.

CONFIRMATION SOIL MATRIX AND SOIL VAPOR SAMPLING

ERM collected soil vapor samples from 29 locations within the remediation area being treated by the SVE system, as the SVE system had reached asymptotic conditions in 2006. Additionally, ERM collected soil matrix samples at eight locations in an area where previous soil sampling had indicated concentrations of constituents exceeded their respective Preliminary Remediation Goals for industrial land uses. The data was used in a human health risk assessment (ERM 2007).

The Office of Environmental Health Hazard Assessment (OEHHA) reviewed the human health risk assessment (HRA) on behalf of the LARWQCB. OEHHA generated comments which were subsequently addressed by ERM. The HRA provided cleanup goals which were approved by OEHHA/LARWQCB and which were intended to address the remaining VOC-impacted soils onsite in the SVE target remediation area and those soils impacted by arsenic, lead, DDE and polycyclic aromatic hydrocarbons (PAHs).

3 GEOLOGIC, HYDROLOGIC, AND TOPOGRAPHIC INFORMATION

The Property is located at an elevation of approximately 10 feet above mean sea level in the Long Beach Plain, approximately one mile north of the Pacific Ocean. The site topography is relatively flat with a gentle slope to the west toward the Los Angeles River about 700 feet to the west. A residential neighborhood east of the Property and Los Angeles River flood control berm are at an elevation approximately 20 feet higher than site topography.

Geologic maps indicate that the soils in the area are Quaternary alluvium and coastal deposits of silts, sands, and gravel which are unconformable underlain by Late Pleistocene Lakewood Formation. These continental and/or marine sediments consist of gravel, sand, sandy silt, silt and clay with shale pebbles. The Lakewood Formation extends up to 100 feet below grade. Sediments below these belong to the Late Pleistocene San Pedro Formation.

The Property is underlain by Recent Alluvium, below which are Pleistocene deposits consisting of several hundred feet of unconsolidated, discontinuous, inter-fingering beds of sand, gravel, silt and clay (ERM 2007).

Data obtained from site investigation boreholes indicate that the uppermost 12 to 13 feet below ground surface (bgs) consists of predominately sandy soils with some silt and clay. Clay with silt is present below this depth to approximately 20 feet bgs, which is the maximum depth drilled (ERM 2007).

The property is located on the Coastal Plain of Los Angeles County. The first regional groundwater aquifer is within the Gage Aquifer within the Lakewood Formation. The top of this aquifer is approximately 60 feet below ground surface (bgs).

First groundwater encountered beneath the Property occurs at approximately 8 to 12 feet bgs, in a semi-perched water zone within the Recent Alluvium, perched above the clay layer (Kleinfelder 1984). Groundwater was encountered during excavation activities at a depth of approximately 10 feet bgs.

Regional groundwater flow is southerly towards the Pacific Ocean. Shallow water at the Property has been observed to flow variable directions over time (ERM 2003) and appears to be influenced by several local features, including:

- Tidal influences due to the proximity of the Pacific Ocean;
- Loss/gain from the buried stream channel / storm drain system located in the northern portion of the Property;
- Runoff and surface water infiltration along the lower margin of the bluff that runs along the eastern boundary of the Property; and
- Leakage from storm drains and sewer systems that traverse the Property.

GROUNDWATER QUALITY BENEATH THE SITE

Groundwater in Long Beach is withdrawn from the deeper Gage and Silverado Aquifers (ERM 2007). The City of Long Beach operates a water-well field that withdraws groundwater from these aquifer systems approximately 3 miles northeast of the Property, north of the Newport-Inglewood Structural Zone. This water is used for domestic and industrial purposes.

The Property is approximately 2 miles south of the Newport-Inglewood Structural Zone. The native waters of the Long Beach area south of this zone are historically known to be of inferior quality due to high sodium chloride and total dissolved solids (TDS) content. This Property also lies on the seaward side of the Dominguez Gap Barrier Project, a line of freshwater injection wells constructed to halt seawater intrusion. Due to saltwater intrusion, high levels of sodium and chloride in the Gage Aquifer have rendered much of the groundwater in the southern Dominguez Gap area relatively brackish and unfit for potable use (Poland and Sinnott 1959). Recent investigations report chloride concentrations in the Gage aquifer beneath the Property at over 15,000 milligrams per liter (mg/L) (Zargaryan 1998).

South of the Newport-Inglewood Structural Zone, the shallow, unconfined water bearing units (first water beneath this site and the Gaspur Aquifer), together with the uppermost, unconfined to partly confined water-bearing units of the Gage Aquifer, are reportedly in direct hydraulic continuity with ocean water in San Pedro Bay south of Long Beach (ERM 2007). A 1999 study showed the cyclic changes in water levels in wells at the Property generally matched ocean high tides and lows, with recorded tidal changes in two wells ranging from 0.05 to 0.15 feet (ERM 1999).

California State Water Resources Control Board Resolution (SWRCB) No. 88-63 specifies that all surface waters and groundwater of the State be protected as existing or potential sources of municipal and domestic supply (SWRCB 1998), with certain exceptions. Two of these exceptions apply to shallow groundwater at the Property:

- Shallow perched water exhibits TDS concentrations greater than 3,000 mg/L; and
- Shallow perched water yield is less than 200 gallons per day.

TDS was measured in groundwater samples from ten monitoring wells at the Property three times over a period of two years (ERM 1999). The average concentration of TDS over this time period was 3,827 mg/L. Yield was evaluated based on recharge rates measured in monitoring wells during purging prior to groundwater sampling. Five of the ten monitored wells purged dry before sampling. Measured rates of recharge equate to approximately four gallons per day.

An evaluation was conducted in 2005 to assess the potential impact of off-site sources on groundwater quality at the Property (ERM 2007). A portion of the evaluation included the sampling of selected groundwater wells for parameters associated with sanitary sewage. Fecal coliform was reported at concentrations ranging from non-detect to the maximum most probable number (MPN) per 100 milliliters of water of 100,000. The presence of high levels of fecal coliform in the groundwater monitoring wells located in close proximity to the storm and sanitary sewer lines traversing the Property indicate that the lines have been compromised. The lines could also be a conduit for the migration of contaminants from nearby properties onto the Property. Concentrations of other non-site related constituents such as methyl tert-butyl ether (MTBE) detected in site wells also indicate impact from off-site sources in the vicinity of the storm and sewer lines (ERM 2007).

As a result of sweater intrusion, high TDS, low yield, and the impact of leakage from storm drains and sewer systems that traverse the Property, groundwater beneath the Property is not suitable for beneficial use as a municipal or domestic supply of water (ERM 2007).

4 SOIL CLEANUP GOAL

The purpose of the remediation was to remove those soils that may be a human health risk for the proposed redevelopment of the Property as much needed open space to the underserved public in this area of low-income and very-low income residents of the City, as part of the Drake Chavez Greenbelt and/or the construction workers for the proposed redevelopment. In accordance with the OEHHA-approved HRA prepared by ERM as summarized in the RAP and via correspondence between SCS and Mearns, the risk-based cleanup goals for soils are summarized as follows:

PESTICIDE IMPACTED SOILS

DDE – 16 milligrams per kilogram (mg/kg)

This cleanup goal is provided in **Table 1** for comparison to analytical results of confirmation samples.

SEMI–VOC IMPACTED SOILS

Benzo(a)pyrene – 900 µg/kg
Naphthalene – 3,900 µg/kg

These cleanup goals are provided in **Table 1** for comparison with analytical results of confirmation samples.

METALS IMPACTED SOILS

Arsenic – 15.80 mg/kg
Lead – 150 mg/kg

These cleanup goals are provided in **Table 2** for comparison with analytical results of confirmation samples.

VOC IMPACTED SOILS

Benzene – 1,100 micrograms per kilogram (µg/kg)
1,1-Dichloroethene (1,1-DCE) – 16,000 µg/kg
Cis-1,2-Dichloroethene (cis-1,2-DCE) – 780,000 µg/kg
Ethylbenzene – 5,700 µg/kg
Naphthalene – 3,900 µg /kg
Tetrachloroethene (PCE) – 570 µg/kg
Toluene – 5,000,000 µg/kg
1,2,4-Trimethylbenzene – 47,990 µg/kg
1,3,5-Trimethylbenzene – 20,880 µg/kg
Vinyl chloride – 60 µg/kg
Xylene (total) – 4,500,000 µg/kg

These cleanup goals are provided in **Table 3** for comparison with analytical results of confirmation samples.

5 PRELIMINARY SCREENING OF METALS IMPACTED AREAS

As discussed above, previous sampling locations were not surveyed and SCS was reliant on maps provided by ERM in various reports as included in the RAP to identify areas of remedial excavation. In effort to identify and define the areas impacted by heavy metals, surface soil samples were collected and prepared in the field for screening using a Niton x-ray fluorescence (XRF) scanner. XRF screening for lead and arsenic is being increasingly used to facilitate field decisions on remediation sites under US EPA and Department of Toxic Substance Control

(DTSC) oversight. Please note the XRF data was used for screening only; analytical data was used for the final confirmation samples. The XRF results were useful in the field for determining where to continue excavating (obviously high results) and where to stop and collect samples for laboratory confirmation (low or borderline results). Samples were collected by SCS personal and relinquished to Gray Environmental, Inc. (Gray) of Vista, California for preparation and XRF screening. Samples were prepared by dehydrating and homogenizing each sample prior to encapsulating within DTSC-approved containers.

Preliminary sample locations were selected based on areas identified in maps provided by ERM in various reports as included in the RAP and four "step outs" within an 8-foot radius at each location. Based on XRF screening results exceeding the clean-up goals, additional "step out" samples were collected. The XRF results were used to estimate the location and areas of heavy metals impacted soils. Additionally, selected samples were relinquished for analysis at a state-certified fixed laboratory. The fixed laboratory analyses were used to confirm the XRF screening results.

Surface samples selected for laboratory analysis of heavy metals were submitted to Chemtek Environmental Laboratories, Inc. (Chemtek) of Santa Fe Springs, California, a California Department of Health Services certified laboratory. Samples were tracked from the point of collection through the laboratory using proper chain-of-custody protocol. Selected samples were analyzed for arsenic and lead using EPA Method 7000. The soil matrix analytical results of the final confirmation samples collected from the sidewalls and base of the excavations to remove metals-impacted soils are summarized in **Table 2**.

A site map depicting areas of metals impact, identified in maps provided by ERM in various reports as included in the RAP, is provided in **Figure 2.** Samples collected for XRF screening at locations SB10, SB61 and SB4, location SB7, location SB11, location SB26, location SB33, location SB60, location SB39, and location SB44 are depicted in **Figures 3, 4, 5, 6, 7, 8, 9, and 10,** respectively. The analytical results of the XRF screening and soil matrix corroboration testing are included in **Appendix B**.

6 REMEDIATION AND FIELD ACTIVITIES

Implementation of remedial excavations began in March 2009. Based on the estimated volume of soil excavated and exploratory pothole sample results from areas SV1, SV2, SV13, SV16, and SV26, the total volume of soils to be excavated exceeded the original estimate as provided in the RAP. Further excavation of impacted soils was delayed pending client approval of the additional scope and costs for this project. Final remedial excavation activities were conducted in May 2009.

SCS contracted with American Integrated Services, Inc. (AIS) of Wilmington, California to provide equipment and operators to conduct excavation activities under the direction of SCS personnel. A discussion of each remedial excavation area and material and methods is provided below.

PESTICIDE IMPACTED SOILS

Based on soil samples with DDE concentrations above the cleanup goal, identified in the OEHHA-approved HRA prepared by ERM as summarized in the RAP, five locations were subject to remediation. Remedial excavation areas were designated based on their previous boring designation, and were identified as SB-28, SB-31, SB-34, SB-37, and SB-39. Each excavation was approximately 5 by 5 feet in area to a depth of approximately 3 feet prior to sampling. A total of five samples were collected and analyzed from each excavation; one from each sidewall and one from the bottom of the excavations.

Confirmation soil samples were collected into laboratory-supplied 4-ounce glass jars. Samples were submitted to Chemtek for laboratory analysis of organochlorine pesticides. Samples were tracked from the point of collection through the laboratory using proper chain-of-custody protocol. Soil samples were analyzed for pesticides using EPA Method 8081A. A summary of analytical results for confirmation soil samples is provided in **Table 1.** All soils with DDE in concentrations greater than the risk-based cleanup goal were removed from the Property.

A site map depicting pesticide impacted areas as identified in maps provided by ERM in various reports as included in the RAP is provided in **Figure 2.** Samples collected for confirmation sampling of excavation areas SB-28 and SB-31, SB-34 and SB-37, and SB-39 are depicted in **Figures 7, 8, and 9,** respectively.

Areas SB-28 and SB39 were also identified in maps provided by ERM in various reports included in the RAP as having been impacted by semi-VOCs and metals, respectively. Additional excavation activities and sampling protocols for these locations are discussed below.

SEMI-VOC IMPACTED SOILS

Based on soil samples with semi-VOC impacts above cleanup goals (specifically benzo(a)pyrene and naphthalene), identified in the OEHHA-approved HRA prepared by ERM as summarized in the RAP, seven locations were identified for remedial excavation. However, the locations of borings P12, P14, and P1 were not able to be located based on the maps provided by ERM, therefore it cannot be confirmed that these areas were included in the remediation activities. Semi-VOC remedial excavation areas were designated based on their previous boring designations, as SB-25, SB-28, SB-47, and SB-54. With the exception of excavation area SB25, each was approximately 5 by 5 feet in area to a depth of approximately 6 feet prior to sampling. A total of five samples were collected and analyzed from each excavation; one from each sidewall and one from the bottom. Excavation area SB-25 was located over a 41-foot wide reinforced concrete storm channel that was buried approximately 2 feet below grade; therefore, this excavation was a maximum of 2 feet in depth. Based on preliminary analytical results the area of excavation for SB-25 was extended easterly from sidewall sample location SB25-EX3, however, final laboratory results showed that all samples collected from this excavation area achieved the cleanup goals.

Confirmation soil samples were collected into laboratory-supplied 4-ounce glass jars. Samples were submitted to Chemtek for laboratory analysis of semi-VOCs using EPA Method 8270C. Samples were tracked from the point of collection through the laboratory using proper chain-of-custody protocol. A summary of analytical results for confirmation soil samples is provided in **Table 1.**

A site map depicting semi-VOC impacted areas as identified in maps provided by ERM in various reports as included in the RAP is provided in **Figure 2.** Confirmation samples from excavation areas SB-25, SB-28, SB-47, and SB-54 are depicted in **Figures 11, 7, 5, and 12,** respectively.

METALS IMPACTED SOILS

Based on soil samples with heavy metals above cleanup goals (specifically arsenic and lead), identified in the OEHHA-approved HRA prepared by ERM as summarized in the RAP, 12 locations were identified for remedial excavation. The locations of borings P1 and S57 were not able to be located based on the maps provided by ERM, therefore it cannot be confirmed that these areas were included in the remediation activities. Metal excavation areas were designated, based on previous boring designation, as SB-4, SB-7, SB-9, SB-10, SB-11, SB-26, SB-33, SB-39, SB-44, SB-60, and SB-61. A summary of the final confirmation soil matrix sample results for metals is provided in **Table 2**. A site map depicting metals impacted areas, as identified in the OEHHA-approved HRA prepared by ERM, as summarized in the RAP, is provided in **Figure 2.**

- **Excavation Areas SB-4, SB-10, and SB-61 –** Based on XRF screening and analytical results of soil samples, the excavation of areas SB-4, SB-10, and SB-61 eventually merged into a single excavation. Based on analytical results of confirmation samples, collected from sidewalls and the bottom of the excavation, the excavation was expanded to an area of approximately 3,793 square feet and to depths between approximately 5 and 7 feet bgs. Soil samples collected from the sidewalls and bottom of the expanded excavation confirmed that clean-up goals for lead and arsenic ultimately were achieved. Locations of confirmation samples collected within the excavation are depicted in **Figure 3.**

- **Excavation Area SB-7** – Based on XRF screening and confirmation soil sample results, the remedial excavation of this area was expanded to approximately 681 square feet and a maximum depth of approximately 7 feet bgs. Soil samples were collected from the sidewalls and bottom of the excavation to confirm that the excavation achieved clean-up goals as specified above. Locations of confirmation samples collected within the excavation are depicted in **Figure 4.**

- **Excavation Area SB-9** – The location of this area, as identified in maps provided by ERM in various reports as included in the RAP, was within the excavation area for VOC impacted soils (CSB1 through CSB6). Therefore, this area was excavated with the VOC impacted soils. The location of area SB-9 is depicted in **Figure 2.**

- **Excavation Area SB-11 –** Based on confirmation sample results, the area of this excavation was expanded to approximately 171 square feet and a depth of approximately 10 feet bgs. Soil samples were collected from the sidewalls and bottom of the excavation to confirm that the excavation achieved clean-up goals as specified above. The locations of confirmation samples collected within the excavation are depicted in **Figure 5.**

- **Excavation Area SB-26** – XRF screening and confirmatory laboratory analysis of soil samples did not identify arsenic and lead above clean-up goals in this area. Furthermore, area SB-26 was partially located within the excavation area CSB1 through CSB6 for VOC impacted soils. The location of area SB-26 is depicted in **Figure 6.**

- **Excavation Area SB-33** – Based on XRF screening results, an excavation area of 25 square feet (5 by 5 feet) to a depth of 5 feet bgs was conducted in the vicinity of the surface "delineation" sample SB33-D2. Soil samples collected from the sidewalls and bottom of the excavation confirmed that clean-up goals for lead and arsenic were achieved. Locations of confirmation samples collected within the excavation are depicted in **Figure 7.**

- **Excavation Area SB-39** – Based on XRF screening results, four excavations were conducted in the "SB-39" area. Two locations (SB39-D6 and SB39-D7) were selected for shallow excavation and sampling ("potholing") to a depth of 1.5 feet bgs; one soil sample was collected at the bottom of each excavation. The analytical results from these "pothole" samples (designated SB39-PH1-1.5 and SB39-PH2-1.5) showed that cleanup goals were met and additional excavation and sampling was not conducted.

  The SB39-EX1 excavation was approximately 40 square feet in area and 5 feet in depth; the SB39-EX2 excavation was approximately 25 square feet in area and 4 feet in depth. Confirmation soil samples collected from the bottom and sidewalls of each exploratory pothole excavation and from the bottom and sidewall of each of the excavations confirmed that the excavations achieved clean-up goals as specified above. Locations of confirmation samples collected within the excavations are depicted in **Figure 9.**

- **Excavation Area SB-44** – Based on data from ERM as summarized in the RAP which showed arsenic at 16.3 mg/kg at 1.33 feet in depth, a 5- by 5-foot area to a depth of 5 feet was excavated. The XRF screening indicated 97 mg/kg of arsenic; therefore this excavation was extended to 10 feet bgs. Soil samples were collected from the sidewalls and bottom of the excavation to confirm that the excavation achieved clean-up goals. Locations of confirmation samples collected within the excavation are depicted in **Figure 10.**

- **Excavation Area SB-60** – Based on data from ERM as summarized in the RAP which showed arsenic at 66.3 mg/kg at 1.25 feet in depth, an excavation area of 25 square feet (5 by 5 feet) to a depth of 5 feet bgs was conducted in the vicinity of the surface delineation sample designated SB60-D1. Soil samples collected from the sidewalls and

bottom of the excavation confirmed that clean-up goals were achieved. Locations of confirmation samples collected within the excavation are depicted in **Figure 8.**

Confirmation soil samples were collected into laboratory-supplied 4-ounce glass jars. Samples were submitted to Chemtek for laboratory analysis of arsenic and lead. Samples were tracked from the point of collection through the laboratory using proper chain-of-custody protocol. Soil samples were analyzed for arsenic and lead using EPA Method 7000.

VOC IMPACTED SOILS

Based on samples with elevated VOCs, identified in the OEHHA-approved HRA prepared by ERM as summarized in the RAP, six locations were selected for remedial excavation. Excavation areas were designated based respectively on their previous boring designation. One area was based on six soil boring locations designated CSB-1 through CSB-6, the proposed excavation area (specified in the RAP) was 5,000 square-feet to a depth of 10 feet bgs. Five areas were based on soil vapor samples designated SV1, SV2, SV13, SV16, and SB26, the proposed excavation area (specified in the RAP) for each location was 25 square feet to a depth of 10 feet bgs. A site map depicting the areas of excavation for VOC impacted soils is provided in **Figure 2.**

- **Excavation Area CSB1 through CSB6** – Based on analytical results of soil samples, the area of the excavation was extended past the area specified in the RAP. This excavation was extended to an area of approximately 7,734 square feet and to a maximum depth of approximately 10 feet bgs. Soil samples were collected from the sidewalls and bottom of the excavation to confirm that the excavation achieved clean-up goals. Note that the maximum depth of excavation was approximately 10 feet bgs, the depth of groundwater. Locations of confirmation samples collected within the excavation are depicted in **Figure 6.**

- **Excavation Areas SV1, SV2, SV13, SV16, and SV26** – Prior to excavation, each of these areas were "potholed" with samples collected at approximately 5 to 6 feet bgs. Based on analytical results of these samples, it was determined that each area would require further excavation and confirmation sampling.

    - Based on the analytical results of confirmation soil samples, excavations SV1, SV13, and SV16 were expanded and commingled into a single excavation area of approximately 817 square feet to a maximum depth of approximately 10 feet bgs. Groundwater was observed infiltrating into the bottom of the excavation. Confirmation samples were collected from the sidewalls and bottom of the excavations as depicted in **Figure 11.**

    - Based on the analytical results of confirmation samples, excavation area SV26 was expanded to an area of approximately 398 square feet and to a maximum depth of approximately 10 feet bgs. Groundwater was observed infiltrating into the bottom of the excavation. The area of excavation was restricted from

advancing easterly due to a storm channel encountered approximately 2 feet bgs and extending below 10 feet bgs. Based on analytical results of sidewall sample EXSV26-2, collected prior to encountering the storm drain, an area east of the storm channel was potholed and a soil sample was collected and analyzed from approximately 5.5 feet bgs to confirm that the VOC impacts did not extend past the storm drain. Excluding the eastern sidewall, soil samples were collected from the sidewalls and bottom of the excavation to confirm that the excavation achieved clean-up goals as specified above. Locations of confirmation samples collected within the excavation are depicted in **Figure 11.**

- The excavation of area SB2 was conducted in accordance with the RAP, was of approximately 25 square feet in area to a depth of approximately 10 feet bgs. Groundwater was observed infiltrating into the bottom of the excavation. Soil samples were collected from the sidewalls and bottom of the excavation to confirm that the excavation achieved clean-up goals as specified above. Locations of confirmation samples collected within the excavation are depicted in **Figure 11.**

Confirmation soil samples were collected into laboratory-supplied 4-ounce glass jars and immediately relinquished to an on-site mobile laboratory operated by Jones Environmental Laboratories, Inc. (JEL) of Fullerton, California, a California Department of Health Services certified laboratory. Samples were tracked from the point of collection through the laboratory using proper chain-of-custody protocol. Soil samples were immediately analyzed for VOCs using EPA Method 8260B.

GPS LOCATION OF EXCAVATION AREAS

The central locations of each of the main areas of excavation were surveyed using a hand-held Garmin global positioning satellite (GPS) unit. The latitude and longitude coordinates of each of the areas of excavation are documented in **Table 4.**

STOCKPILE SAMPLING

Composite soil samples of the stockpiles were collected and analyzed. As required by the accepting disposal facility, twelve stockpile soil samples were collected and analyzed for total petroleum hydrocarbons by EPA Method 8015M, total recoverable petroleum hydrocarbons by EPA Method 418.1, Title 22 metals by EPA Method 7000, VOCs by EPA Method 8260B, and semi-VOCs by EPA Method 8270B.

Additionally two samples were collected from overburden soil stockpiles generated from the upper 3 feet of excavation area CSB1 through CSB6. The samples were analyzed for VOCs by EPA Method 8260B. Each of the “overburden” soil stockpiles contained detectable concentrations of VOCs and was therefore disposed of with the other stockpiles.

AIR MONITORING

In accordance with South Coast Air Quality Management District (AQMD) Rule 1166, excavated soil was monitored for VOCs approximately every 15 minutes, during excavation activities, using a photo-ionization detector (PID). No concentrations of VOCs were detected in the excavated soils above the 50 parts per million AQMD limit. In accordance with the AQMD approved permit, an 1166 Monitoring Report will be submitted to AQMD and a copy is enclosed with this report.

GROUNDWATER WELLS

On June 21, 2009, under the oversight of SCS, BC2 Environmental of Orange, California (BC2) conducted groundwater monitoring well abandonment using a hollow stem auger drill rig. Eleven groundwater monitoring wells were identified in the RAP for abandonment. With the exception of five wells, each well was abandoned as specified in the Groundwater Monitoring Well Abandonment Workplan (the "Workplan"), prepared by SCS, dated March 10, 2009 pursuant to the approval of the RAP by the LARWQCB (November 10, 2008). The necessary permit for groundwater well abandonment/destruction was obtained from the City of Long Beach Department of Human Health Services (DHHS) prior to abandonment activities.

Groundwater monitoring wells designated MWD, MWE, MWH, MWI, MWJ, and MWK were constructed of PVC and abandoned as specified in the Workplan. The casings of each of these wells were pressure grouted using cement/bentonite slurry (approximately 5 percent by volume). After each well was slurry filled, the well boxes were removed and the upper 5 feet of casing was over drilled using 10-inch diameter auger. Each boring was backfilled using cement/bentonite grout. Soil cuttings generated during drilling were incorporated into stockpiles generated during remedial excavations.

Groundwater monitoring wells MWA, MWC, MWF, and MWG were constructed of stainless steel casing and could not be over drilled. Each well was pressure grouted using a cement/bentonite slurry (approximately 5 percent by volume) to ensure that the filter pack was slurry filled. After each well was slurry filled, the well boxes and entire casing of the wells was pulled out of the ground using the drill rig main line and winch. Any remaining void was filled to the surface using additional cement/bentonite grout.

Groundwater monitoring well MWB was destroyed during the remedial excavation of the area designated CSB1-6. The well was observed to be constructed of stainless steel. The entire casing of the well was removed which was confirmed by observing solid and perforated casing with an end cap attached. The area in which this well was located was backfilled with clean import material, as described above.

Appendix A of this report provides the following documentation:

- DHHS-approved permit for well destruction.
- A map, developed by ERM, showing the locations of the monitoring wells.

- Summary table showing the GPS locations, total depth, depth to groundwater, and casing material for each of the wells.
- Driller's logs, prepared by BC2, documenting the destruction of the wells.

7 ANALYTICAL RESULTS

CONFIRMATION SAMPLES

Chemtek and JEL laboratory reports including analytical results, QA/QC and chain-of-custody documentation are provided in **Appendix B**.

Confirmation soil samples were collected from sidewalls and bottoms of each excavation. The excavations and confirmation sample locations are depicted in **Figures 3 through 12**. The results of confirmation samples analyzed for pesticides and semi-VOCs are summarized in **Table 1**. The results of confirmation samples analyzed for arsenic and lead are summarized in **Table 2**. The results of confirmation samples analyzed for VOCs are summarized in **Table 3**.

As shown in **Table 1**, pesticides were not detected in any of the samples analyzed and with the exception of sample SB25-EX6, benzo(a)pyrene and naphthalene were not detected in any of the samples analyzed. Benzo(a)pyrene was detected in sample SB25-EX6 at a concentration of 432 µg/kg; below the clean-up goal of 900 µg/kg.

As shown in **Table 2**, soil samples collected and analyzed from the arsenic and lead excavations confirm that the excavations were expanded until clean-up goals were achieved.

As shown in **Table 3**, soil samples collected and analyzed from the sidewalls and bottom of VOC-impacted area CSB1 through CSB6 confirm that clean-up goals were achieved in this area.

As shown in **Table 3**, soil samples collected and analyzed from the sidewalls of VOC-impacted areas SV1, SV2, SV13, SV16, and SV26 confirm that the excavations were expanded laterally until the clean-up goals were achieved. As stated above, the excavation areas for SV1, SV13, and SV16 were expanded into a single excavation. Soil samples collected from the bottoms of excavation areas SV1, SV2, SV13, SV16, and SV26 (at 10 feet bgs) contained VOCs at concentrations exceeding their respective clean-up goals; however, these excavations could not be advanced past 10 feet bgs once groundwater was observed.

8 SOIL DISPOSAL

The stockpiles of metals and VOC-impacted soils were loaded into trucks and transported under non-hazardous waste manifests to Western Environmental, Inc. in Mecca, California. Based on weight certificates received from TPS, approximately 5,037.92 tons of impacted soils were removed from the Property and transported for treatment/disposal. Copies of manifests and weight certificates are provided in **Appendix C**.

9 BACKFILL AND COMPACTION

Remedial excavations were backfilled with material from two sources:

- Native "virgin" material provided by the Hanson Aggregates West, Inc. (Hanson) quarry in Corona, California. A letter certifying that material provided by Hanson is native "virgin" material is provided in **Appendix D.**

- Clean "borrow" material from a former UCLA sorority house site located at 720-726 Hilgard Avenue (Hilgard) in Santa Monica, California. Soil samples were collected and analyzed from the Hilgard source per the requirements of the Department of Toxic Substance Control (DTSC) guidelines for school sites. Analytical results of soil samples from the Hilgard site are provided in **Appendix D.**

Excavations were backfilled and compacted to 90 percent relative dry density as determined by ASTM D1557. A copy of the *Compaction Report on Backfill of Excavations*, prepared by GeoBase, Inc. and dated June 29, 2009, is provided in **Appendix E**.

10 SUMMARY

In March and May 2009, remedial activities at the Property were conducted in accordance with the RWQCB-approved RAP. Remediation at the Property consisted of removal of pesticide, semi-VOC, metals, and VOC impacted soil using an excavator and/or backhoe. Results of remedial activities include the following:

- With the exception of VOCs in three bottom samples (10 feet bgs), analytical results of confirmation samples show that cleanup goals were achieved for constituents of concern.

- Approximately 5,037.92 tons of pesticide, semi-VOC, metals, and VOC-impacted soils were excavated and transported to the Western Environmental, Inc. in Mecca, California for treatment/disposal.

- All excavations were backfilled with clean imported soil and compacted to a minimum of 90 percent dry density as determined by ASTM D1557.

11 RECOMMENDATIONS

Based on the information and conclusions outlined above, on behalf of the Long Beach Redevelopment Agency, SCS and Mearns respectfully recommend and request that the RWQCB issue a "No Further Action" letter with respect to the Property.

12 REFERENCES

CDWR. 1961. p4. In the area of the site, the Gage aquifer is found at depths between 130 to 140 feet bgs, and the Silverado Aquifer begins at a depth of about 200 feet bgs (*cited within ERM 2007*).

Environmental Resources Management (ERM). September 1999. Soil & Groundwater Remedial Investigation Report, 960 DeForest Avenue, Long Beach, California.

ERM. June 2003. 2002 Annual Groundwater Monitoring Report, 960 DeForest Avenue, Long Beach, California (*cited within ERM 2007*).

ERM. August 7, 2006. Summary of Activities – January to June 2006, 960 DeForest Avenue, Long Beach, California, File No. 681, PCA No. 2048H.

ERM. March 2007. Health Risk Assessment, 960 DeForest Avenue, Long Beach, California.

J.H. Kleinfelder & Associates (Kleinfelder). 1984. Preliminary Pre-Purchase Environmental Assessment, Charter Terminal, Long Beach, California (*cited within ERM 2007*).

Poland, J.F., and Allen Sinnott (Poland and Sinnott). 1959. Hydrology of the Long Beach-Santa Ana Area, California. United States Geological Survey Water Supply Paper 1471 (*cited within ERM 2007*).

Randell, D.H., J.B. Reardon, J.A. Hileman, T. Matuschka, G.C. Liang, A.I. Khan, and J. LaViolette (Randell et al.). 1983. Geology of the City of Long Beach, California. Association of Engineering Geologists Bulletin volume 20, number 1 (*cited within ERM 2007*).

Zargaryan, A. (Zargaryan). 1998. Dominguez Gap Barrier Project Hydrogeological Operations Report, June 1996 – May 1997. Los Angeles County Department of Public Works, Hydraulic/water Conservation District (*cited within ERM 2007*).

APPENDIX E

DRAKE PARK GREENBELT DRAINAGE MEMORANDUM

Ashba Engineers Ltd.
P.O. Box 90833
Long Beach, California 90809-0833
T: (562) 989-9154
F: 989-9194
E: barbara@ashbaengineers.com

Memo

To: Laurie Martz, Landscape Architect

From : Barbara J. Ashba P.E.

Date: January 10, 2013

Re: Drake Park Greenbelt-Drainage

==========

It is our understanding that LSA has requested information on the drainage at the site of the proposed Drake Park Greenbelt. This we assume is to address issues which might be raised in a CEQA review.

Although the design is in the preliminary stages at this time, we can provide some of the information along with our design intent at this stage.

The contributory drainage area is approximately 12.74 acres. This is basically the old railroad right of way together with a portion of De Forest Ave from the Pump Station south to Ceramic Bldg. This is determined based on the aerial survey. Except for De Forest Ave. the area is pervious and unimproved.

Based on a 50-year frequency storm an estimated 21.32 cubic feet per second of runoff is expected. This is based on Los Angeles County Department of Public Works Hydrologic Method Addendum to the 1991 Hydrology/Sedimentation Manual, June 2002 and the modified rational method, MODRAT. All of this will currently find its way to the Pump Station fore bay and will be pumped to the Los Angeles River.

The intended design is to continue this drainage pattern. The site design will employ as much landscaping and pervious materials as are allowed. Grading will continue the existing trend of sloping from the toe of the existing slope supporting Loma Vista Drive north toward the northerly property line.

Adjacent to this property line the Los Angeles County Flood Control District has constructed a large storm drain system. This replaces the old slough/ditch which previously drained the area. Inlets were provided along its length to accept runoff from the project site and also from the areas to north of our site.

The concept at this time is to provide a Vegetated Swale Filter along the northerly property line to convey runoff to these inlet points. Also employed upstream of this swale would be Vegetated Strip Filter and Biorention areas to filter and infiltration as much runoff as the soils will allow. A minimum of 3452 cubic feet of runoff is to be treated in this manner as determined by Los Angeles County Department of Public Works Development Planning for Storm Water Management A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), May 2000, Appendix A. Once soil capacity limits are reached overflow to the Swale will discharge to overflow outlets using the existing point of connections in the LACFCD storm drain line.

Since the proposed design will employ sump conditions a 50-year frequency of design is used in conformance with Los Angeles County Hydraulic Design Manual. Design BMPs such as the Vegetated Swale and Biorention areas will be based on Los Angeles County Department of Public Works Stormwater Best Management Practice Design and Maintenance Manual, May 2009.

Since the site disturbance will be greater than 1 acre, a Storm Water Pollution Prevention Plan will be developed in accordance with the requirement of the State of California Regional Water Quality Control Board NPDES Permit, by a Qualified SWPPP Developer, QSD. The intent is to prevent construction dirt, materials and debris from entering the runoff stream and being discharge to the ocean. The application will be filed in the State SMART system online, and maintained thru the end of construction.

APPENDIX F

NOISE MODELING WORKSHEETS

TABLE Existing-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Anaheim Street West of Oregon Avenue
NOTES: Project Name - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19200 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.64

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
56.2	116.1	247.6	532.3

TABLE Existing-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Anaheim Street between Oregon Avenue and Daisy Avenue
NOTES: Project Name - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18700 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.53

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
55.3	114.1	243.3	523.0

TABLE Existing-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Anaheim Street East of Daisy Street
NOTES: Project Name - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
54.2	111.7	238.1	511.8

TABLE Existing-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 11th Street (Loma Vista) West of Maine Avenue
NOTES: Project Name - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 350 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 49.63

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 11th Street between Maine Avenue and Daisy Avenue
NOTES: Project Name - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 350 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 49.63

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 11th Street East of Daisy Street
NOTES: Project Name - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 430 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 50.53

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 8th Street (Loma Vista) West of Maine Avenue
NOTES: Project Name - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 420 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 50.43

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 8th Street between Maine Avenue and Daisy Street
NOTES: Project Name - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 910 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 53.78

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 8th Street East of Daisy Street
NOTES: Project Name - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1400 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.65

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	61.8

TABLE Existing-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 7th Street West of Daisy Street
NOTES: Project Name - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.48

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	104.5	223.9

TABLE Existing-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 7th Street East of Daisy Street
NOTES: Project Name - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7100 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.55

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	105.5	226.0

TABLE Existing-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 6th Street West of Daisy Street
NOTES: Project Name - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5500 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	89.2	190.8

TABLE Existing-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 6th Street East of Daisy Street
NOTES: Project Name - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5100 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.11

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	84.9	181.4

TABLE Existing-14
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Oregon Avenue North of Anaheim Street
NOTES: Project Name - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1200 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.99

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	55.9

TABLE Existing-15
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Oregon Avenue South of Anaheim Street
NOTES: Project Name - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 670 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 52.45

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing-16
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Loma Vista Drive North of 11th Street
NOTES: Project Name - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 650 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 52.32

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing-17
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Maine Avenue between 11th Street and 8th Street
NOTES: Project Name - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 470 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 50.91

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing-18
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Maine Avenue South of 8th Street
NOTES: Project Name - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 370 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 49.88

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing-19
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street North of Anaheim Street
NOTES: Project Name - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 650 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 53.74

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing-20
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street between Anaheim Street and 11th Street
NOTES: Project Name - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1800 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 58.17

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	90.7

TABLE Existing-21
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street between 11th Street and 8th Street
NOTES: Project Name - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 970 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.48

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	60.2

TABLE Existing-22
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street between 8th Street and 7th Street
NOTES: Project Name - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1200 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.41

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	69.3

TABLE Existing-23
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street between 7th Street and 6th Street
NOTES: Project Name - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1200 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.41

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	69.3

TABLE Existing-24
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street South of 6th Street
NOTES: Project Name - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1200 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.41

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	69.3

TABLE Existing Plus Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Anaheim Street West of Oregon Avenue
NOTES: Project Name - Existing Plus Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.82

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
57.6	119.2	254.4	546.9

TABLE Existing Plus Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Anaheim Street between Oregon Avenue and Daisy Avenue
NOTES: Project Name - Existing Plus Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.62

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
56.0	115.7	246.8	530.4

TABLE Existing Plus Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Anaheim Street East of Daisy Street
NOTES: Project Name - Existing Plus Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18300 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.43

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
54.6	112.5	239.9	515.5

TABLE Existing Plus Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 11th Street (Loma Vista) West of Maine Avenue
NOTES: Project Name - Existing Plus Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1100 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	52.7

TABLE Existing Plus Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 11th Street between Maine Avenue and Daisy Avenue
NOTES: Project Name - Existing Plus Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1100 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	52.7

TABLE Existing Plus Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 11th Street East of Daisy Street
NOTES: Project Name - Existing Plus Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 490 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 51.10

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing Plus Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 8th Street (Loma Vista) West of Maine Avenue
NOTES: Project Name - Existing Plus Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 860 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 53.54

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing Plus Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 8th Street between Maine Avenue and Daisy Street
NOTES: Project Name - Existing Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1400 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.65

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	61.8

TABLE Existing Plus Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 8th Street East of Daisy Street
NOTES: Project Name - Existing Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1500 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	64.7

TABLE Existing Plus Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 7th Street West of Daisy Street
NOTES: Project Name - Existing Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.48

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	104.5	223.9

TABLE Existing Plus Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 7th Street East of Daisy Street
NOTES: Project Name - Existing Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7200 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	106.5	228.2

TABLE Existing Plus Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 6th Street West of Daisy Street
NOTES: Project Name - Existing Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5500 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	89.2	190.8

TABLE Existing Plus Project-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 6th Street East of Daisy Street
NOTES: Project Name - Existing Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5300 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.28

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	87.1	186.1

TABLE Existing Plus Project-14
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Oregon Avenue North of Anaheim Street
NOTES: Project Name - Existing Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1200 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.99

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	55.9

TABLE Existing Plus Project-15
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Oregon Avenue South of Anaheim Street
NOTES: Project Name - Existing Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1100 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	52.7

TABLE Existing Plus Project-16
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Loma Vista Drive North of 11th Street
NOTES: Project Name - Existing Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 650 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 52.32

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing Plus Project-17
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Maine Avenue between 11th Street and 8th Street
NOTES: Project Name - Existing Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 470 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 50.91

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing Plus Project-18
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Maine Avenue South of 8th Street
NOTES: Project Name - Existing Plus Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 370 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 49.88

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing Plus Project-19
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street North of Anaheim Street
NOTES: Project Name - Existing Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 770 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.48

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	51.7

TABLE Existing Plus Project-20
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street between Anaheim Street and 11th Street
NOTES: Project Name - Existing Plus Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2500 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.59

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	52.6	112.8

TABLE Existing Plus Project-21
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street between 11th Street and 8th Street
NOTES: Project Name - Existing Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 970 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.48

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	60.2

TABLE Existing Plus Project-22
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street between 8th Street and 7th Street
NOTES: Project Name - Existing Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1500 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.37

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	80.4

TABLE Existing Plus Project-23
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street between 7th Street and 6th Street
NOTES: Project Name - Existing Plus Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1400 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.07

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	76.8

TABLE Existing Plus Project-24
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street South of 6th Street
NOTES: Project Name - Existing Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1200 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.41

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	69.3

TABLE Cumulative-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Anaheim Street West of Oregon Avenue
NOTES: Project Name - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21200 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.07

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
59.6	123.8	264.4	568.6

TABLE Cumulative-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Anaheim Street between Oregon Avenue and Daisy Avenue
NOTES: Project Name - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
58.6	121.5	259.5	557.8

TABLE Cumulative-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Anaheim Street East of Daisy Street
NOTES: Project Name - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19900 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.80

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
57.4	118.8	253.6	545.1

TABLE Cumulative-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 11th Street (Loma Vista) West of Maine Avenue
NOTES: Project Name - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 380 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 49.99

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Cumulative-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 11th Street between Maine Avenue and Daisy Avenue
NOTES: Project Name - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 390 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 50.10

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Cumulative-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 11th Street East of Daisy Street
NOTES: Project Name - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 480 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 51.01

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Cumulative-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 8th Street (Loma Vista) West of Maine Avenue
NOTES: Project Name - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 460 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 50.82

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Cumulative-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 8th Street between Maine Avenue and Daisy Street
NOTES: Project Name - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1100 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	52.7

TABLE Cumulative-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 8th Street East of Daisy Street
NOTES: Project Name - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1600 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.23

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	67.5

TABLE Cumulative-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 7th Street West of Daisy Street
NOTES: Project Name - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7700 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.90

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	52.7	111.2	238.5

TABLE Cumulative-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 7th Street East of Daisy Street
NOTES: Project Name - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7800 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	53.2	112.2	240.6

TABLE Cumulative-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 6th Street West of Daisy Street
NOTES: Project Name - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	94.4	202.1

TABLE Cumulative-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 6th Street East of Daisy Street
NOTES: Project Name - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5700 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.59

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	91.3	195.3

TABLE Cumulative-14
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Oregon Avenue North of Anaheim Street
NOTES: Project Name - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1300 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.33

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	58.9

TABLE Cumulative-15
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Oregon Avenue South of Anaheim Street
NOTES: Project Name - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 740 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 52.89

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Cumulative-16
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Loma Vista Drive North of 11th Street
NOTES: Project Name - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 720 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 52.77

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Cumulative-17
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Maine Avenue between 11th Street and 8th Street
NOTES: Project Name - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 520 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 51.35

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Cumulative-18
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Maine Avenue South of 8th Street
NOTES: Project Name - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 410 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 50.32

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Cumulative-19
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street North of Anaheim Street
NOTES: Project Name - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 710 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.13

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Cumulative-20
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street between Anaheim Street and 11th Street
NOTES: Project Name - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 58.62

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	97.3

TABLE Cumulative-21
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street between 11th Street and 8th Street
NOTES: Project Name - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1100 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.03

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	65.4

TABLE Cumulative-22
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street between 8th Street and 7th Street
NOTES: Project Name - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1300 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.75

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	73.1

TABLE Cumulative-23
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street between 7th Street and 6th Street
NOTES: Project Name - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1300 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.75

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	73.1

TABLE Cumulative-24
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street South of 6th Street
NOTES: Project Name - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1300 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.75

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	73.1

TABLE Cumulative Plus Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Anaheim Street West of Oregon Avenue
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.23

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
61.0	126.8	271.0	582.8

TABLE Cumulative Plus Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Anaheim Street between Oregon Avenue and Daisy Avenue
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.03

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
59.3	123.0	262.8	565.0

TABLE Cumulative Plus Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Anaheim Street East of Daisy Street
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.84

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
57.8	119.6	255.3	548.8

TABLE Cumulative Plus Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 11th Street (Loma Vista) West of Maine Avenue
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1200 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.99

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	55.9

TABLE Cumulative Plus Project-05

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 11th Street between Maine Avenue and Daisy Avenue
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1200 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.99

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	55.9

TABLE Cumulative Plus Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 11th Street East of Daisy Street
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 540 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 51.52

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Cumulative Plus Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 8th Street (Loma Vista) West of Maine Avenue
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 900 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 53.74

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Cumulative Plus Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 8th Street between Maine Avenue and Daisy Street
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1500 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	64.7

TABLE Cumulative Plus Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 8th Street East of Daisy Street
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1600 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.23

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	67.5

TABLE Cumulative Plus Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 7th Street West of Daisy Street
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7700 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.90

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	52.7	111.2	238.5

TABLE Cumulative Plus Project-11

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 7th Street East of Daisy Street
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7900 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.01

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	53.6	113.1	242.6

TABLE Cumulative Plus Project-12

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 6th Street West of Daisy Street
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	94.4	202.1

TABLE Cumulative Plus Project-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: 6th Street East of Daisy Street
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5800 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.67

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	92.4	197.6

TABLE Cumulative Plus Project-14
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Oregon Avenue North of Anaheim Street
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1300 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.33

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	58.9

TABLE Cumulative Plus Project-15
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Oregon Avenue South of Anaheim Street
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1200 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.99

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	55.9

TABLE Cumulative Plus Project-16

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Loma Vista Drive North of 11th Street
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 720 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 52.77

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Cumulative Plus Project-17
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Maine Avenue between 11th Street and 8th Street
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 520 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 51.35

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Cumulative Plus Project-18
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Maine Avenue South of 8th Street
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 410 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 50.32

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Cumulative Plus Project-19

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street North of Anaheim Street
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 830 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.80

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	54.3

TABLE Cumulative Plus Project-20
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street between Anaheim Street and 11th Street
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2700 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.93

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	55.4	118.7

TABLE Cumulative Plus Project-21
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street between 11th Street and 8th Street
NOTES: Project Name - Cumulative Plus Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1100 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.03

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	65.4

TABLE Cumulative Plus Project-22
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street between 8th Street and 7th Street
NOTES: Project Name - Cumulative Plus Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1600 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.65

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	83.9

TABLE Cumulative Plus Project-23
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street between 7th Street and 6th Street
NOTES: Project Name - Cumulative Plus Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1500 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.37

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	80.4

TABLE Cumulative Plus Project-24
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/25/2013
ROADWAY SEGMENT: Daisy Street South of 6th Street
NOTES: Project Name - Cumulative Plus Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1400 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.07

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	76.8

APPENDIX G

TRAFFIC STUDY

TRAFFIC IMPACT ANALYSIS

DRAKE PARK SOCCER FIELD PROJECT

LONG BEACH, CALIFORNIA

LSA

January 2013

TRAFFIC IMPACT ANALYSIS

DRAKE PARK SOCCER FIELD PROJECT

LONG BEACH, CALIFORNIA

Submitted to:

City of Long Beach
Planning & Development Bureau
Department of Parks, Recreation, and Marine
2760 Studebaker Road
Long Beach, California 90815

Prepared by:
LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, California 92614-4731
(949) 553-0666

LSA Project No. CLB1202

LSA

January 2013

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INTRODUCTION

The purpose of this Traffic Impact Analysis (TIA) is to identify the potential traffic and circulation impacts associated with the proposed Drake Park Soccer Field Project in the downtown area of the City of Long Beach (City). The currently vacant project site is generally bound by existing industrial and commercial uses on the north, a ceramic factory and industrial uses on the south, single-family residences on the southeast and east, and De Forest Avenue on the west. The proposed park will include a soccer field, open space, and park amenities. Existing Drake Park facilities are located to the southeast across Loma Vista Drive. In addition, Loma Vista Park currently abuts a portion of the northeast boundary of the project site. Figure 1 shows the location of the proposed project. Figure 2 illustrates the traffic study area analyzed in this report.

The TIA addresses the following three general issues associated with development of the project:

1. Potential increases in traffic volumes at nearby intersections
2. Adequacy of the access locations with the arterial street system
3. Adequacy of the proposed parking supply

This analysis examines the following four scenarios:

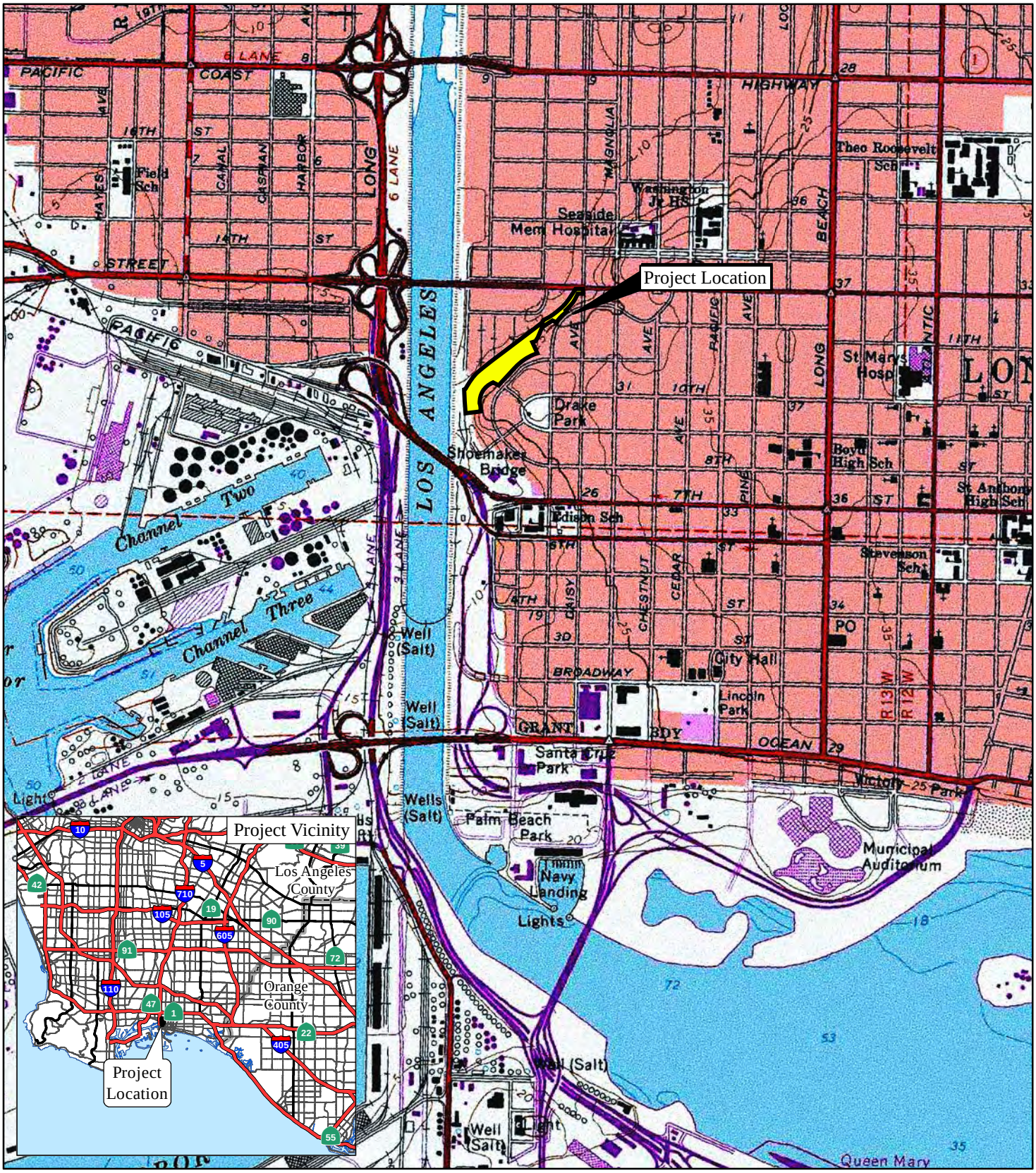
1. Existing condition
2. Cumulative condition (2015, corresponding to project opening year)
3. Existing plus project condition
4. Cumulative plus project condition

Based on discussions with City staff, the following two analysis periods have been evaluated:

1. Weekday p.m. peak hour (between 4:00 p.m. and 6:00 p.m.)
2. Saturday midday peak hour (between 11:00 a.m. and 1:00 p.m.)

Existing Adjacent and On-Site Uses

The existing 6-acre (ac) Drake Park is located west of Maine Avenue between 9th Street (9th Street–Park Circle–Chester Place) and 10th Street (10th Street–Park Circle). The park has been in existence since 1904 (when it was previously named Knoll Park), and it is bordered by a mix of residential and industrial uses, as well as vacant land (i.e., former industrial and railroad property). On-street parking is provided around the perimeter of the park along Loma Vista Court and Park Circle. Park amenities currently include a basketball court, a handball/racquetball court, a soccer field, a roller hockey court/skate plaza, a community center, a playground, two tennis courts, and restrooms.



LSA

FIGURE 1

N

0 1000 2000
FEET

SOURCE: USGS 7.5' QUAD - Long Beach ('81)

I:\CLB1202\G\ProjLoc.ai (1/14/13)

Drake Park Soccer Field

Project Location

Los Angeles River
710 FWY
De Forest ROW
DEFOREST AVE.
Ceramics Factory
SHORELINE DR. SOUTHBOUND
SHORELINE DR. NORTHBOUND
MTA Site
Union Pacific Railroad
WINCHESTER PL.
LOMA VISTA DR.
N. OREGON AVE.
W. ANAHEIM ST.
N. GOLDEN AVE.
W. 6TH ST.
W. 7TH ST.
Edison Elementary School
Bombridge House
MAINE AVE.
W. 5TH ST.
W. 8TH ST.
W. 9TH ST.
W. 10TH ST.
W. 11TH ST.
Loma Vista Park
N. DAISY AVE.
DAISY AVE.

LSA

FIGURE 2

LEGEND

Project Boundary

Edison Elementary School

Study Area Intersection

N

0 125 250
FEET

SOURCE: Google Earth (2013)

Drake Park Soccer Field Project

Traffic Study Area

I:\CLB1202\G\Traffic Study Area.cdr (1/15/13)

PROJECT DESCRIPTION

The proposed Drake Park Soccer Field Project will include the development of an 8.75 ac park facility on existing vacant parcels directly north of the existing 6 ac Drake Park. Figure 3 illustrates the project site plan. The proposed project consists of one soccer field, 275,513 sf of landscaped open space/passive park areas, a pedestrian walking trail, restroom facilities, and parking. The soccer field will be lighted with anticipated league play (i.e., American Youth Soccer Organization [AYSO]). The proposed project will incorporate the existing Loma Vista Park into the new park layout by removing the existing chain-link fencing along the northwest portions of Loma Vista Park. The proposed Drake Park Soccer Field Project will be in linear form and will be characterized by an 8-foot (ft) wide pedestrian trail traversing the park from the northeast to the southwest. The northeast entrance at Daisy Avenue/Anaheim Street is envisioned to be a gateway entrance to the proposed park.

METHODOLOGY

This TIA is prepared consistent with the objectives and requirements of the City, the Los Angeles County Metropolitan Transportation Authority (Metro) *Congestion Management Program* (2004), and applicable provisions of the California Environmental Quality Act (CEQA), including disclosure of project impacts in both existing and cumulative horizon years.

The scope of work, including the study area, was reviewed and approved by the City's Traffic Engineer. The study area was based on logical routes to/from the local-serving park via adjacent intersections, as well as the proximity of these intersections to the project access locations. The study area analyzed in this report includes the following intersections.

Study Area Intersections

1. Oregon Avenue/Anaheim Street
2. Maine Avenue/11th Street
3. Maine Avenue/8th Street
4. Daisy Avenue/Anaheim Street
5. Daisy Avenue/11th Street
6. Daisy Avenue/8th Street
7. Daisy Avenue/7th Street
8. Daisy Avenue/6th Street

Intersection Level of Service Methodology

Traffix (Version 8.0 R1) computer software was utilized to determine the study area intersection levels of service (LOS) based on the Intersection Capacity Utilization (ICU) methodology for the signalized study area intersections and the 2000 Highway Capacity Manual (HCM) methodology for unsignalized intersections. Consistent with the City's requirements, the ICU methodology compares the volume-to-capacity (v/c) ratios of conflicting turn movements at an intersection, sums up these critical conflicting v/c ratios for each intersection approach, and determines the overall ICU.

LSA

FIGURE 3

Proposed Site Boundary

N

0 200 400
FEET

SOURCE:Google Earth, 2013

I:\CLB1202\G\Site Plan.cdr (1/14/13)

Drake Park Soccer Field Project

Proposed Site Plan

The resulting ICU is expressed in terms of LOS, where LOS A represents free-flow activity, and LOS F represents overcapacity operation. LOS is a qualitative assessment of the quantitative effects of such factors as traffic volume, roadway geometrics, speed, delay, and maneuverability on roadway and intersection operations. Typical intersection operations by LOS grade are described below.

LOS	Description
A	No approach phase is fully utilized by traffic, and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turns are made easily, and nearly all drivers find freedom of operation.
B	This service level represents stable operation, where an occasional approach phase is fully utilized, and a substantial number are nearing full use. Many drivers begin to feel restricted within platoons of vehicles.
C	This level still represents stable operating conditions. Occasionally, drivers may have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so.
D	This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection approach can accommodate. Full utilization of every signal cycle is attained no matter how great the demand.
F	This level describes forced-flow operations at low speeds, where volumes exceed capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially, and stoppages may occur for short or long periods of time due to the congestion. In the extreme case, speed can drop to zero.

The 2000 HCM methodology has been used to determine intersection LOS at unsignalized intersections. For the HCM methodology, the LOS is presented in terms of total intersection delay and approach delay of the major and minor streets (in seconds per vehicle).

The respective relationships between LOS and the ICU value (i.e., v/c ratio) and LOS and the delay at unsignalized intersections are as follows:

Level of Service	Volume-to-Capacity (ICU Methodology)	Unsignalized Intersection Delay (seconds) per Vehicle
A	≤0.60	≤10.0
B	>0.60 and ≤0.70	>10.0 and ≤15.0
C	>0.70 and ≤0.80	>15.0 and ≤25.0
D	>0.80 and ≤0.90	>25.0 and ≤35.0
E	>0.90 and ≤1.00	>35.0 and ≤50.0
F	>1.00	>50.0

ICU = Intersection Capacity Utilization

The study area intersection LOS analysis was conducted for the weekday p.m. peak hour and the Saturday midday peak hour. These time periods represent peak utilization of the proposed park uses. Park patrons are typically at school or work during the weekday a.m. peak hour; therefore, a weekday a.m. peak-hour LOS analysis was not prepared.

Threshold of Significance

The City considers LOS D as the upper limit of satisfactory operations. Mitigation is required for any signalized intersection where project traffic causes the intersection to deteriorate from LOS D to LOS E or F, or if the project traffic causes an increase in v/c ratio of 0.02 or greater when the intersection is operating at LOS E or F in the baseline condition. Mitigation is required for any unsignalized intersection where project traffic increases the intersection delay by 2 percent or greater when the intersection is operating at LOS E or F in the baseline condition.

EXISTING BASELINE CONDITION

Existing Circulation System

Key roadways in the vicinity of the proposed project are as follows:

- **Oregon Avenue.** Oregon Avenue, a two-lane north-south roadway, connects to West 12th Street and will provide direct access to the project site.
- **Maine Avenue.** Maine Avenue, a north-south roadway, is the east border of the existing Drake Park. It has one lane in each direction, with curbside parking on both sides of the street.
- **Daisy Avenue.** Daisy Avenue, a north-south roadway, is located east of the project site. It has one lane in each direction, with curbside parking on both sides of the street.
- **Anaheim Street.** Anaheim Street, an east-west arterial, is located north of the project site. Access to the project site will be provided at Oregon Avenue. Anaheim Street has two lanes in each direction, with curbside parking on both sides of the street. Direct access to/from the Interstate 710 (I-710) freeway is provided via Anaheim Street.
- **11th Street.** 11th Street, an east-west roadway, provides direct access to the project site. It has two lanes in each direction, with curbside parking on both sides of the street.
- **8th Street.** 8th Street, an east-west roadway, has two lanes in each direction. Curbside parking is provided on both sides of the street.
- **7th Street.** 7th Street, a one-way east-west arterial, has three lanes in the westbound direction. Curbside parking is provided on both sides of the street. Direct access to the I-710 freeway is provided via 7th Street.
- **6th Street.** 6th Street, a one-way east-west arterial, has three lanes in the eastbound direction. Curbside parking is provided on both sides of the street. Direct access from the I-710 freeway is provided via 6th Street.

Existing Traffic Volumes and LOS Analysis

Peak-hour intersection turn volumes were collected by National Data & Surveying Services (NDS) on October 9, 2010, and October 12, 2010, for the study area intersections. Based on discussions with City staff, traffic conditions have not changed since 2010 as this area of the City is built out. Therefore, the 2010 data is representative of existing conditions. The existing weekday p.m. and Saturday midday peak-hour turn movement volumes for the study area intersections are shown in Figure 4. Appendix A provides the existing peak-hour count data.

Table A summarizes the results of the peak-hour LOS analysis for the eight study area intersections. As discussed previously, the LOS was determined using the ICU methodology for signalized intersections and the HCM methodology for unsignalized intersections. The existing LOS calculation worksheets are contained in Appendix B.

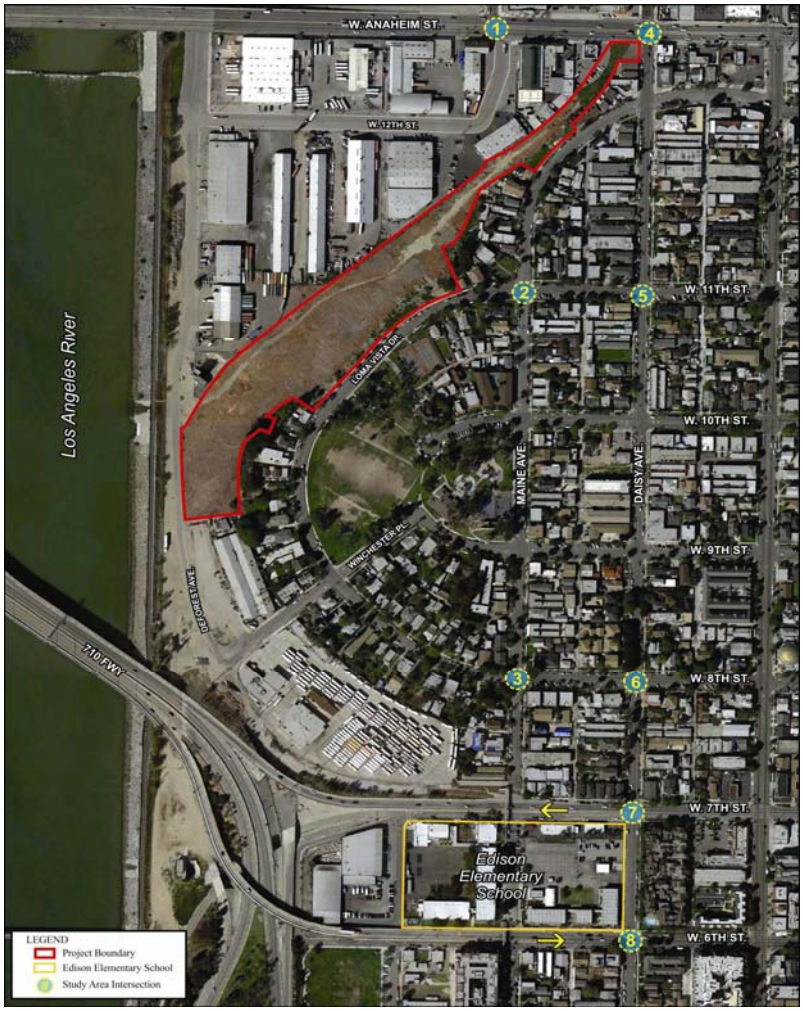
As shown in Table A, all study area intersections currently operate at satisfactory LOS (defined as LOS D or better). The Daisy Avenue/Anaheim Street intersection currently operates at LOS C during the weekday p.m. peak hour; all other intersections operate at LOS A during both peak-hour time periods.

CUMULATIVE BASELINE CONDITION

According to the City, the project will be opened in 2015. Consistent with the scope of work approved by City staff, LSA applied an ambient growth rate of 2 percent per year (i.e., 10 percent total growth) to the existing 2010 traffic counts to develop a cumulative 2015 traffic condition. A list of approved/pending projects (i.e., Long Beach Development Services Project Status Report [www.lbds.info/civica/filebank/blobdload.asp?BlobID=2404]) was reviewed to determine whether projects in the vicinity of the project site (if any) should be included in the cumulative baseline condition. With concurrence from the City, none of the listed approved/pending projects would affect the project study area, as they would generate few or no trips, or they are located further away from the Drake Park Soccer Field site. Application of a 2 percent per year growth rate to the existing traffic volumes is considered conservative and would account for all future development in the project vicinity.

The resulting cumulative peak-hour traffic volumes are shown in Figure 5. An analysis of cumulative LOS was prepared for the study area intersections. The results are shown in Table B. The LOS worksheets are provided in Appendix C.

As Table B indicates, all study area intersections are forecast to operate at satisfactory LOS (defined as LOS D or better) in the cumulative condition. The Daisy Avenue/Anaheim Street intersection is forecast to operate at LOS C during the weekday p.m. peak hour; all other intersections are forecast to operate at LOS B or better during both peak-hour time periods.



1 Oregon Avenue/Anaheim Street

	89 / 34	21 / 22
	1 / 2	886 / 862
	36 / 22	12 / 7
120 / 31	39 / 19	
1628 / 947	2 / 0	
45 / 27	6 / 12	

2 Maine Avenue/11th Street

	18 / 14	8 / 3
	15 / 22	6 / 0
	5 / 5	10 / 3
1 / 6	6 / 1	
4 / 11	15 / 15	
1 / 3	9 / 6	

3 Maine Avenue/8th Street

	1 / 3	10 / 12
	4 / 5	25 / 16
	9 / 16	14 / 12
1 / 2	0 / 1	
22 / 16	5 / 5	
0 / 4	11 / 10	

4 Daisy Avenue/Anaheim Street

	13 / 12	7 / 12
	11 / 7	840 / 831
	16 / 8	28 / 30
35 / 14	76 / 51	
1509 / 886	8 / 12	
133 / 73	32 / 40	

5 Daisy Avenue/11th Street

	11 / 5	14 / 12
	95 / 54	5 / 6
	17 / 5	6 / 6
8 / 15	11 / 2	
4 / 12	72 / 54	
6 / 2	9 / 2	

6 Daisy Avenue/8th Street

	6 / 6	4 / 15
	53 / 15	17 / 40
	3 / 7	6 / 23
10 / 6	30 / 10	
23 / 33	70 / 24	
18 / 5	12 / 20	

7 Daisy Avenue/7th Street

	49 / 23	46 / 41
	35 / 27	657 / 639
		25 / 23
	35 / 32	
	87 / 34	

8 Daisy Avenue/6th Street

	33 / 37	
	27 / 15	
73 / 30	35 / 23	
1307 / 478	24 / 16	
53 / 37		

LSA

FIGURE 4

123 / 456 Weekday PM / Saturday Midday Volumes

Drake Park Soccer Field Project

Existing Baseline Peak-Hour Volumes

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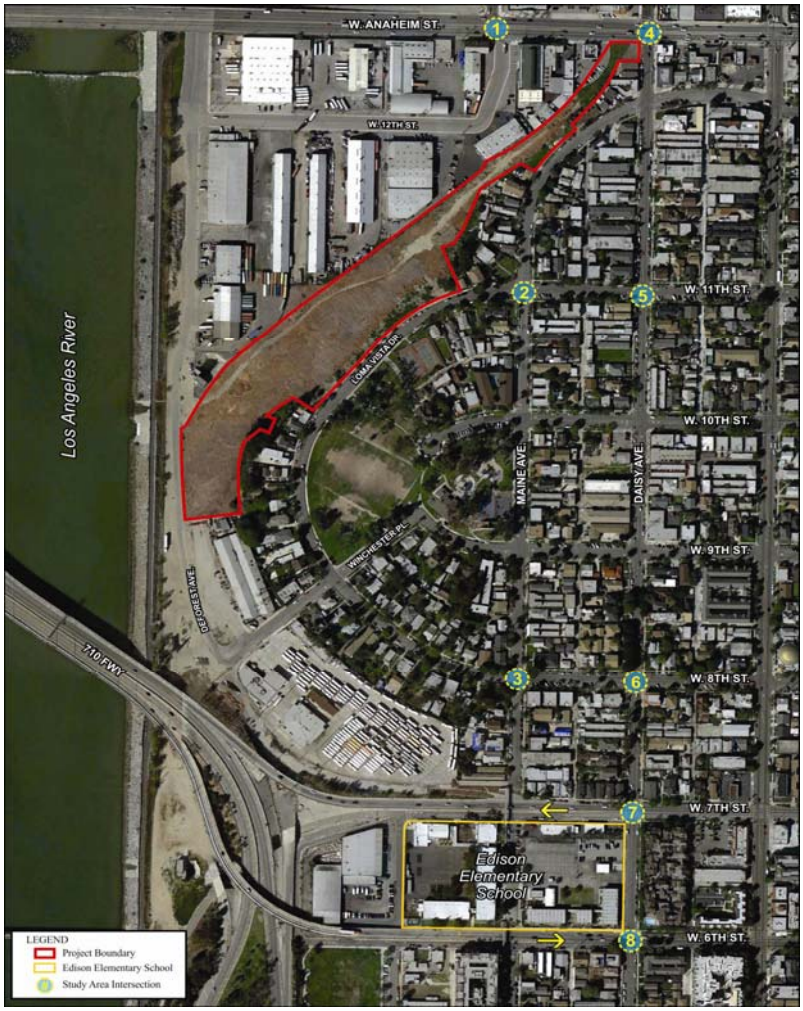
Table A: Existing Baseline Level of Service Summary

	Intersection	Analysis Method	Traffic Control	Weekday PM Peak Hour		Saturday Peak Hour	
				V/C or Delay	LOS	V/C or Delay	LOS
1	Oregon Avenue/Anaheim Street	ICU	Signal	0.56	A	0.44	A
2	Maine Avenue/11th Street	HCM	TWSC	9.2	A	9.1	A
3	Maine Avenue/8th Street	HCM	AWSC	7.1	A	7.0	A
4	Daisy Avenue/Anaheim Street	ICU	Signal	0.71	C	0.49	A
5	Daisy Avenue/11th Street	HCM	TWSC	9.9	A	9.6	A
6	Daisy Avenue/8th Street	HCM	AWSC	7.5	A	7.3	A
7	Daisy Avenue/7th Street	ICU	Signal	0.33	A	0.30	A
8	Daisy Avenue/6th Street	ICU	Signal	0.45	A	0.25	A

ICU = Intersection Capacity Utilization
HCM = Highway Capacity Manual
TWSC = Two-Way Stop-Controlled
AWSC = All-Way Stop-Controlled
V/C = Volume-to-Capacity ratio (for ICU)
Delay is reported in seconds (for HCM).
For TWSC intersections, delay is the worst-case minor street approach delay.
For AWSC intersections, delay is the average control delay for the whole intersection.



1 Oregon Avenue/Anaheim Street

			↱	23 / 24	
			←	975 / 948	
98 / 37	1 / 2	40 / 24	↰	13 / 8	
↰	↓	↳			
132 / 34	↰		↰	↑	↱
1791 / 1042	→		43 / 21	2 / 0	7 / 13
50 / 30	↳				

2 Maine Avenue/11th Street

			↱	9 / 3	
			←	7 / 0	
20 / 15	17 / 24	6 / 6	↰	11 / 3	
↰	↓	↳			
1 / 7	↰		↰	↑	↱
4 / 12	→		7 / 1	17 / 17	10 / 7
1 / 3	↳				

3 Maine Avenue/8th Street

			↱	11 / 13	
			←	28 / 18	
1 / 3	4 / 6	10 / 18	↰	15 / 13	
↰	↓	↳			
1 / 2	↰		↰	↑	↱
24 / 18	→		0 / 1	6 / 6	12 / 11
0 / 4	↳				

4 Daisy Avenue/Anaheim Street

			↱	8 / 13	
			←	924 / 914	
14 / 13	12 / 8	18 / 9	↰	31 / 33	
↰	↓	↳			
39 / 15	↰		↰	↑	↱
1660 / 975	→		84 / 56	9 / 13	35 / 44
146 / 80	↳				

5 Daisy Avenue/11th Street

			↱	15 / 13	
			←	6 / 7	
12 / 6	105 / 59	19 / 6	↰	7 / 7	
↰	↓	↳			
9 / 17	↰		↰	↑	↱
4 / 13	→		12 / 2	79 / 59	10 / 2
7 / 2	↳				

6 Daisy Avenue/8th Street

			↱	4 / 17	
			←	19 / 44	
7 / 7	58 / 17	3 / 8	↰	7 / 25	
↰	↓	↳			
11 / 7	↰		↰	↑	↱
25 / 36	→		33 / 11	77 / 26	13 / 22
20 / 6	↳				

7 Daisy Avenue/7th Street

			↱	51 / 45	
			←	723 / 703	
54 / 25	39 / 30		↰	28 / 25	
↰	↓				
			↰	↑	↱
			39 / 35	96 / 37	

8 Daisy Avenue/6th Street

36 / 41	30 / 17				
↓	↳				
80 / 33	↰		↑	↱	
1438 / 526	→		39 / 25	26 / 18	
58 / 41	↳				

LSA

FIGURE 5

123 / 456 Weekday PM / Saturday Midday Volumes

Drake Park Soccer Field Project

Cumulative Baseline Peak-Hour Volumes

P:\CLB1202\Traffic\xls\vol graphics\cumulative.xls (1/18/2013)

Table B: Cumulative Baseline Level of Service Summary

	Intersection	Analysis Method	Traffic Control	Weekday PM Peak Hour		Saturday Peak Hour	
				V/C or Delay	LOS	V/C or Delay	LOS
1	Oregon Avenue/Anaheim Street	ICU	Signal	0.61	B	0.48	A
2	Maine Avenue/11th Street	HCM	TWSC	9.2	A	9.2	A
3	Maine Avenue/8th Street	HCM	AWSC	7.1	A	7.1	A
4	Daisy Avenue/Anaheim Street	ICU	Signal	0.77	C	0.53	A
5	Daisy Avenue/11th Street	HCM	TWSC	10.1	B	9.7	A
6	Daisy Avenue/8th Street	HCM	AWSC	7.6	A	7.4	A
7	Daisy Avenue/7th Street	ICU	Signal	0.35	A	0.32	A
8	Daisy Avenue/6th Street	ICU	Signal	0.49	A	0.26	A

ICU = Intersection Capacity Utilization
HCM = Highway Capacity Manual
TWSC = Two-Way Stop-Controlled
AWSC = All-Way Stop-Controlled
V/C = Volume-to-Capacity ratio (for ICU)
Delay is reported in seconds (for HCM).
For TWSC intersections, delay is the worst-case minor street approach delay.
For AWSC intersections, delay is the average control delay for the whole intersection.

PROJECT CONDITION

Trip Generation

The proposed components within Drake Park Soccer Field site include both active and passive uses. The active use includes a soccer field. To a lesser degree, the passive uses (providing pedestrian corridors and an open grassy field) will also attract vehicles to the site.

Trip generation sources such as the Institute of Transportation Engineers (ITE) Trip Generation Manual, 8th Edition (2008), the San Diego Association of Governments (SANDAG) Traffic Generators (2002), and the San Diego Municipal Code Trip Generation Manual (2003) were researched to identify trip rates for the active uses on site. The ITE manual is a nationwide reference, while the SANDAG and San Diego Municipal Code manuals provide trip-generating characteristics more customized to Southern California and the project area. It should be noted that an applicable trip generation source is not available from the Southern California Association of Governments (SCAG).

The following project components have the potential to generate vehicle trips to the project site. Unless otherwise indicated, the trip generation is based on the square footage of the identified uses.

- One lighted soccer field is proposed within the project with anticipated AYSO league play. Upon review of typical AYSO schedules in Long Beach (i.e., Region 177 and Region 114), lighted fields are used on weekdays between 5:00 p.m. and 8:00 p.m., as well as on the weekends. The Drake Park Soccer Field will be lighted until 10:00 p.m. To generate trips for this facility, data from the Long Beach Sports Park Environmental Impact Report (EIR) was used. It was estimated that there would be 12 players and 3 spectators per team on weekdays (with an average vehicle ridership [AVR] of 1.25) and 12 players and 9 spectators per team on weekends (with an AVR of 1.50). It should be noted that the AVR for soccer leagues may be as high as 3.0–3.5; however, an AVR of 1.25 on weekdays and an AVR of 1.5 on weekends has been used to present a conservative, worst-case analysis.

  Based on the number of persons and the AVR, a soccer field (with two teams) would generate 48 trips (24 inbound and 24 outbound) during a weekday peak hour and 56 trips (28 inbound and 28 outbound) during a weekend peak hour. The field is open between 8:00 a.m. and 10:00 p.m. (14 hours). Games/practices are estimated to last approximately 1 hour, 30 minutes, with a 15-minute break in between. As such, approximately eight games/practices can be played on the weekend. On a weekday, it is estimated that games/practices start at 5:00 p.m. and continue until 10:00 p.m. (i.e., approximately three games). Given that games/practices will last at least 1 hour, the trip generation assumes that, within the peak hour, there are inbound trips for two teams and outbound trips for two teams.

- Developed City parks are parks that provide a variety of recreational facilities. Such parks provide playground equipment, as well as facilities and fields for participant sports (i.e., baseball/ softball, football, soccer, volleyball, basketball, tennis, swimming, etc.). The trip rates referenced from SANDAG for City parks also include sports facilities and meeting rooms. This general description can be applied to several active or passive uses proposed as part of the Drake Park Soccer Field Project, as the combination of the individual uses will function as a City park from a trip generation standpoint. Based on this, the City Park trip rate referenced from SANDAG was applied to the passive park space, as well as any ancillary uses within the project site such as restrooms, an open grassy field, and pedestrian corridors.

Weekend trip rates are not provided by SANDAG for this use. To develop a weekend trip rate, a comparison of weekday vs. weekend trip rates was conducted for County Park use based on the ITE Trip Generation Manual. As a result, a park generates approximately 3.5 more trips on the weekend (average of both Saturday and Sunday) than on a weekday. This factor was applied to the SANDAG weekday rates to generate weekend trip rates for purposes of this analysis.

- The existing Drake Park includes a lighted field that can be used for soccer, football, etc. The park also includes a community building. Trips associated with this existing active park are included in the traffic counts collected for study area intersections.

Table C presents the project trip generation based on the trip rates for each component of the Drake Park Soccer Field as mentioned above. As this table indicates, the proposed project has the potential to generate approximately 389 weekday average daily traffic (ADT), including 76 trips (38 inbound and 38 outbound) in the weekday p.m. peak hour. The project could generate approximately 1,332 weekend (Saturday) ADT, including 156 trips (78 inbound and 78 outbound) in the Saturday midday peak hour.

It should be noted that the trip generation estimate should be considered conservative (i.e., an overestimation of vehicle trips) based on the following factors:

1. The Drake Park Soccer Field is adjacent to existing neighborhoods. An adjustment to the trip generation to account for mode choice (i.e., pedestrian and bicycle) was not applied to the individual components in the trip generation estimate.
2. The City Park trip rate was applied to areas that would not be as active as the trip rate intends, such as pedestrian and landscape corridors.

Trip Distribution and Assignment

Trip distribution for the proposed project is based on the location of the Drake Park Soccer Field in relation to residential areas within the City, logical travel corridors, and minimum time paths. Project peak-hour traffic volumes entering/exiting the project site were assigned to the adjacent street system based on the location of each project component, its respective parking area, and proximity to the access points. Figure 6 illustrates the regional project trip distribution, as well as the resulting project trip assignment for the study area intersections. As shown on Figure 6, 50 percent of the trips are destined northwest (via Anaheim Street and I-710 [7th Street and 6th Street]), 8 percent are destined north via Oregon Avenue, 38 percent are destined east (via Anaheim Street, 11th Street, 8th Street, 7th Street, and 6th Street), and 4 percent are destined south (via Daisy Avenue).

Table C: Drake Park Soccer Field Project Trip Generation

Trip Generation Rates		Weekday PM Peak				Saturday Midday Peak			
Land Use	**Units**	**ADT**	**Inbound**	**Outbound**	**Total**	**ADT**	**Inbound**	**Outbound**	**Total**
Soccer Field [1]	field	72.00	24.00	24.00	48.00	224.00	28.00	28.00	56.00
City Park [2]	TSF	1.15	0.05	0.05	0.10	4.02	0.18	0.18	0.36

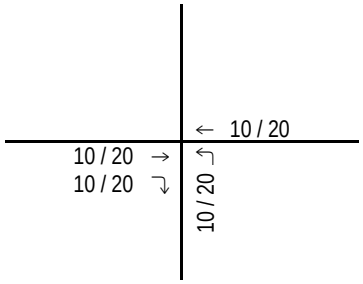
Trip Generation			Weekday PM Peak				Saturday Midday Peak			
Land Use	**Size**	**Units**	**ADT**	**Inbound**	**Outbound**	**Total**	**ADT**	**Inbound**	**Outbound**	**Total**
Soccer Field	1	field	72	24	24	48	224	28	28	56
City Park	275.513	TSF	317	14	14	28	1,108	50	50	100
TOTAL TRIP GENERATION			**389**	**38**	**38**	**76**	**1,332**	**78**	**78**	**156**

ADT Average Daily Trips

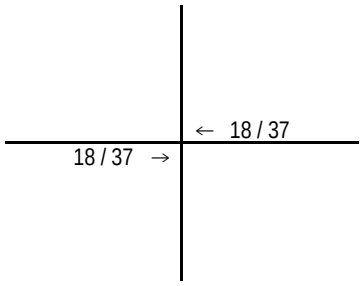
TSF Thousand Square Feet

1 Trip rates based on players/spectators per field and an average vehicle occupancy, as documented in the Long Beach Sports Park EIR.

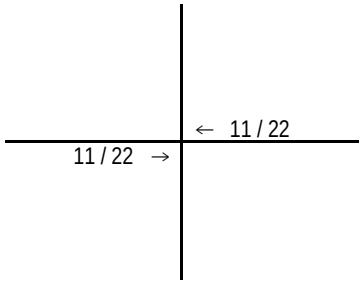
2 Weekday trip rates referenced from the SANDAG Traffic Generators (2002). Weekend rates developed based on comparison of ITE Trip Generation (2008) weekday vs. weekend rates for County Park.



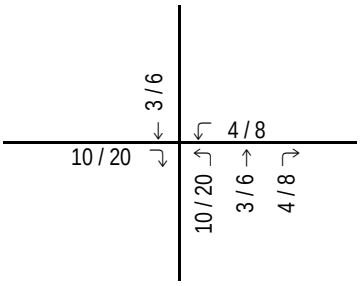
1 Oregon Avenue/Anaheim Street



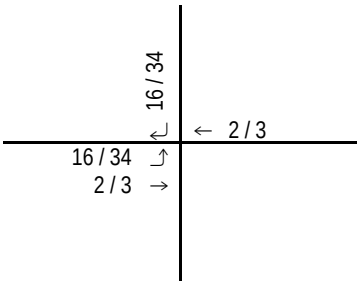
2 Maine Avenue/11th Street



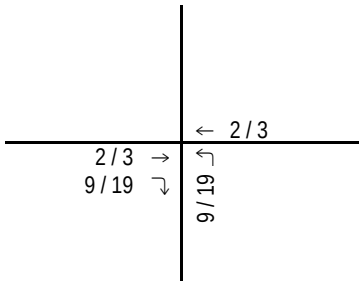
3 Maine Avenue/8th Street



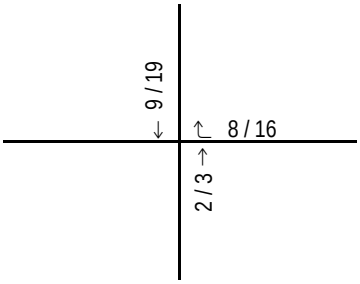
4 Daisy Avenue/Anaheim Street



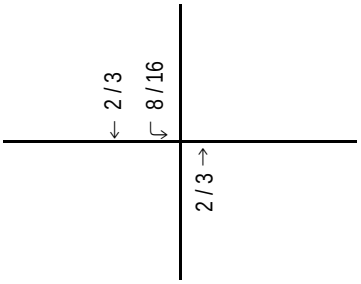
5 Daisy Avenue/11th Street



6 Daisy Avenue/8th Street



7 Daisy Avenue/7th Street



8 Daisy Avenue/6th Street

LSA

FIGURE 6

123 / 456 Weekday PM / Saturday Midday Volumes

Drake Park Soccer Field Project

Project Trip Distribution and Assignment

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EXISTING PLUS PROJECT CONDITION

To determine the existing plus project condition, traffic generated by the proposed project was added to existing baseline traffic volumes at the study area intersections. Figure 7 shows the resulting existing plus project peak-hour traffic volumes. The existing plus project peak-hour LOS analysis is presented in Table D. LOS worksheets are provided in Appendix D.

As Table D indicates, all study area intersections are anticipated to operate at satisfactory LOS (defined as LOS D or better) with the addition of project traffic. Therefore, the proposed Drake Park Soccer Field Project would not create a significant project-related traffic impact under this scenario. The project would not conflict with any plan, ordinance, policy establishing measures of effectiveness for the performance of the circulation system, or congestion management program (i.e., LOS standards).

CUMULATIVE PLUS PROJECT CONDITION

To determine the cumulative 2015 (project opening) plus project condition, traffic generated by the project was added to the cumulative traffic volumes at each study area intersection. Figure 8 illustrates the resulting cumulative plus project peak-hour traffic volumes. The cumulative plus project peak-hour LOS analysis is provided in Table E. LOS worksheets are provided in Appendix E.

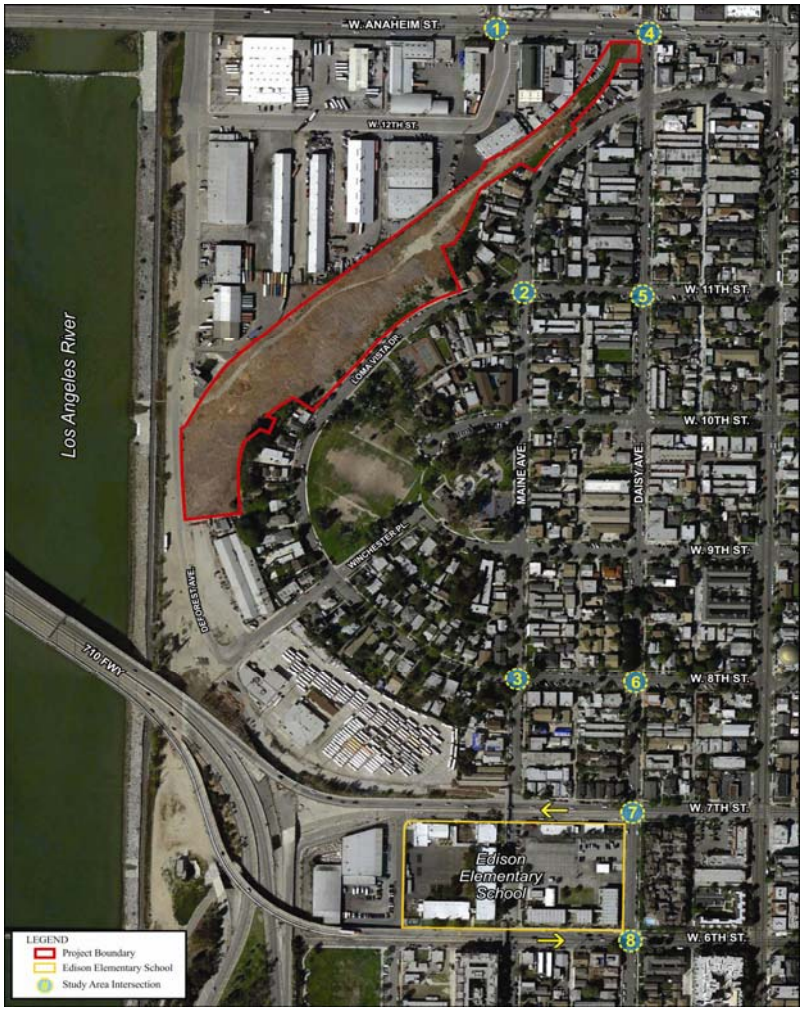
As Table E indicates, all study area intersections are forecast to operate at satisfactory LOS (defined as LOS D or better) with the addition of project traffic. Therefore, the proposed project would not create a significant project-related traffic impact under this scenario. The project would not conflict with any plan, ordinance, policy establishing measures of effectiveness for the performance of the circulation system, or congestion management program (i.e., LOS standards).

SITE ACCESS ANALYSIS

Access to the existing Drake Park is provided via local streets (Loma Vista Court, Park Circle, and Maine Avenue). Access to the new Drake Park Soccer Field will also be provided via these local streets, as well as the signalized intersection of Oregon Avenue/Anaheim Street.

The local streets will continue to serve the existing Drake Park, as well as the proposed Drake Park Soccer Field. The Oregon Avenue/Anaheim Street intersection will serve as secondary access to the project site. Based on the anticipated project volumes and the LOS analyses of the study area intersections (i.e., satisfactory LOS at all intersections), the arterial street system would provide adequate interface with the Drake Park access locations.

The project will provide pedestrian and bicycle circulation connecting the existing Drake Park, the Drake Park Soccer Field, and Anaheim Street. Visitors of the Drake Park would be able to walk/jog or bike to all components of the proposed project.



	89 / 34	1 / 2	36 / 22		
				21 / 22	
				896 / 882	
				12 / 7	
120 / 31					
1638 / 967					
55 / 47					
		49 / 39	2 / 0	6 / 12	

1 Oregon Avenue/Anaheim Street

	18 / 14	15 / 22	5 / 5		
				8 / 3	
				24 / 37	
				10 / 3	
1 / 6					
22 / 48					
1 / 3					
		6 / 1	15 / 15	9 / 6	

2 Maine Avenue/11th Street

	1 / 3	4 / 5	9 / 16		
				10 / 12	
				36 / 38	
				14 / 12	
1 / 2					
33 / 38					
0 / 4					
		0 / 1	5 / 5	11 / 10	

3 Maine Avenue/8th Street

	13 / 12	14 / 13	16 / 8		
				7 / 12	
				840 / 831	
				32 / 38	
35 / 14					
1509 / 886					
143 / 93					
		86 / 71	11 / 18	36 / 48	

4 Daisy Avenue/Anaheim Street

	27 / 39	95 / 54	17 / 5		
				14 / 12	
				7 / 9	
				6 / 6	
24 / 49					
6 / 15					
6 / 2					
		11 / 2	72 / 54	9 / 2	

5 Daisy Avenue/11th Street

	6 / 6	53 / 15	3 / 7		
				4 / 15	
				19 / 43	
				6 / 23	
10 / 6					
25 / 36					
27 / 24					
		39 / 29	70 / 24	12 / 20	

6 Daisy Avenue/8th Street

	49 / 23	44 / 46			
				54 / 57	
				657 / 639	
				25 / 23	
		35 / 32	89 / 37		

7 Daisy Avenue/7th Street

	35 / 40	35 / 31			
73 / 30					
1307 / 478					
53 / 37					
		37 / 26	24 / 16		

8 Daisy Avenue/6th Street

LSA

FIGURE 7

123 / 456 Weekday PM / Saturday Midday Volumes

Drake Park Soccer Field Project

Existing Plus Project Peak-Hour Volumes

Table D: Existing Plus Project Level of Service Summary

	Intersection	Analysis Method	Traffic Control	Baseline				Plus Project				Peak-Hour Δ in V/C or Delay	
				Weekday PM Peak Hour		Saturday Peak Hour		Weekday PM Peak Hour		Saturday Peak Hour			
				V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	Weekday PM	Saturday
1	Oregon Avenue/Anaheim Street	ICU	Signal	0.56	A	0.44	A	0.57	A	0.46	A	0.01	0.02
2	Maine Avenue/11th Street	HCM	TWSC	9.2	A	9.1	A	9.5	A	9.6	A	0.3	0.5
3	Maine Avenue/8th Street	HCM	AWSC	7.1	A	7.0	A	7.1	A	7.2	A	0.0	0.2
4	Daisy Avenue/Anaheim Street	ICU	Signal	0.71	C	0.49	A	0.73	C	0.52	A	0.02	0.03
5	Daisy Avenue/11th Street	HCM	TWSC	9.9	A	9.6	A	10.4	B	10.0	B	0.5	0.4
6	Daisy Avenue/8th Street	HCM	AWSC	7.5	A	7.3	A	7.6	A	7.4	A	0.1	0.1
7	Daisy Avenue/7th Street	ICU	Signal	0.33	A	0.30	A	0.33	A	0.31	A	0.00	0.01
8	Daisy Avenue/6th Street	ICU	Signal	0.45	A	0.25	A	0.46	A	0.26	A	0.01	0.01

ICU = Intersection Capacity Utilization

HCM = Highway Capacity Manual

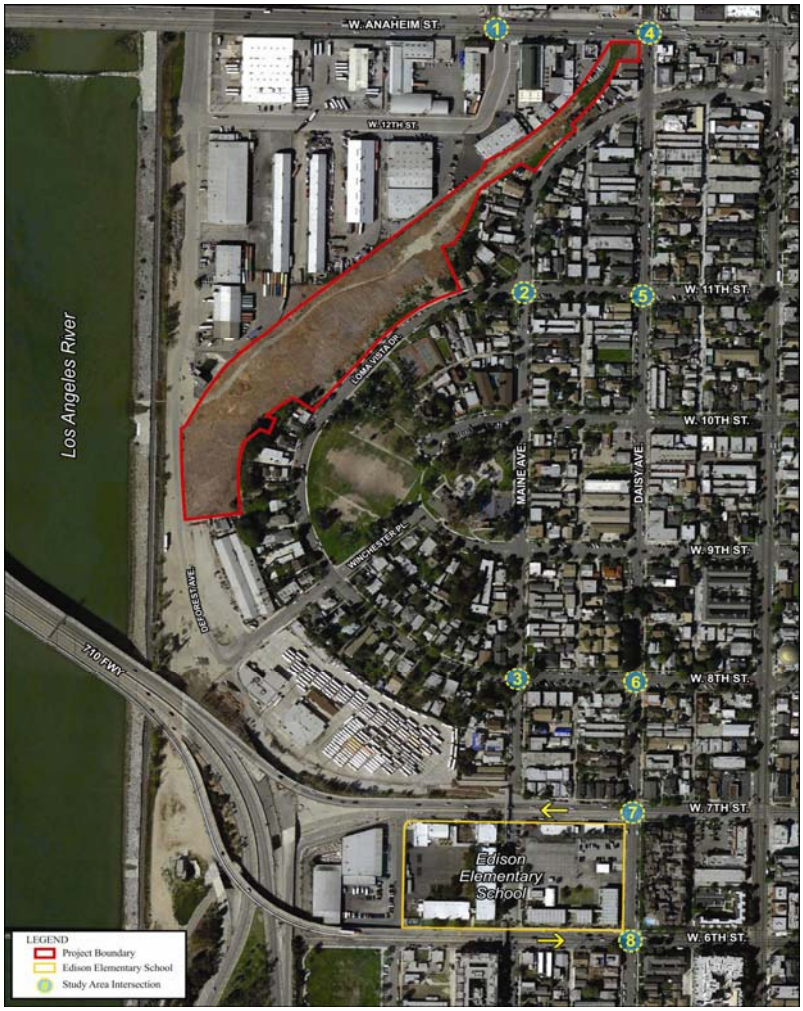
TWSC = Two-Way Stop-Controlled

AWSC = All-Way Stop-Controlled

V/C = Volume-to-Capacity ratio (for ICU)

Delay is reported in seconds (for HCM).

For TWSC intersections, delay is the worst-case minor street approach delay. For AWSC intersections, delay is the average control delay for the whole intersection.



98 / 37 ↰	1 / 2 ↓	40 / 24 ↳
132 / 34 ↱	1801 / 1062 →	60 / 50 ↲
53 / 41 ↶	2 / 0 ↑	7 / 13 ↷
23 / 24 ↱	985 / 968 ←	13 / 8 ↶

1 Oregon Avenue/Anaheim Street

20 / 15 ↰	17 / 24 ↓	6 / 6 ↳
1 / 7 ↱	22 / 49 →	1 / 3 ↲
7 / 1 ↶	17 / 17 ↑	10 / 7 ↷
9 / 3 ↱	25 / 37 ←	11 / 3 ↶

2 Maine Avenue/11th Street

1 / 3 ↰	4 / 6 ↓	10 / 18 ↳
1 / 2 ↱	35 / 40 →	0 / 4 ↲
0 / 1 ↶	6 / 6 ↑	12 / 11 ↷
11 / 13 ↱	39 / 40 ←	15 / 13 ↶

3 Maine Avenue/8th Street

14 / 13 ↰	15 / 14 ↓	18 / 9 ↳
39 / 15 ↱	1660 / 975 →	156 / 100 ↲
94 / 76 ↶	12 / 19 ↑	39 / 52 ↷
8 / 13 ↱	924 / 914 ←	35 / 41 ↶

4 Daisy Avenue/Anaheim Street

28 / 40 ↰	105 / 59 ↓	19 / 6 ↳
25 / 51 ↱	6 / 16 →	7 / 2 ↲
12 / 2 ↶	79 / 59 ↑	10 / 2 ↷
15 / 13 ↱	8 / 10 ←	7 / 7 ↶

5 Daisy Avenue/11th Street

7 / 7 ↰	58 / 17 ↓	3 / 8 ↳
11 / 7 ↱	27 / 39 →	29 / 25 ↲
42 / 30 ↶	77 / 26 ↑	13 / 22 ↷
4 / 17 ↱	21 / 47 ←	7 / 25 ↶

6 Daisy Avenue/8th Street

54 / 25 ↰	48 / 49 ↓	
39 / 35 ↶	98 / 40 ↑	
59 / 61 ↱	723 / 703 ←	28 / 25 ↶

7 Daisy Avenue/7th Street

38 / 44 ↓	38 / 33 ↳	
80 / 33 ↱	1438 / 526 →	58 / 41 ↲
41 / 28 ↑	26 / 18 ↷	

8 Daisy Avenue/6th Street

LSA

FIGURE 8

123 / 456 Weekday PM / Saturday Midday Volumes

Drake Park Soccer Field Project

Cumulative Plus Project Peak-Hour Volumes

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Table E: Cumulative Plus Project Level of Service Summary

	Intersection	Analysis Method	Traffic Control	Baseline				Plus Project				Peak-Hour Δ in V/C or Delay	
				Weekday PM Peak Hour		Saturday Peak Hour		Weekday PM Peak Hour		Saturday Peak Hour			
				V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	Weekday PM	Saturday
1	Oregon Avenue/Anaheim Street	ICU	Signal	0.61	B	0.48	A	0.62	B	0.50	A	0.01	0.02
2	Maine Avenue/11th Street	HCM	TWSC	9.2	A	9.2	A	9.5	A	9.6	A	0.3	0.4
3	Maine Avenue/8th Street	HCM	AWSC	7.1	A	7.1	A	7.2	A	7.2	A	0.1	0.1
4	Daisy Avenue/Anaheim Street	ICU	Signal	0.77	C	0.53	A	0.79	C	0.56	A	0.02	0.03
5	Daisy Avenue/11th Street	HCM	TWSC	10.1	B	9.7	A	10.6	B	10.1	B	0.5	0.4
6	Daisy Avenue/8th Street	HCM	AWSC	7.6	A	7.4	A	7.7	A	7.5	A	0.1	0.1
7	Daisy Avenue/7th Street	ICU	Signal	0.35	A	0.32	A	0.35	A	0.33	A	0.00	0.01
8	Daisy Avenue/6th Street	ICU	Signal	0.49	A	0.26	A	0.49	A	0.27	A	0.00	0.01

ICU = Intersection Capacity Utilization

HCM = Highway Capacity Manual

TWSC = Two-Way Stop-Controlled

AWSC = All-Way Stop-Controlled

V/C = Volume-to-Capacity ratio (for ICU)

Delay is reported in seconds (for HCM).

For TWSC intersections, delay is the worst-case minor street approach delay. For AWSC intersections, delay is the average control delay for the whole intersection.

The project takes into account all modes of transportation. It does not conflict with any plans, ordinances, policies, or programs regarding public transit, bicycle, or pedestrian facilities. Mass transit would not be affected. The project will not introduce hazardous design features. The project would provide pedestrian/bicycle connectivity to/from the local circulation network and the park, while ensuring the safety of motorists, pedestrians, and bicyclists.

PARKING ANALYSIS

The proposed Drake Park Soccer Field Project will provide a total parking supply of 94 spaces (i.e., 66 parking lot spaces and 28 parking spaces along De Forest Avenue). The parking space locations are illustrated on the site plan (Figure 3). In order to determine whether adequate parking will be provided for the project, LSA generated the parking requirement for each proposed use, consistent with the City's Municipal Code. The parking rates and parking requirements are shown in Table F.

Because the Municipal Code does not have a parking rate for a soccer field, the observed parking rate from the Long Beach Sports Park EIR was used. The soccer parking rate is based on players and spectators per field and average vehicle occupancy (AVO). The parking requirement for the passive uses/areas was generated using the Municipal Code parking rate for Passive Park (2 spaces per acre, or 1 space per 21,780 square feet).

As Table F indicates, the proposed uses would require a parking supply of 69 parking spaces. Based on a proposed parking supply of 94 spaces, adequate parking would be provided on site.

CONSTRUCTION ANALYSIS

Construction activity will be scheduled per standard conditions required by the City. Per Municipal Code, Chapter 8.80, Section 202, construction activity shall be limited to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, and shall be limited to 9:00 a.m. to 6:00 p.m. on Saturday. No construction activity shall be permitted on Sundays and City or national holidays. The use of heavy equipment shall be restricted to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday.

Project construction will occur over the course of approximately 12 months. Construction is anticipated to begin in late 2013 and be completed in late 2014 with project opening in 2015. A description of each construction phase and duration is provided below.

- **Phase 1 – Grading and Utilities (2 months):** 8 workers and 15 trucks per day
- **Phase 2 – Flatwork, Amenities, and Electrical (2 months):** 8 workers and 3 trucks per day
- **Phase 3 – Irrigation (2 months):** 4 workers and 2 trucks per day
- **Phase 4 – Restroom (2 months):** 4 workers and 2 trucks per day
- **Phase 5 – Landscaping (4 months):** 6 workers and 2 trucks per day

Table F: Drake Park Soccer Field Project Parking Requirement Summary

Parking Rates **Land Use**	**Size**	**Units**	**Parking Spaces per City Code Rate**
Soccer Field [1]	1	field	56.00
City Park (Passive Park) [2]	21.780	TSF	1.00

Parking Generation **Land Use**	**Size**	**Units**	**Parking Spaces per City Code Rate**
Soccer Field	1	fields	56
City Park (Passive Park)	275.513	TSF	13
TOTAL PARKING REQUIREMENT			69

ADT Average Daily Trips

TSF Thousand Square Feet

1 The parking rate was based on players/spectators per field and an average vehicle occupancy, as documented in the Long Beach Sports Park EIR. The City of Long Beach (City) Municipal Code does not have a parking rate for a soccer field; therefore, the observed parking rate has been used.

2 The City Municipal Code parking rate for Passive Park is 2 spaces per acre, which is equivalent to 1 space per 21.780 TSF.

The project will include import of approximately 5,932 cubic yards (cy) of fill material during Phase 1 (Grading and Utilities). Construction haul trips will occur on the I-710 and Anaheim Street (i.e., City-designated haul routes). Approximately 12 haul trucks (with a capacity of approximately 13 cy) will be required per construction day to import all fill material/soil for completion of Phase 1. It is anticipated that an additional 3 trucks will be needed for deliveries and equipment. Phase 1 represents the busiest period of construction. Table G provides a summary of the construction trip generation for each of the five construction phases.

As shown in Table G, 15 trucks during Phase 1 will generate 4 peak-hour trips (2 inbound and 2 outbound). The truck trips were converted to passenger car equivalent (PCE) trips at a ratio of 2.5 passenger cars per truck, consistent with the guidance in the HCM. The 15 Phase 1 trucks will generate 10 PCE peak-hour trips (5 inbound and 5 outbound). When compared to typical operations of the Drake Park Soccer Field (shown in Table C), the construction activity is not anticipated to generate more peak-hour trips. Therefore, the impacts of the project have been evaluated based on operational project characteristics, which generate more traffic, and additional construction traffic analysis is not required.

CONCLUSIONS

Based on the results of this conservative analysis, the Drake Park Soccer Field Project could be implemented without resulting in significant impacts to the surrounding roadway system. The evaluation of the study area intersection LOS shows that the addition of project traffic would not create any significant adverse impacts.

The Drake Park Soccer Field Project would provide adequate design features to accommodate vehicular, pedestrian, and bicycle access and interactions. Pedestrian and bicycle traffic would be afforded safe travel via pathways that connect to the public street system.

Based on the proposed parking supply and the Municipal Code parking requirements, adequate parking would be provided for the Drake Park Soccer Field Project to accommodate the anticipated demand.

MITIGATION MEASURES

The project is not anticipated to create significant traffic/circulation impacts to any of the study area intersections in the existing plus project or cumulative plus project settings, as the proposed project would not exceed the City's significance criteria. Therefore, no mitigation measures are recommended or required.

Table G: Drake Park Soccer Field Project Construction Trip Generation Summary

Phase				Vehicle Trip Generation						PCE Trip Generation					
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	Description	Duration	Trucks [1]	in	out	total	in	out	total	in	out	total	in	out	total
1	*Grading and Utilities*	*2 months*	15	2	2	4	2	2	4	5	5	10	5	5	10
2	*Flatwork (Parking Lot), Amenities (Soccer Field), and Electrical*	*2 months*	3	1	1	2	1	1	2	3	3	6	3	3	6
3	*Irrigation*	*2 months*	3	1	1	2	1	1	2	3	3	6	3	3	6
4	*Restroom*	*2 months*	3	1	1	2	1	1	2	3	3	6	3	3	6
5	*Landscaping and Maintenance*	*4 months*	2	1	1	2	1	1	2	3	3	6	3	3	6

[1] Truck trips would occur between 7:00 a.m. and 7:00 p.m. (i.e., including during both peak hours).
Construction workers will arrive and depart outside of the peak hours (i.e., before 7:00 a.m. and after 7:00 p.m.)

PCE = passenger car equivalent. A construction truck has a PCE of 2.5.

ADT = average daily traffic

APPENDIX A

EXISTING TRAFFIC VOLUMES

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

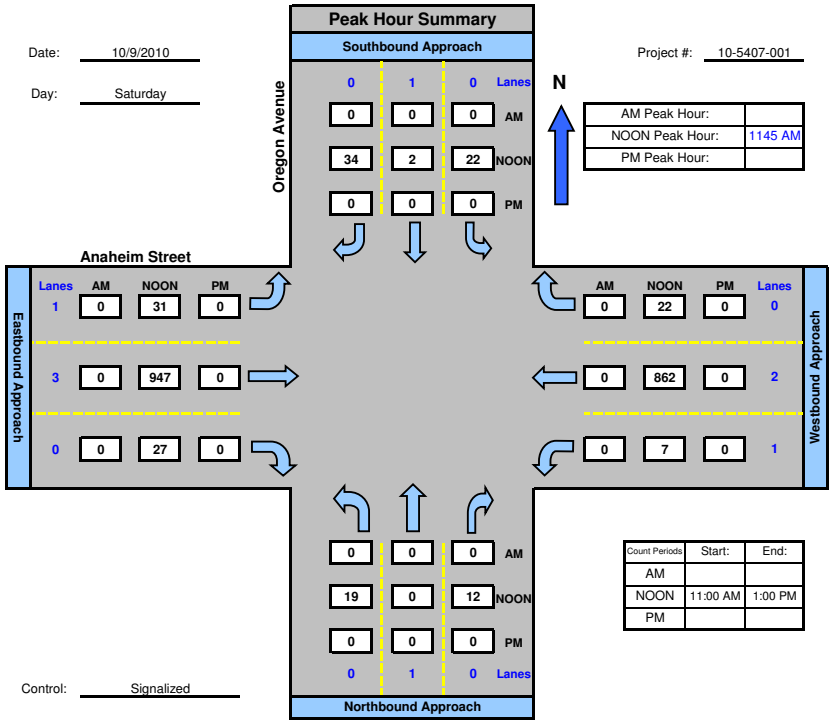
Oregon Avenue and Anaheim Street .

Date: 10/9/2010

Day: Saturday

Project #: 10-5407-001

AM Peak Hour:	
NOON Peak Hour:	1145 AM
PM Peak Hour:	



Count Periods	Start:	End:
AM		
NOON	11:00 AM	1:00 PM
PM		

Control: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

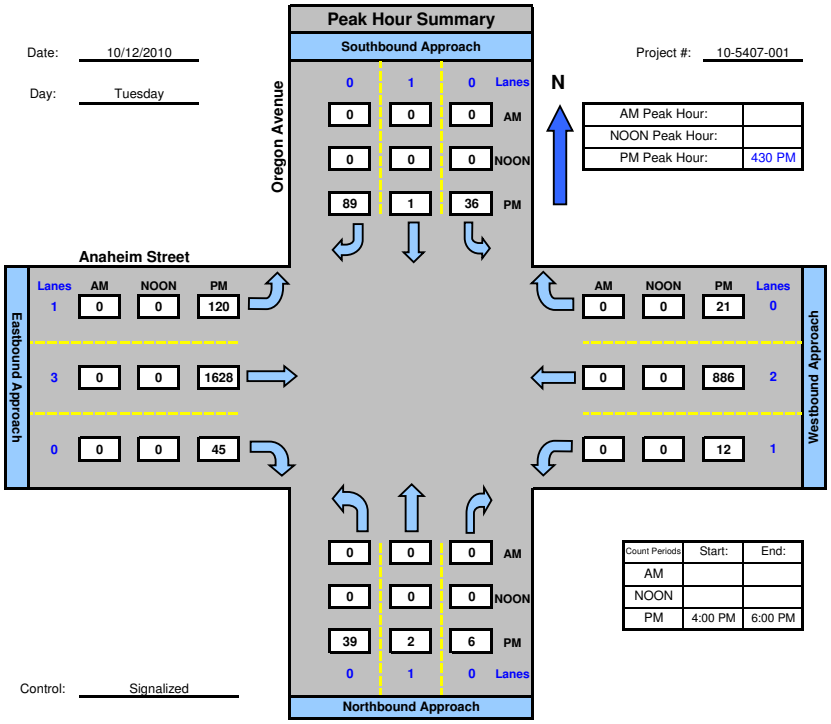
Oregon Avenue and Anaheim Street .

Date: 10/12/2010

Day: Tuesday

Project #: 10-5407-001

AM Peak Hour:	
NOON Peak Hour:	
PM Peak Hour:	430 PM



Count Periods	Start:	End:
AM		
NOON		
PM	4:00 PM	6:00 PM

Control: Signalized

Intersection Turning Movement

Prepared by:

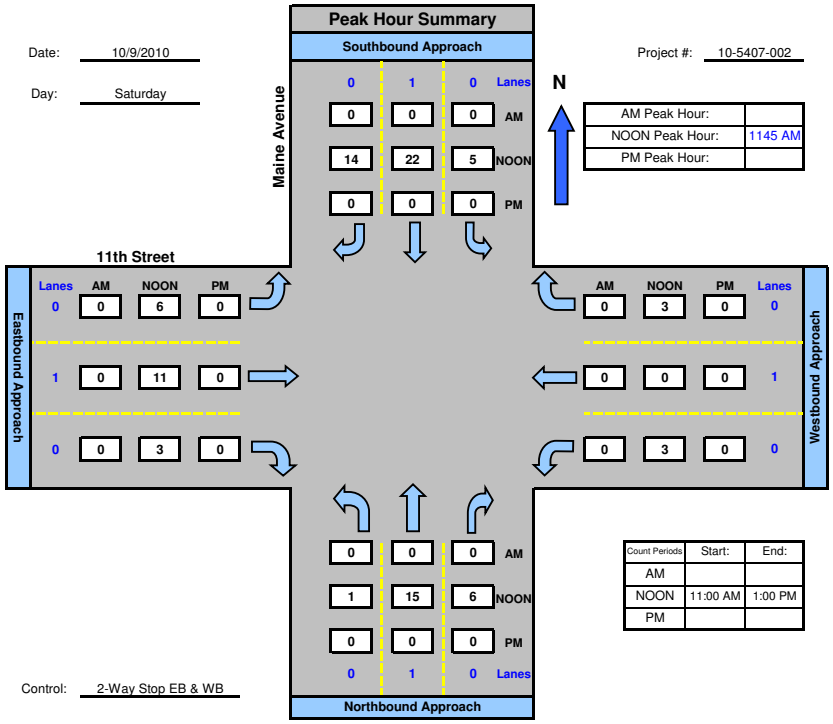
National Data & Surveying Services

Maine Avenue and 11th Street .

Date: 10/9/2010

Day: Saturday

Project #: 10-5407-002



AM Peak Hour:	
NOON Peak Hour:	1145 AM
PM Peak Hour:	

Count Periods	Start:	End:
AM		
NOON	11:00 AM	1:00 PM
PM		

Control: 2-Way Stop EB & WB

Intersection Turning Movement

Prepared by:

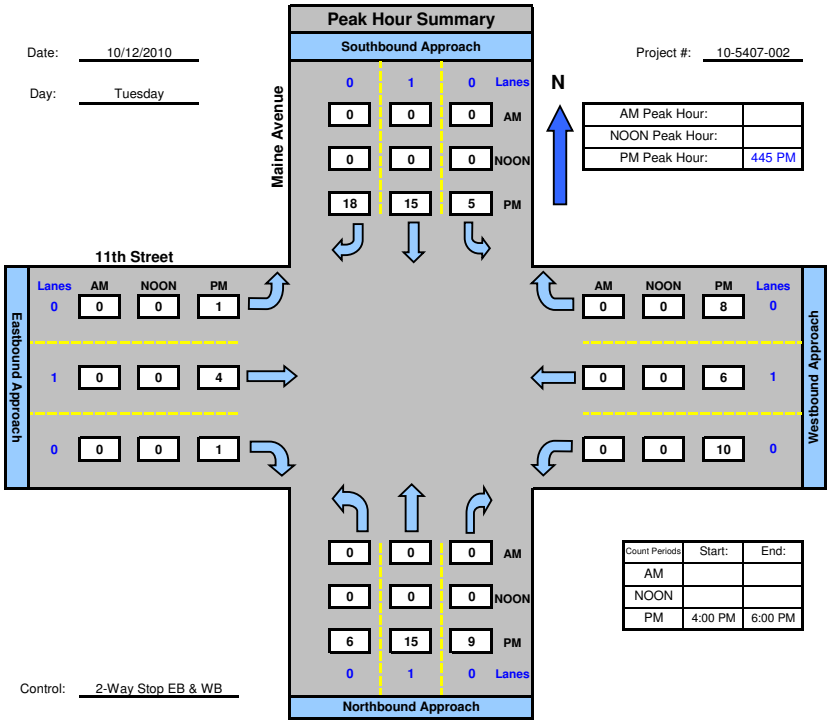
National Data & Surveying Services

Maine Avenue and 11th Street .

Date: 10/12/2010

Day: Tuesday

Project #: 10-5407-002



AM Peak Hour:	
NOON Peak Hour:	
PM Peak Hour:	445 PM

Count Periods	Start:	End:
AM		
NOON		
PM	4:00 PM	6:00 PM

Control: 2-Way Stop EB & WB

Intersection Turning Movement

Prepared by:

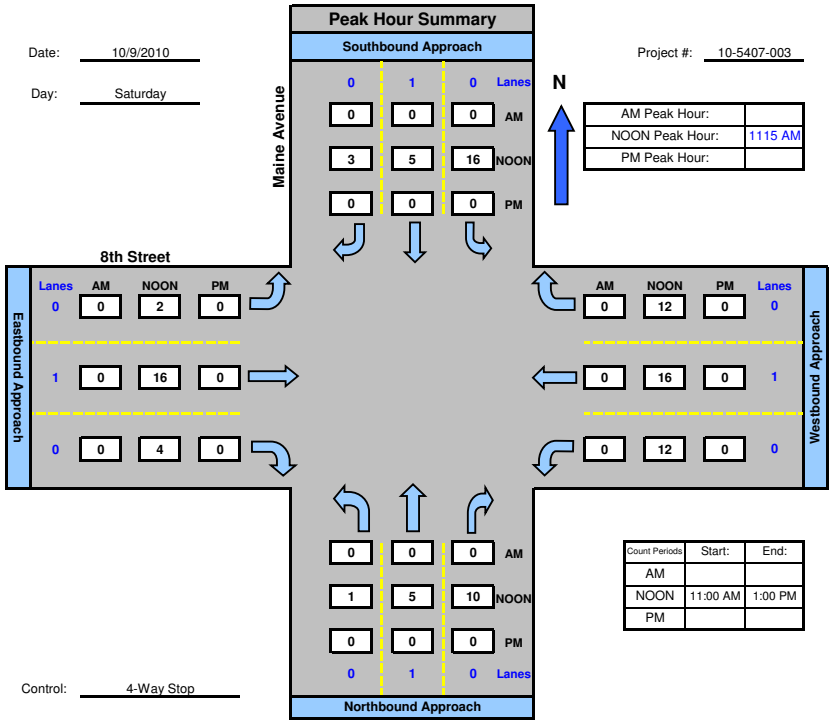
National Data & Surveying Services

Maine Avenue and 8th Street .

Date: 10/9/2010

Day: Saturday

Project #: 10-5407-003



AM Peak Hour:	
NOON Peak Hour:	1115 AM
PM Peak Hour:	

Count Periods	Start:	End:
AM		
NOON	11:00 AM	1:00 PM
PM		

Control: 4-Way Stop

Intersection Turning Movement

Prepared by:

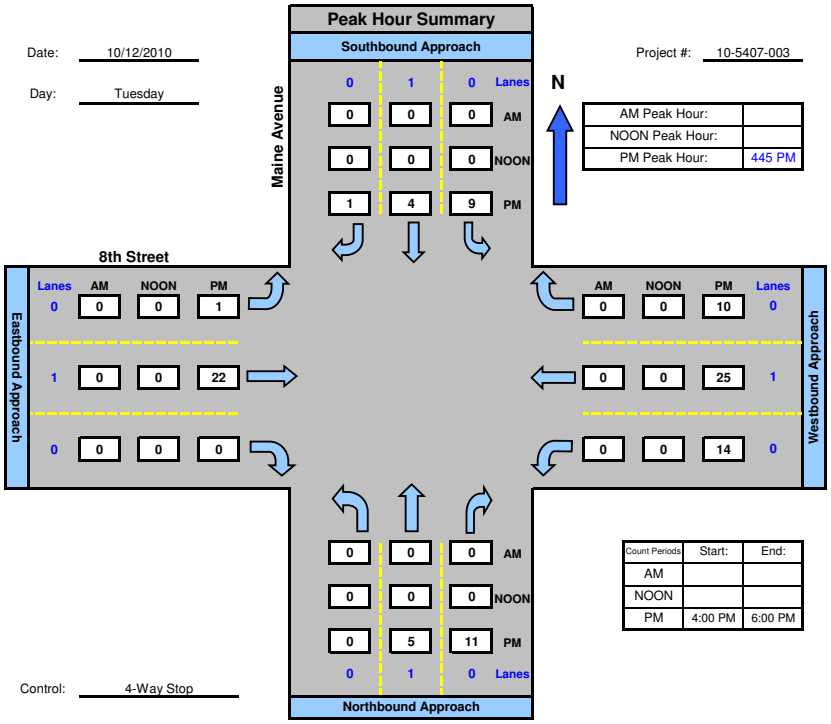
National Data & Surveying Services

Maine Avenue and 8th Street .

Date: 10/12/2010

Day: Tuesday

Project #: 10-5407-003



AM Peak Hour:	
NOON Peak Hour:	
PM Peak Hour:	445 PM

Count Periods	Start:	End:
AM		
NOON		
PM	4:00 PM	6:00 PM

Control: 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

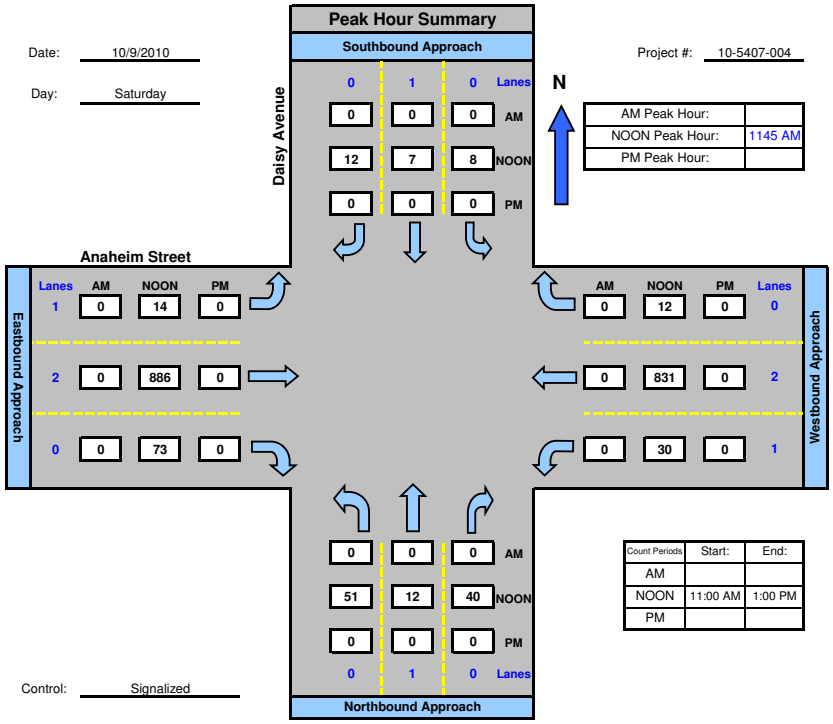
Daisy Avenue and Anaheim Street .

Date: 10/9/2010

Day: Saturday

Project #: 10-5407-004

AM Peak Hour:	
NOON Peak Hour:	1145 AM
PM Peak Hour:	



Count Periods	Start:	End:
AM		
NOON	11:00 AM	1:00 PM
PM		

Control: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

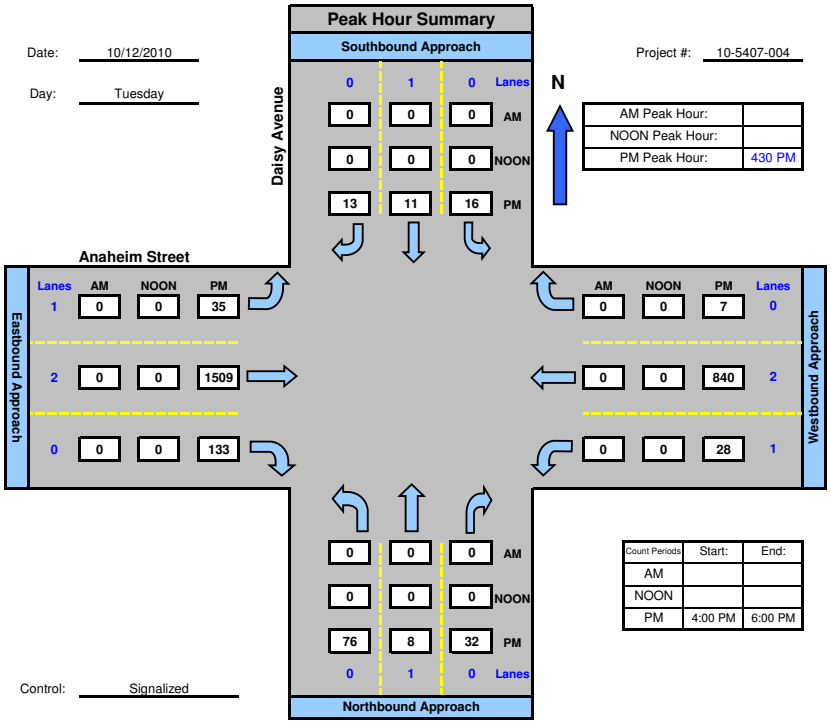
Daisy Avenue and Anaheim Street .

Date: 10/12/2010

Day: Tuesday

Project #: 10-5407-004

AM Peak Hour:	
NOON Peak Hour:	
PM Peak Hour:	430 PM



Count Periods	Start:	End:
AM		
NOON		
PM	4:00 PM	6:00 PM

Control: Signalized

Intersection Turning Movement

Prepared by:

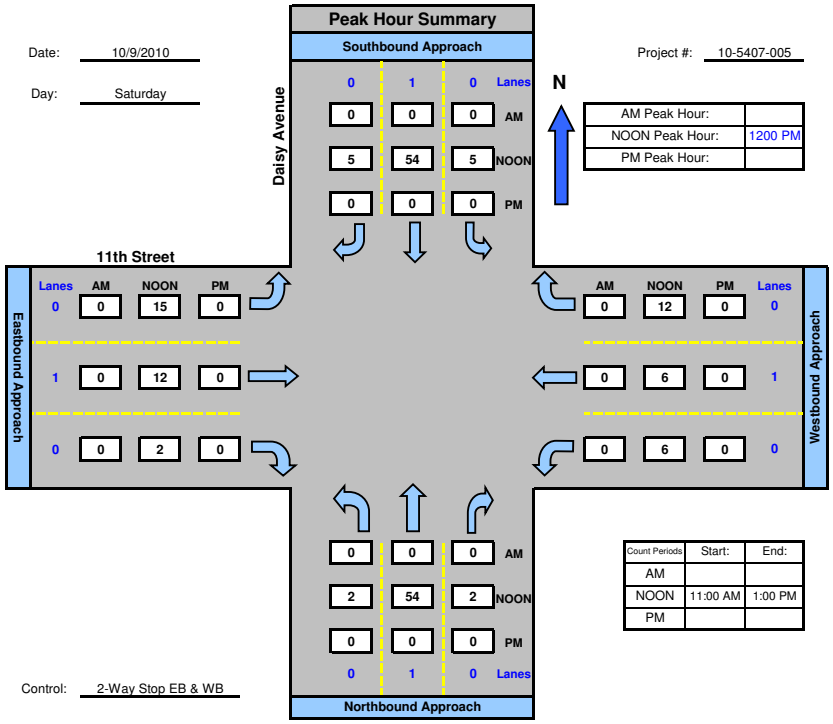
National Data & Surveying Services

Daisy Avenue and 11th Street .

Date: 10/9/2010

Day: Saturday

Project #: 10-5407-005



AM Peak Hour:	
NOON Peak Hour:	1200 PM
PM Peak Hour:	

Count Periods	Start:	End:
AM		
NOON	11:00 AM	1:00 PM
PM		

Control: 2-Way Stop EB & WB

Intersection Turning Movement

Prepared by:

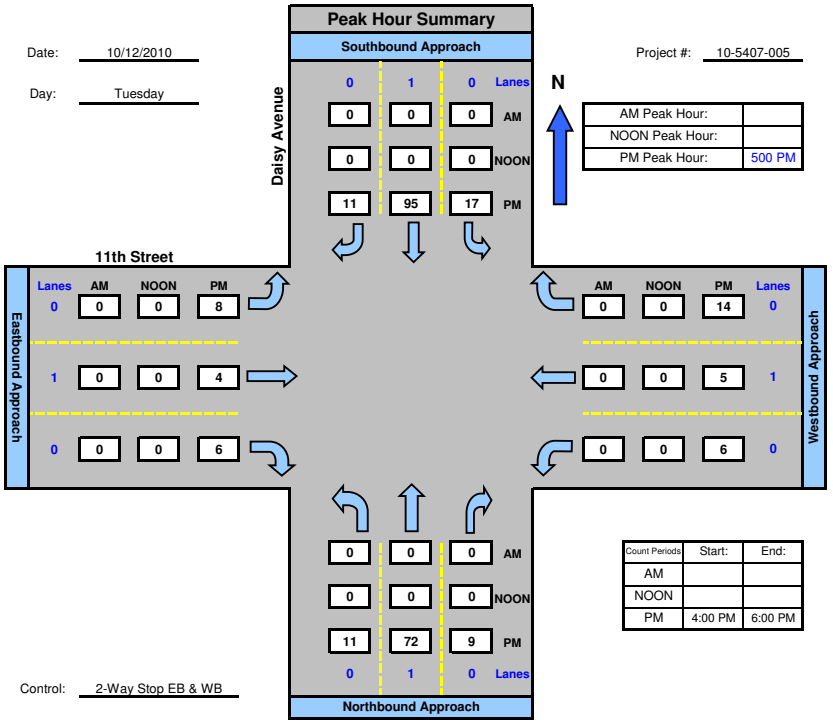
National Data & Surveying Services

Daisy Avenue and 11th Street .

Date: 10/12/2010

Day: Tuesday

Project #: 10-5407-005



AM Peak Hour:	
NOON Peak Hour:	
PM Peak Hour:	500 PM

Count Periods	Start:	End:
AM		
NOON		
PM	4:00 PM	6:00 PM

Control: 2-Way Stop EB & WB

Intersection Turning Movement

Prepared by:

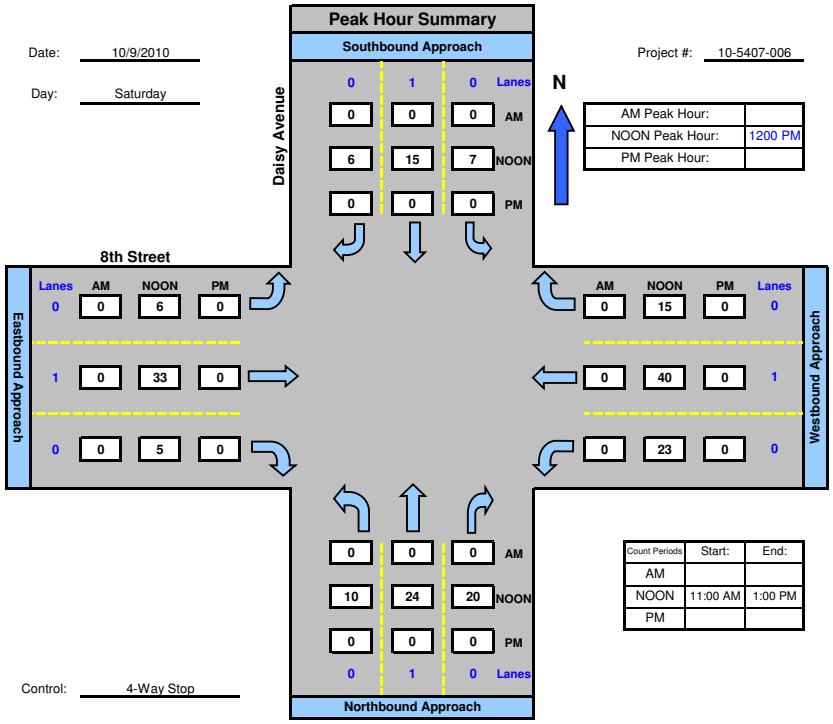
National Data & Surveying Services

Daisy Avenue and 8th Street .

Date: 10/9/2010

Day: Saturday

Project #: 10-5407-006



AM Peak Hour:	
NOON Peak Hour:	1200 PM
PM Peak Hour:	

Count Periods	Start:	End:
AM		
NOON	11:00 AM	1:00 PM
PM		

Control: 4-Way Stop

Intersection Turning Movement

Prepared by:

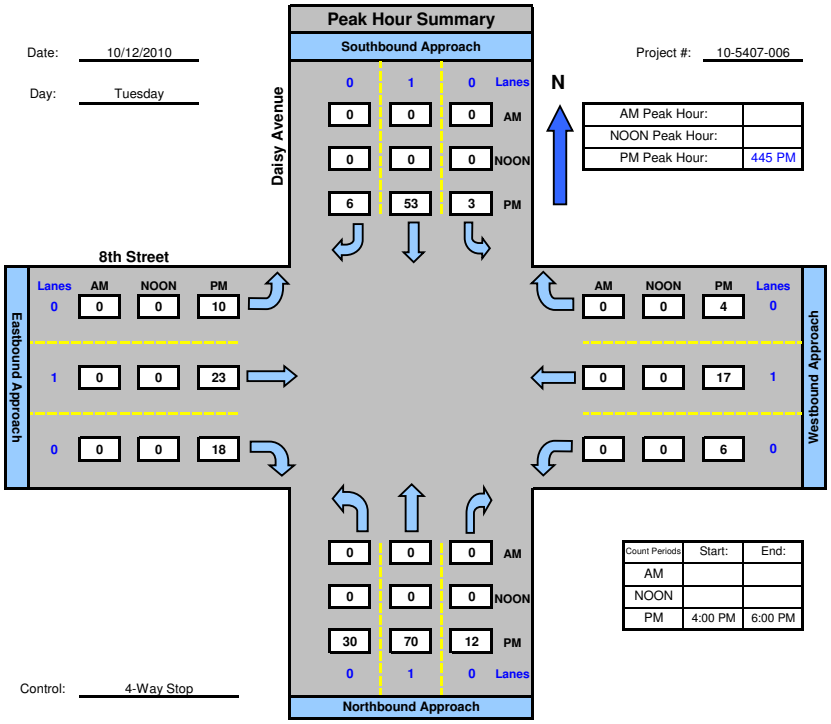
National Data & Surveying Services

Daisy Avenue and 8th Street .

Date: 10/12/2010

Day: Tuesday

Project #: 10-5407-006



AM Peak Hour:	
NOON Peak Hour:	
PM Peak Hour:	445 PM

Count Periods	Start:	End:
AM		
NOON		
PM	4:00 PM	6:00 PM

Control: 4-Way Stop

Intersection Turning Movement

Prepared by:

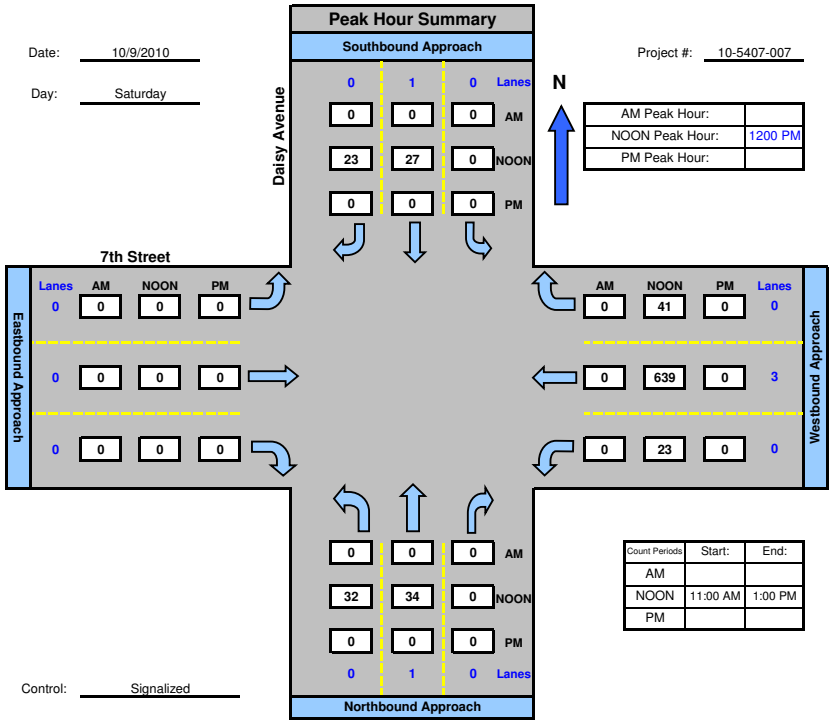
National Data & Surveying Services

Daisy Avenue and 7th Street .

Date: 10/9/2010

Day: Saturday

Project #: 10-5407-007



AM Peak Hour:	
NOON Peak Hour:	1200 PM
PM Peak Hour:	

Count Periods	Start:	End:
AM		
NOON	11:00 AM	1:00 PM
PM		

Control: Signalized

Intersection Turning Movement

Prepared by:

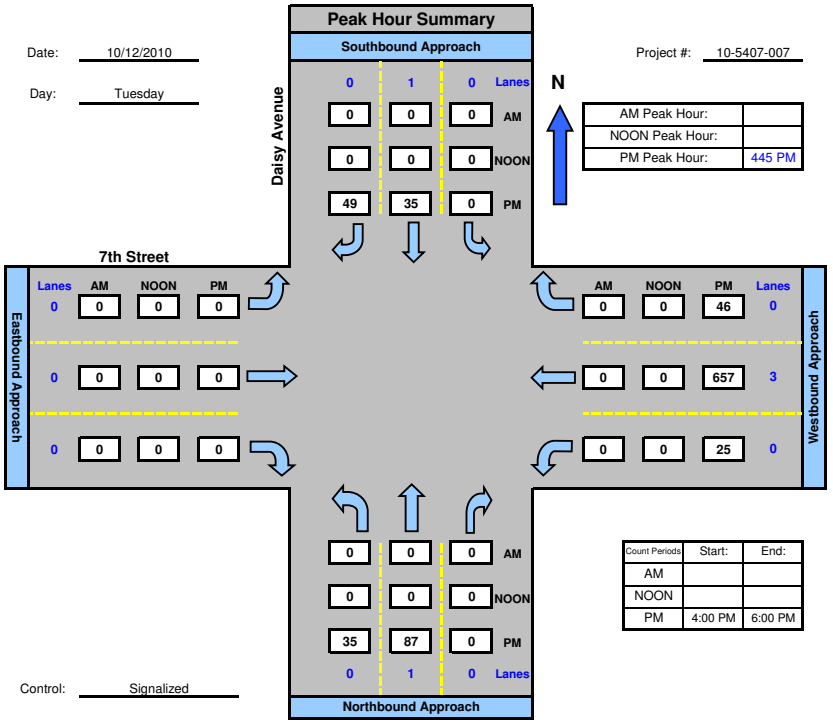
National Data & Surveying Services

Daisy Avenue and 7th Street .

Date: 10/12/2010

Day: Tuesday

Project #: 10-5407-007



AM Peak Hour:	
NOON Peak Hour:	
PM Peak Hour:	445 PM

Count Periods	Start:	End:
AM		
NOON		
PM	4:00 PM	6:00 PM

Control: Signalized

Intersection Turning Movement

Prepared by:

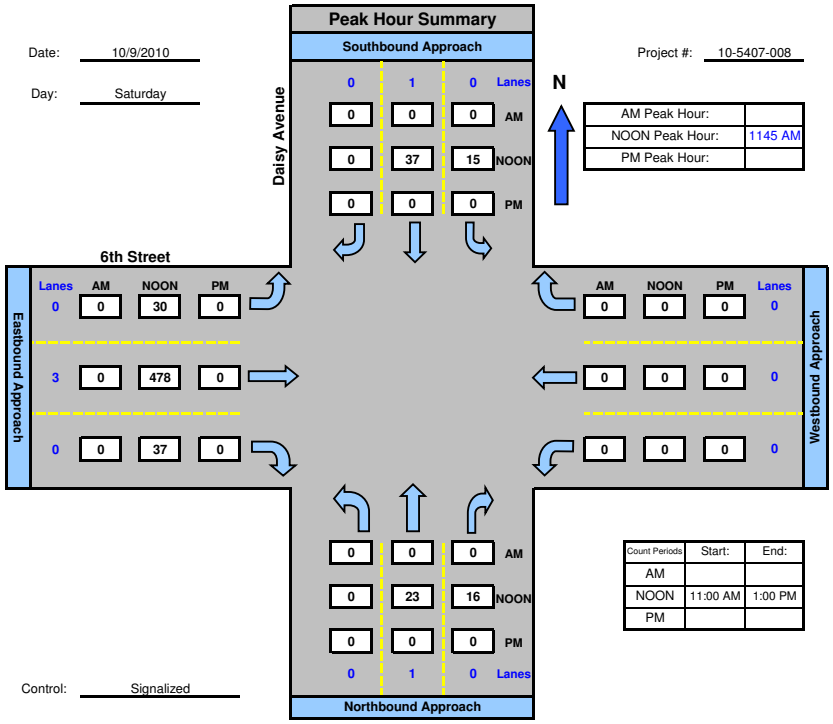
National Data & Surveying Services

Daisy Avenue and 6th Street .

Date: 10/9/2010

Day: Saturday

Project #: 10-5407-008



AM Peak Hour:	
NOON Peak Hour:	1145 AM
PM Peak Hour:	

Count Periods	Start:	End:
AM		
NOON	11:00 AM	1:00 PM
PM		

Control: Signalized

Intersection Turning Movement

Prepared by:

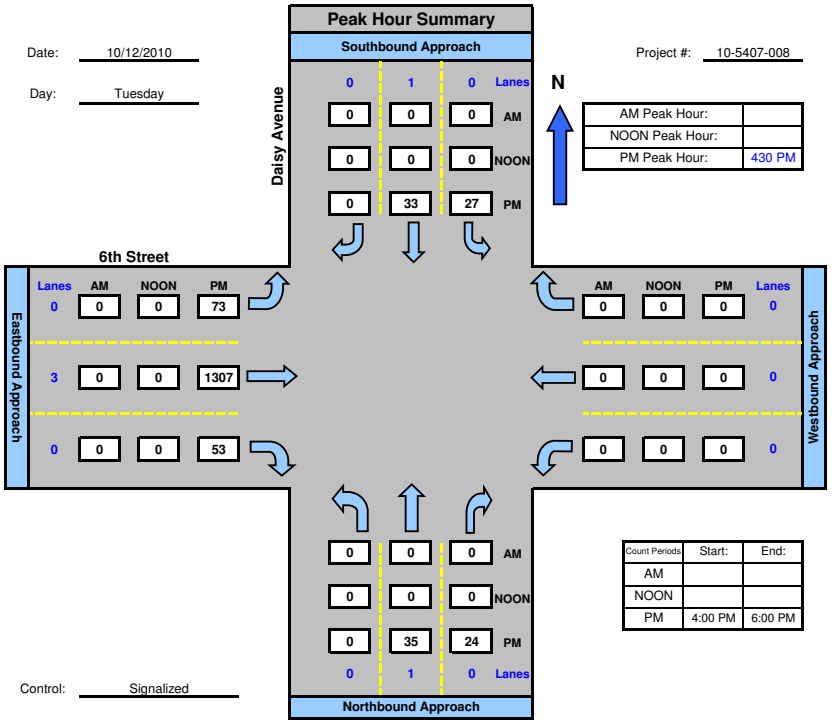
National Data & Surveying Services

Daisy Avenue and 6th Street .

Date: 10/12/2010

Day: Tuesday

Project #: 10-5407-008



AM Peak Hour:	
NOON Peak Hour:	
PM Peak Hour:	430 PM

Count Periods	Start:	End:
AM		
NOON		
PM	4:00 PM	6:00 PM

Control: Signalized

APPENDIX B

EXISTING LEVEL OF SERVICE WORKSHEETS

Scenario Report

Scenario:	Existing PM
Command:	Default Command
Volume:	Existing PM
Geometry:	Existing
Impact Fee:	Default Impact Fee
Trip Generation:	None
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Oregon Avenue/Anaheim Street	A	xxxxx	0.562	A	xxxxx	0.562	+ 0.000 V/C
# 2 Maine Avenue/11th Street	A	9.2	0.011	A	9.2	0.011	+ 0.000 D/V
# 3 Maine Avenue/8th Street	A	7.1	0.054	A	7.1	0.054	+ 0.000 V/C
# 4 Daisy Avenue/Anaheim Street	C	xxxxx	0.713	C	xxxxx	0.713	+ 0.000 V/C
# 5 Daisy Avenue/11th Street	A	9.9	0.014	A	9.9	0.014	+ 0.000 D/V
# 6 Daisy Avenue/8th Street	A	7.5	0.130	A	7.5	0.130	+ 0.000 V/C
# 7 Daisy Avenue/7th Street	A	xxxxx	0.328	A	xxxxx	0.328	+ 0.000 V/C
# 8 Daisy Avenue/6th Street	A	xxxxx	0.452	A	xxxxx	0.452	+ 0.000 V/C

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Oregon Avenue/Anaheim Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.562
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	A

Street Name:	Oregon Avenue						Anaheim Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	0	1! 0	0	1	0	2	1
Volume Module:												
Base Vol:	39	2	6	36	1	89	120	1628	45	12	886	21
Growth 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
Initial Bse:	39	2	6	36	1	89	120	1628	45	12	886	21
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	2	6	36	1	89	120	1628	45	12	886	21
User 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
PHF 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
PHF Volume:	39	2	6	36	1	89	120	1628	45	12	886	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	2	6	36	1	89	120	1628	45	12	886	21
PCE 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
MLF 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
FinalVolume:	39	2	6	36	1	89	120	1628	45	12	886	21
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.83	0.04	0.13	0.28	0.01	0.71	1.00	2.92	0.08	1.00	1.95	0.05
Final Sat.:	1328	68	204	457	13	1130	1600	4671	129	1600	3126	74
Capacity Analysis Module:												
Vol/Sat:	0.02	0.03	0.03	0.02	0.08	0.08	0.08	0.35	0.35	0.01	0.28	0.28
Crit Moves:	****				****		****				****	

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Maine Avenue/11th Street

Average Delay (sec/veh): 3.6 Worst Case Level Of Service: A[9.2]

Street Name:	Maine Avenue						11th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1! 0	0	0	0	1! 0	0	0	0	1! 0	0
Volume Module:												
Base Vol:	6	15	9	5	15	18	1	4	1	10	6	8
Growth 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
Initial Bse:	6	15	9	5	15	18	1	4	1	10	6	8
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	6	15	9	5	15	18	1	4	1	10	6	8
User 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
PHF 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
PHF Volume:	6	15	9	5	15	18	1	4	1	10	6	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	6	15	9	5	15	18	1	4	1	10	6	8
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	33	xxxx	xxxxx	24	xxxx	xxxxx	73	70	24	68	75	20
Potent Cap.:	1592	xxxx	xxxxx	1604	xxxx	xxxxx	923	824	1058	930	820	1064
Move Cap.:	1592	xxxx	xxxxx	1604	xxxx	xxxxx	906	819	1058	920	814	1064
Volume/Cap:	0.00	xxxx	xxxx	0.00	xxxx	xxxx	0.00	0.00	0.00	0.01	0.01	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.3	xxxx	xxxxx	7.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	865	xxxxx	xxxx	932	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.0	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.2	xxxxx	xxxxx	9.0	xxxxx
Shared LOS:	*	*	*	*	*	*	*	A	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			9.2			9.0		
ApproachLOS:	*			*			A			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #3 Maine Avenue/8th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.054
Loss Time (sec): 0 Average Delay (sec/veh): 7.1
Optimal Cycle: 0 Level Of Service: A

Street Name:	Maine Avenue								8th Street							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	0	0	1	0	0	0	1!	0	0	0	1	0	0	0	0	0	1!	0	0
Volume Module:																				
Base Vol:	0		5		11	9		4		1	1		22		0	14		25		10
Growth 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	
Initial Bse:	0		5		11	9		4		1	1		22		0	14		25		10
Added Vol:	0		0		0	0		0		0	0		0		0	0		0		0
PasserByVol:	0		0		0	0		0		0	0		0		0	0		0		0
Initial Fut:	0		5		11	9		4		1	1		22		0	14		25		10
User 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	
PHF 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	
PHF Volume:	0		5		11	9		4		1	1		22		0	14		25		10
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
Reduced Vol:	0		5		11	9		4		1	1		22		0	14		25		10
PCE 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	
MLF 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	
FinalVolume:	0		5		11	9		4		1	1		22		0	14		25		10
Saturation Flow Module:																				
Adjustment:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Lanes:	0.00	0.31		0.69		0.64	0.29		0.07		0.04	0.96		0.00		0.29	0.51		0.20	
Final Sat.:	0	303		666		549	244		61		39	850		0		261	466		186	
Capacity Analysis Module:																				
Vol/Sat:	xxxx	0.02		0.02		0.02	0.02		0.02		0.03	0.03		xxxx		0.05	0.05		0.05	
Crit Moves:			****					****					****					****		
Delay/Veh:	0.0	6.7		6.7		7.2	7.2		7.2		7.1	7.1		0.0		7.1	7.1		7.1	
Delay 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	
AdjDel/Veh:	0.0	6.7		6.7		7.2	7.2		7.2		7.1	7.1		0.0		7.1	7.1		7.1	
LOS by Move:	*	A		A		A	A		A		A	A		*		A	A		A	
ApproachDel:	6.7					7.2					7.1					7.1				
Delay Adj:	1.00					1.00					1.00					1.00				
ApprAdjDel:	6.7					7.2					7.1					7.1				
LOS by Appr:	A					A					A					A				
AllWayAvgQ:	0.0	0.0		0.0		0.0	0.0		0.0		0.0	0.0		0.0		0.1	0.1		0.1	

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Daisy Avenue/Anaheim Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.713
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 52 Level Of Service: C

Street Name:	Daisy Avenue								Anaheim Street							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted					Permitted					Permitted					Permitted				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Y+R:	4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0	
Lanes:	0	0	1!	0	0	0	0	1!	0	0	1	0	1	1	0	1	0	1	1	0
Volume Module:																				
Base Vol:	76		8		32	16		11		13	35		1509		133	28		840		7
Growth 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	
Initial Bse:	76		8		32	16		11		13	35		1509		133	28		840		7
Added Vol:	0		0		0	0		0		0	0		0		0	0		0		0
PasserByVol:	0		0		0	0		0		0	0		0		0	0		0		0
Initial Fut:	76		8		32	16		11		13	35		1509		133	28		840		7
User 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	
PHF 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	
PHF Volume:	76		8		32	16		11		13	35		1509		133	28		840		7
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
Reduced Vol:	76		8		32	16		11		13	35		1509		133	28		840		7
PCE 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	
MLF 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	
FinalVolume:	76		8		32	16		11		13	35		1509		133	28		840		7
Saturation Flow Module:																				
Sat/Lane:	1600	1600		1600		1600	1600		1600		1600	1600		1600		1600	1600		1600	
Adjustment:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Lanes:	0.65	0.07		0.28		0.41	0.27		0.32		1.00	1.84		0.16		1.00	1.98		0.02	
Final Sat.:	1048		110		441	640		440		520	1600		2941		259	1600		3174		26
Capacity Analysis Module:																				
Vol/Sat:	0.05	0.07		0.07		0.01	0.03		0.03		0.02	0.51		0.51		0.02	0.26		0.26	
Crit Moves:		****				****							****			****				

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Daisy Avenue/11th Street

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: A[9.9]

Street Name:	Daisy Avenue						11th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	11	72	9	17	95	11	8	4	6	6	5	14
Growth 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
Initial Bse:	11	72	9	17	95	11	8	4	6	6	5	14
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	72	9	17	95	11	8	4	6	6	5	14
User 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
PHF 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
PHF Volume:	11	72	9	17	95	11	8	4	6	6	5	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	11	72	9	17	95	11	8	4	6	6	5	14
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	106	xxxx	xxxxx	81	xxxx	xxxxx	243	238	101	238	239	77
Potent Cap.:	1498	xxxx	xxxxx	1529	xxxx	xxxxx	716	667	960	721	666	990
Move Cap.:	1498	xxxx	xxxxx	1529	xxxx	xxxxx	692	655	960	703	654	990
Volume/Cap:	0.01	xxxx	xxxx	0.01	xxxx	xxxx	0.01	0.01	0.01	0.01	0.01	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.4	xxxx	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	752	xxxxx	xxxx	824	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.9	xxxxx	xxxxx	9.5	xxxxx
Shared LOS:	*	*	*	*	*	*	*	A	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			9.9			9.5		
ApproachLOS:	*			*			A			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #6 Daisy Avenue/8th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.130
Loss Time (sec): 0 Average Delay (sec/veh): 7.5
Optimal Cycle: 0 Level Of Service: A

Street Name:	Daisy Avenue						8th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	30	70	12	3	53	6	10	23	18	6	17	4
Growth 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
Initial Bse:	30	70	12	3	53	6	10	23	18	6	17	4
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	30	70	12	3	53	6	10	23	18	6	17	4
User 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
PHF 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
PHF Volume:	30	70	12	3	53	6	10	23	18	6	17	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	70	12	3	53	6	10	23	18	6	17	4
PCE 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
MLF 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
FinalVolume:	30	70	12	3	53	6	10	23	18	6	17	4
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.27	0.62	0.11	0.05	0.85	0.10	0.20	0.45	0.35	0.22	0.63	0.15
Final Sat.:	230	537	92	41	730	83	165	379	297	180	510	120
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.13	0.07	0.07	0.07	0.06	0.06	0.06	0.03	0.03	0.03
Crit Moves:		****			****			****			****	
Delay/Veh:	7.7	7.7	7.7	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
Delay 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
AdjDel/Veh:	7.7	7.7	7.7	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	7.7			7.4			7.4			7.4		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	7.7			7.4			7.4			7.4		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 Daisy Avenue/7th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.328
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Street Name:	Daisy Avenue						7th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0	0 0	0 0	0	1 0	0 0	0	0 0	0 1	1	1 0
Volume Module:												
Base Vol:	35	87	0	0	35	49	0	0	0	25	657	46
Growth 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
Initial Bse:	35	87	0	0	35	49	0	0	0	25	657	46
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	35	87	0	0	35	49	0	0	0	25	657	46
User 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
PHF 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
PHF Volume:	35	87	0	0	35	49	0	0	0	25	657	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	87	0	0	35	49	0	0	0	25	657	46
PCE 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
MLF 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
FinalVolume:	35	87	0	0	35	49	0	0	0	25	657	46
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.29	0.71	0.00	0.00	0.42	0.58	0.00	0.00	0.00	0.10	2.71	0.19
Final Sat.:	459	1141	0	0	667	933	0	0	0	165	4332	303
Capacity Analysis Module:												
Vol/Sat:	0.02	0.08	0.00	0.00	0.05	0.05	0.00	0.00	0.00	0.02	0.15	0.15
Crit Moves:	****			****							****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 Daisy Avenue/6th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.452
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 31 Level Of Service: A

Street Name:	Daisy Avenue						6th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0	1 0	0 1	0	0 0	0 1	1	1 0	0 0	0	0 0
Volume Module:												
Base Vol:	0	35	24	27	33	0	73	1307	53	0	0	0
Growth 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
Initial Bse:	0	35	24	27	33	0	73	1307	53	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	35	24	27	33	0	73	1307	53	0	0	0
User 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
PHF 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
PHF Volume:	0	35	24	27	33	0	73	1307	53	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	35	24	27	33	0	73	1307	53	0	0	0
PCE 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
MLF 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
FinalVolume:	0	35	24	27	33	0	73	1307	53	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.59	0.41	0.45	0.55	0.00	0.15	2.74	0.11	0.00	0.00	0.00
Final Sat.:	0	949	651	720	880	0	245	4378	178	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.04	0.04	0.02	0.04	0.00	0.05	0.30	0.30	0.00	0.00	0.00
Crit Moves:	****			****				****				

Scenario Report

Scenario:	Existing Sat Mid
Command:	Default Command
Volume:	Existing Sat Mid
Geometry:	Existing
Impact Fee:	Default Impact Fee
Trip Generation:	None
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Oregon Avenue/Anaheim Street	A	xxxxx	0.444	A	xxxxx	0.444	+ 0.000 V/C
# 2 Maine Avenue/11th Street	A	9.1	0.013	A	9.1	0.013	+ 0.000 D/V
# 3 Maine Avenue/8th Street	A	7.0	0.044	A	7.0	0.044	+ 0.000 V/C
# 4 Daisy Avenue/Anaheim Street	A	xxxxx	0.488	A	xxxxx	0.488	+ 0.000 V/C
# 5 Daisy Avenue/11th Street	A	9.6	0.018	A	9.6	0.018	+ 0.000 D/V
# 6 Daisy Avenue/8th Street	A	7.3	0.090	A	7.3	0.090	+ 0.000 V/C
# 7 Daisy Avenue/7th Street	A	xxxxx	0.298	A	xxxxx	0.298	+ 0.000 V/C
# 8 Daisy Avenue/6th Street	A	xxxxx	0.247	A	xxxxx	0.247	+ 0.000 V/C

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                     Level Of Service Computation Report
       ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
******************************************************************************
Intersection #1 Oregon Avenue/Anaheim Street
******************************************************************************
Cycle (sec):         100                 Critical Vol./Cap.(X):         0.444
Loss Time (sec):      10                 Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        30                 Level Of Service:                  A
******************************************************************************
Street Name:          Oregon Avenue                     Anaheim Street
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:            Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:        0  0  1! 0  0    0  0  1! 0  0    1  0  2  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      19    0   12   22    2   34   31  947   27    7  862   22
Growth 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
Initial Bse:   19    0   12   22    2   34   31  947   27    7  862   22
Added Vol:      0    0    0    0    0    0    0    0    0    0    0    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:   19    0   12   22    2   34   31  947   27    7  862   22
User 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
PHF 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
PHF Volume:    19    0   12   22    2   34   31  947   27    7  862   22
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   19    0   12   22    2   34   31  947   27    7  862   22
PCE 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
MLF 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
FinalVolume:   19    0   12   22    2   34   31  947   27    7  862   22
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1600 1600 1600 1600 1600 1600 1600 1600 1600 1600 1600 1600
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       0.61 0.00 0.39 0.38 0.03 0.59 1.00 2.92 0.08 1.00 1.95 0.05
Final Sat.:   981    0  619  607   55  938 1600 4667  133 1600 3120   80
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.00 0.02 0.01 0.04 0.04 0.02 0.20 0.20 0.00 0.28 0.28
Crit Moves:  ****                ****        ****                ****
******************************************************************************
```



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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                     Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #2 Maine Avenue/11th Street
******************************************************************************
Average Delay (sec/veh):      3.1       Worst Case Level Of Service: A[  9.1]
******************************************************************************
Street Name:            Maine Avenue                      11th Street
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:            Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1   15    6    5   22   14    6   11    3    3    0    3
Growth 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
Initial Bse:    1   15    6    5   22   14    6   11    3    3    0    3
Added Vol:      0    0    0    0    0    0    0    0    0    0    0    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:    1   15    6    5   22   14    6   11    3    3    0    3
User 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
PHF 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
PHF Volume:     1   15    6    5   22   14    6   11    3    3    0    3
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
FinalVolume:    1   15    6    5   22   14    6   11    3    3    0    3
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   36 xxxx xxxxx    21 xxxx xxxxx    61   62    29    66   66    18
Potent Cap.: 1588 xxxx xxxxx  1608 xxxx xxxxx   940  833  1052   932  829  1066
Move Cap.:   1588 xxxx xxxxx  1608 xxxx xxxxx   935  830  1052   918  825  1066
Volume/Cap:  0.00 xxxx  xxxx  0.00 xxxx  xxxx  0.01 0.01  0.00  0.00 0.00  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.0 xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:  7.3 xxxx xxxxx   7.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  888 xxxxx  xxxx  986 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.1 xxxxx xxxxx  0.0 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  9.1 xxxxx xxxxx  8.7 xxxxx
Shared LOS:     *    *     *     *    *     *     *    A     *     *    A     *
ApproachDel:    xxxxxx           xxxxxx              9.1              8.7
ApproachLOS:         *                *                A                A
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #3 Maine Avenue/8th Street

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.044
Loss Time (sec): 0 | Average Delay (sec/veh): 7.0
Optimal Cycle: 0 | Level Of Service: A

Street Name:	Maine Avenue						8th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	1	5	10	16	5	3	2	16	4	12	16	12
Growth 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
Initial Bse:	1	5	10	16	5	3	2	16	4	12	16	12
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	5	10	16	5	3	2	16	4	12	16	12
User 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
PHF 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
PHF Volume:	1	5	10	16	5	3	2	16	4	12	16	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	5	10	16	5	3	2	16	4	12	16	12
PCE 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
MLF 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
FinalVolume:	1	5	10	16	5	3	2	16	4	12	16	12
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.06	0.31	0.63	0.67	0.21	0.12	0.09	0.73	0.18	0.30	0.40	0.30
Final Sat.:	60	300	600	577	180	108	82	660	165	275	367	275
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.03	0.03	0.03	0.02	0.02	0.02	0.04	0.04	0.04
Crit Moves:	****			****			****			****		
Delay/Veh:	6.7	6.7	6.7	7.2	7.2	7.2	7.0	7.0	7.0	7.1	7.1	7.1
Delay 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
AdjDel/Veh:	6.7	6.7	6.7	7.2	7.2	7.2	7.0	7.0	7.0	7.1	7.1	7.1
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	6.7			7.2			7.0			7.1		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	6.7			7.2			7.0			7.1		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Daisy Avenue/Anaheim Street

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.488
Loss Time (sec): 10 | Average Delay (sec/veh): xxxxxx
Optimal Cycle: 33 | Level Of Service: A

Street Name:	Daisy Avenue						Anaheim Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	51	12	40	8	7	12	14	886	73	30	831	12
Growth 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
Initial Bse:	51	12	40	8	7	12	14	886	73	30	831	12
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	51	12	40	8	7	12	14	886	73	30	831	12
User 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
PHF 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
PHF Volume:	51	12	40	8	7	12	14	886	73	30	831	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	51	12	40	8	7	12	14	886	73	30	831	12
PCE 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
MLF 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
FinalVolume:	51	12	40	8	7	12	14	886	73	30	831	12
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.49	0.12	0.39	0.30	0.26	0.44	1.00	1.85	0.15	1.00	1.97	0.03
Final Sat.:	792	186	621	474	415	711	1600	2956	244	1600	3154	46
Capacity Analysis Module:												
Vol/Sat:	0.03	0.06	0.06	0.01	0.02	0.02	0.01	0.30	0.30	0.02	0.26	0.26
Crit Moves:	****			****			****			****		

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Daisy Avenue/11th Street

Average Delay (sec/veh): 3.1 Worst Case Level Of Service: A[9.6]

Street Name:	Daisy Avenue						11th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	2	54	2	5	54	5	15	12	2	6	6	12
Growth 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
Initial Bse:	2	54	2	5	54	5	15	12	2	6	6	12
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	54	2	5	54	5	15	12	2	6	6	12
User 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
PHF 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
PHF Volume:	2	54	2	5	54	5	15	12	2	6	6	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	54	2	5	54	5	15	12	2	6	6	12
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	59	xxxx	xxxxx	56	xxxx	xxxxx	135	127	57	133	128	55
Potent Cap.:	1558	xxxx	xxxxx	1562	xxxx	xxxxx	842	768	1016	844	766	1018
Move Cap.:	1558	xxxx	xxxxx	1562	xxxx	xxxxx	824	764	1016	830	763	1018
Volume/Cap:	0.00	xxxx	xxxx	0.00	xxxx	xxxx	0.02	0.02	0.00	0.01	0.01	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.3	xxxx	xxxxx	7.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	808	xxxxx	xxxx	892	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.6	xxxxx	xxxxx	9.1	xxxxx
Shared LOS:	*	*	*	*	*	*	*	A	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			9.6			9.1		
ApproachLOS:	*			*			A			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #6 Daisy Avenue/8th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.090
Loss Time (sec): 0 Average Delay (sec/veh): 7.3
Optimal Cycle: 0 Level Of Service: A

Street Name:	Daisy Avenue									8th Street		
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	10	24	20	7	15	6	6	33	5	23	40	15
Growth 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
Initial Bse:	10	24	20	7	15	6	6	33	5	23	40	15
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	10	24	20	7	15	6	6	33	5	23	40	15
User 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
PHF 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
PHF Volume:	10	24	20	7	15	6	6	33	5	23	40	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	24	20	7	15	6	6	33	5	23	40	15
PCE 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
MLF 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
FinalVolume:	10	24	20	7	15	6	6	33	5	23	40	15
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.19	0.44	0.37	0.25	0.54	0.21	0.14	0.75	0.11	0.29	0.52	0.19
Final Sat.:	162	390	325	212	454	182	117	644	98	257	447	167
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.06	0.03	0.03	0.03	0.05	0.05	0.05	0.09	0.09	0.09
Crit Moves:	****			****			****			****		
Delay/Veh:	7.2	7.2	7.2	7.3	7.3	7.3	7.3	7.3	7.3	7.4	7.4	7.4
Delay 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
AdjDel/Veh:	7.2	7.2	7.2	7.3	7.3	7.3	7.3	7.3	7.3	7.4	7.4	7.4
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	7.2			7.3			7.3			7.4		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	7.2			7.3			7.3			7.4		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 Daisy Avenue/7th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.298
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Street Name:	Daisy Avenue						7th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0	0 0	0 0	0 1	0	0 0	0	0 0	0 1	1	1 0
Volume Module:												
Base Vol:	32	34	0	0	27	23	0	0	0	23	639	41
Growth 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
Initial Bse:	32	34	0	0	27	23	0	0	0	23	639	41
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	34	0	0	27	23	0	0	0	23	639	41
User 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
PHF 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
PHF Volume:	32	34	0	0	27	23	0	0	0	23	639	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	32	34	0	0	27	23	0	0	0	23	639	41
PCE 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
MLF 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
FinalVolume:	32	34	0	0	27	23	0	0	0	23	639	41
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.48	0.52	0.00	0.00	0.54	0.46	0.00	0.00	0.00	0.10	2.73	0.17
Final Sat.:	776	824	0	0	864	736	0	0	0	157	4363	280
Capacity Analysis Module:												
Vol/Sat:	0.02	0.04	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.01	0.15	0.15
Crit Moves:	****				****						****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 Daisy Avenue/6th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.247
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

Street Name:	Daisy Avenue						6th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0	1 0	0 1	0	0 0	0 1	1	1 0	0 0	0	0 0
Volume Module:												
Base Vol:	0	23	16	15	37	0	30	478	37	0	0	0
Growth 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
Initial Bse:	0	23	16	15	37	0	30	478	37	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	23	16	15	37	0	30	478	37	0	0	0
User 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
PHF 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
PHF Volume:	0	23	16	15	37	0	30	478	37	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	23	16	15	37	0	30	478	37	0	0	0
PCE 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
MLF 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
FinalVolume:	0	23	16	15	37	0	30	478	37	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.59	0.41	0.29	0.71	0.00	0.17	2.63	0.20	0.00	0.00	0.00
Final Sat.:	0	944	656	462	1138	0	264	4210	326	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.02	0.02	0.01	0.03	0.00	0.02	0.11	0.11	0.00	0.00	0.00
Crit Moves:		****		****				****				

APPENDIX C

CUMULATIVE LEVEL OF SERVICE WORKSHEETS

Scenario Report

Scenario:	Cumulative PM
Command:	Default Command
Volume:	Cumulative PM
Geometry:	Cumulative
Impact Fee:	Default Impact Fee
Trip Generation:	Cumulative PM
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in	
# 1 Oregon Avenue/Anaheim Street	B	xxxxx	0.608	B	xxxxx	0.608	+ 0.000	V/C
# 2 Maine Avenue/11th Street	A	9.2	0.012	A	9.2	0.012	+ 0.000	D/V
# 3 Maine Avenue/8th Street	A	7.1	0.059	A	7.1	0.059	+ 0.000	V/C
# 4 Daisy Avenue/Anaheim Street	C	xxxxx	0.774	C	xxxxx	0.774	+ 0.000	V/C
# 5 Daisy Avenue/11th Street	B	10.1	0.016	B	10.1	0.016	+ 0.000	D/V
# 6 Daisy Avenue/8th Street	A	7.6	0.145	A	7.6	0.145	+ 0.000	V/C
# 7 Daisy Avenue/7th Street	A	xxxxx	0.349	A	xxxxx	0.349	+ 0.000	V/C
# 8 Daisy Avenue/6th Street	A	xxxxx	0.488	A	xxxxx	0.488	+ 0.000	V/C

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Oregon Avenue/Anaheim Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.608
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 41 Level Of Service: B

Street Name:	Oregon Avenue						Anaheim Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	2 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	39	2	6	36	1	89	120	1628	45	12	886	21
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	43	2	7	40	1	98	132	1791	50	13	975	23
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	2	7	40	1	98	132	1791	50	13	975	23
User 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
PHF 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
PHF Volume:	43	2	7	40	1	98	132	1791	50	13	975	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	2	7	40	1	98	132	1791	50	13	975	23
PCE 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
MLF 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
FinalVolume:	43	2	7	40	1	98	132	1791	50	13	975	23
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.83	0.04	0.13	0.28	0.01	0.71	1.00	2.92	0.08	1.00	1.95	0.05
Final Sat.:	1328	68	204	457	13	1130	1600	4671	129	1600	3126	74
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.03	0.02	0.09	0.09	0.08	0.38	0.38	0.01	0.31	0.31
Crit Moves:	****				****		****				****	

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Maine Avenue/11th Street

Average Delay (sec/veh): 3.6 Worst Case Level Of Service: A[9.2]

Street Name:	Maine Avenue						11th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	6	15	9	5	15	18	1	4	1	10	6	8
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	7	17	10	6	17	20	1	4	1	11	7	9
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	17	10	6	17	20	1	4	1	11	7	9
User 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
PHF 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
PHF Volume:	7	17	10	6	17	20	1	4	1	11	7	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	7	17	10	6	17	20	1	4	1	11	7	9
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	36	xxxx	xxxxx	26	xxxx	xxxxx	80	77	26	75	82	21
Potent Cap.:	1588	xxxx	xxxxx	1601	xxxx	xxxxx	913	817	1055	920	812	1062
Move Cap.:	1588	xxxx	xxxxx	1601	xxxx	xxxxx	895	811	1055	910	806	1062
Volume/Cap:	0.00	xxxx	xxxx	0.00	xxxx	xxxx	0.00	0.01	0.00	0.01	0.01	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.3	xxxx	xxxxx	7.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	857	xxxxx	xxxx	924	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.0	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.2	xxxxx	xxxxx	9.0	xxxxx
Shared LOS:	*	*	*	*	*	*	*	A	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			9.2			9.0		
ApproachLOS:	*			*			A			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #3 Maine Avenue/8th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.059
Loss Time (sec): 0 Average Delay (sec/veh): 7.1
Optimal Cycle: 0 Level Of Service: A

Street Name:	Maine Avenue								8th Street							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0	1 0	0	0	1!	0 0	0	1	0	0 0	0	0	1!	0 0
Volume Module:																
Base Vol:	0	5	11		9	4		1	1	22		0	14	25		10
Growth Adj:	1.10	1.10	1.10		1.10	1.10		1.10	1.10	1.10		1.10	1.10	1.10		1.10
Initial Bse:	0	6	12		10	4		1	1	24		0	15	28		11
Added Vol:	0	0	0		0	0		0	0	0		0	0	0		0
PasserByVol:	0	0	0		0	0		0	0	0		0	0	0		0
Initial Fut:	0	6	12		10	4		1	1	24		0	15	28		11
User 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
PHF 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
PHF Volume:	0	6	12		10	4		1	1	24		0	15	28		11
Reduct Vol:	0	0	0		0	0		0	0	0		0	0	0		0
Reduced Vol:	0	6	12		10	4		1	1	24		0	15	28		11
PCE 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
MLF 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
FinalVolume:	0	6	12		10	4		1	1	24		0	15	28		11
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Lanes:	0.00	0.31	0.69		0.64	0.29		0.07	0.04	0.96		0.00	0.29	0.51		0.20
Final Sat.:	0	301	662		547	243		61	39	848		0	260	464		186
Capacity Analysis Module:																
Vol/Sat:	xxxx	0.02	0.02		0.02	0.02		0.02	0.03	0.03		xxxx	0.06	0.06		0.06
Crit Moves:			****			****				****				****		
Delay/Veh:	0.0	6.7	6.7		7.2	7.2		7.2	7.1	7.1		0.0	7.2	7.2		7.2
Delay 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
AdjDel/Veh:	0.0	6.7	6.7		7.2	7.2		7.2	7.1	7.1		0.0	7.2	7.2		7.2
LOS by Move:	*	A	A		A	A		A	A	A		*	A	A		A
ApproachDel:	6.7				7.2				7.1				7.2			
Delay Adj:	1.00				1.00				1.00				1.00			
ApprAdjDel:	6.7				7.2				7.1				7.2			
LOS by Appr:	A				A				A				A			
AllWayAvgQ:	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.1	0.1		0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Daisy Avenue/Anaheim Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.774
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 61 Level Of Service: C

Street Name:	Daisy Avenue								Anaheim Street							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	1	1 0	1	0	1	1 0
Volume Module:																
Base Vol:	76	8	32		16	11		13	35	1509		133	28	840		7
Growth Adj:	1.10	1.10	1.10		1.10	1.10		1.10	1.10	1.10		1.10	1.10	1.10		1.10
Initial Bse:	84	9	35		18	12		14	39	1660		146	31	924		8
Added Vol:	0	0	0		0	0		0	0	0		0	0	0		0
PasserByVol:	0	0	0		0	0		0	0	0		0	0	0		0
Initial Fut:	84	9	35		18	12		14	39	1660		146	31	924		8
User 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
PHF 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
PHF Volume:	84	9	35		18	12		14	39	1660		146	31	924		8
Reduct Vol:	0	0	0		0	0		0	0	0		0	0	0		0
Reduced Vol:	84	9	35		18	12		14	39	1660		146	31	924		8
PCE 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
MLF 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
FinalVolume:	84	9	35		18	12		14	39	1660		146	31	924		8
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600		1600	1600	1600		1600	1600	1600		1600
Adjustment:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Lanes:	0.65	0.07	0.28		0.41	0.27		0.32	1.00	1.84		0.16	1.00	1.98		0.02
Final Sat.:	1048	110	441		640	440		520	1600	2941		259	1600	3174		26
Capacity Analysis Module:																
Vol/Sat:	0.05	0.08	0.08		0.01	0.03		0.03	0.02	0.56		0.56	0.02	0.29		0.29
Crit Moves:		****			****					****			****			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Daisy Avenue/11th Street

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: B[10.1]

Street Name:	Daisy Avenue						11th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	11	72	9	17	95	11	8	4	6	6	5	14
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	12	79	10	19	105	12	9	4	7	7	6	15
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	12	79	10	19	105	12	9	4	7	7	6	15
User 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
PHF 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
PHF Volume:	12	79	10	19	105	12	9	4	7	7	6	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	12	79	10	19	105	12	9	4	7	7	6	15
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	117	xxxx	xxxxx	89	xxxx	xxxxx	267	261	111	262	262	84
Potent Cap.:	1485	xxxx	xxxxx	1519	xxxx	xxxxx	690	647	948	695	646	981
Move Cap.:	1485	xxxx	xxxxx	1519	xxxx	xxxxx	664	634	948	676	633	981
Volume/Cap:	0.01	xxxx	xxxx	0.01	xxxx	xxxx	0.01	0.01	0.01	0.01	0.01	0.02
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.4	xxxx	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	729	xxxxx	xxxx	805	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.1	xxxxx	xxxxx	9.6	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			10.1			9.6		
ApproachLOS:	*			*			B			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #6 Daisy Avenue/8th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.145
Loss Time (sec): 0 Average Delay (sec/veh): 7.6
Optimal Cycle: 0 Level Of Service: A

Street Name:	Daisy Avenue						8th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	30	70	12	3	53	6	10	23	18	6	17	4
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	33	77	13	3	58	7	11	25	20	7	19	4
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	77	13	3	58	7	11	25	20	7	19	4
User 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
PHF 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
PHF Volume:	33	77	13	3	58	7	11	25	20	7	19	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	77	13	3	58	7	11	25	20	7	19	4
PCE 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
MLF 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
FinalVolume:	33	77	13	3	58	7	11	25	20	7	19	4
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.27	0.62	0.11	0.05	0.85	0.10	0.20	0.45	0.35	0.22	0.63	0.15
Final Sat.:	228	533	91	41	724	82	163	375	293	178	504	119
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.14	0.08	0.08	0.08	0.07	0.07	0.07	0.04	0.04	0.04
Crit Moves:	****			****			****			****		
Delay/Veh:	7.8	7.8	7.8	7.5	7.5	7.5	7.4	7.4	7.4	7.5	7.5	7.5
Delay 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
AdjDel/Veh:	7.8	7.8	7.8	7.5	7.5	7.5	7.4	7.4	7.4	7.5	7.5	7.5
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	7.8			7.5			7.4			7.5		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	7.8			7.5			7.4			7.5		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 Daisy Avenue/7th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.349
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 27 Level Of Service: A

Street Name:	Daisy Avenue						7th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0	0 0	0 0	0	1 0	0 0	0	0 0	0 1	1	1 0
Volume Module:												
Base Vol:	35	87	0	0	35	49	0	0	0	25	657	46
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	39	96	0	0	39	54	0	0	0	28	723	51
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	96	0	0	39	54	0	0	0	28	723	51
User 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
PHF 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
PHF Volume:	39	96	0	0	39	54	0	0	0	28	723	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	96	0	0	39	54	0	0	0	28	723	51
PCE 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
MLF 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
FinalVolume:	39	96	0	0	39	54	0	0	0	28	723	51
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.29	0.71	0.00	0.00	0.42	0.58	0.00	0.00	0.00	0.10	2.71	0.19
Final Sat.:	459	1141	0	0	667	933	0	0	0	165	4332	303
Capacity Analysis Module:												
Vol/Sat:	0.02	0.08	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.02	0.17	0.17
Crit Moves:	****				****						****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 Daisy Avenue/6th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.488
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 33 Level Of Service: A

Street Name:	Daisy Avenue						6th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0	1 0	0 1	0	0 0	0 1	1	1 0	0 0	0	0 0
Volume Module:												
Base Vol:	0	35	24	27	33	0	73	1307	53	0	0	0
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	0	39	26	30	36	0	80	1438	58	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	39	26	30	36	0	80	1438	58	0	0	0
User 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
PHF 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
PHF Volume:	0	39	26	30	36	0	80	1438	58	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	39	26	30	36	0	80	1438	58	0	0	0
PCE 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
MLF 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
FinalVolume:	0	39	26	30	36	0	80	1438	58	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.59	0.41	0.45	0.55	0.00	0.15	2.74	0.11	0.00	0.00	0.00
Final Sat.:	0	949	651	720	880	0	245	4378	178	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.04	0.04	0.02	0.04	0.00	0.05	0.33	0.33	0.00	0.00	0.00
Crit Moves:		****		****				****				

Scenario Report

Scenario:	Cumulative Sat Mid
Command:	Default Command
Volume:	Cumulative Sat Mid
Geometry:	Cumulative
Impact Fee:	Default Impact Fee
Trip Generation:	Cumulative Sat Mid
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in	
# 1 Oregon Avenue/Anaheim Street	A	xxxxx	0.478	A	xxxxx	0.478	+ 0.000	V/C
# 2 Maine Avenue/11th Street	A	9.2	0.015	A	9.2	0.015	+ 0.000	D/V
# 3 Maine Avenue/8th Street	A	7.1	0.048	A	7.1	0.048	+ 0.000	V/C
# 4 Daisy Avenue/Anaheim Street	A	xxxxx	0.527	A	xxxxx	0.527	+ 0.000	V/C
# 5 Daisy Avenue/11th Street	A	9.7	0.020	A	9.7	0.020	+ 0.000	D/V
# 6 Daisy Avenue/8th Street	A	7.4	0.099	A	7.4	0.099	+ 0.000	V/C
# 7 Daisy Avenue/7th Street	A	xxxxx	0.317	A	xxxxx	0.317	+ 0.000	V/C
# 8 Daisy Avenue/6th Street	A	xxxxx	0.262	A	xxxxx	0.262	+ 0.000	V/C

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                    Level Of Service Computation Report
       ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Oregon Avenue/Anaheim Street
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.478
Loss Time (sec):      10                Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        32                Level Of Service:                  A
********************************************************************************
Street Name:          Oregon Avenue                     Anaheim Street
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:        0  0  1! 0  0    0  0  1! 0  0    1  0  2  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      19    0   12   22    2   34   31  947   27    7  862   22
Growth Adj:  1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10
Initial Bse:   21    0   13   24    2   37   34 1042   30    8  948   24
Added Vol:      0    0    0    0    0    0    0    0    0    0    0    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:   21    0   13   24    2   37   34 1042   30    8  948   24
User 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
PHF 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
PHF Volume:    21    0   13   24    2   37   34 1042   30    8  948   24
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   21    0   13   24    2   37   34 1042   30    8  948   24
PCE 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
MLF 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
FinalVolume:   21    0   13   24    2   37   34 1042   30    8  948   24
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1600 1600 1600 1600 1600 1600 1600 1600 1600 1600 1600 1600
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       0.61 0.00 0.39 0.38 0.03 0.59 1.00 2.92 0.08 1.00 1.95 0.05
Final Sat.:   981    0  619  607   55  938 1600 4667  133 1600 3120   80
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.00 0.02 0.02 0.04 0.04 0.02 0.22 0.22 0.00 0.30 0.30
Crit Moves:  ****                ****        ****                ****
********************************************************************************
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                    Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #2 Maine Avenue/11th Street
********************************************************************************
Average Delay (sec/veh):      3.1       Worst Case Level Of Service: A[  9.2]
********************************************************************************
Street Name:           Maine Avenue                      11th Street
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1   15    6    5   22   14    6   11    3    3    0    3
Growth Adj:  1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10
Initial Bse:    1   17    7    6   24   15    7   12    3    3    0    3
Added Vol:      0    0    0    0    0    0    0    0    0    0    0    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:    1   17    7    6   24   15    7   12    3    3    0    3
User 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
PHF 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
PHF Volume:     1   17    7    6   24   15    7   12    3    3    0    3
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
FinalVolume:    1   17    7    6   24   15    7   12    3    3    0    3
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   40 xxxx xxxxx    23 xxxx xxxxx    67   68    32    73   73    20
Potent Cap.: 1583 xxxx xxxxx  1605 xxxx xxxxx   932  826  1048   923  822  1064
Move Cap.:   1583 xxxx xxxxx  1605 xxxx xxxxx   926  823  1048   907  818  1064
Volume/Cap:  0.00 xxxx  xxxx  0.00 xxxx  xxxx  0.01 0.01  0.00  0.00 0.00  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.0 xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:  7.3 xxxx xxxxx   7.3 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  881 xxxxx  xxxx  979 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.1 xxxxx xxxxx  0.0 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  9.2 xxxxx xxxxx  8.7 xxxxx
Shared LOS:     *    *     *     *    *     *     *    A     *     *    A     *
ApproachDel:    xxxxxx            xxxxxx              9.2              8.7
ApproachLOS:         *                 *                A                A
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #3 Maine Avenue/8th Street

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.048
Loss Time (sec): 0 | Average Delay (sec/veh): 7.1
Optimal Cycle: 0 | Level Of Service: A

Street Name:	Maine Avenue						8th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1! 0	0	0	1! 0	0	0	1! 0	0	0	1! 0	0
Volume Module:													
Base Vol:	1	5	10	16	5	3	2	16	4	12	16	12
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	1	6	11	18	6	3	2	18	4	13	18	13
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	6	11	18	6	3	2	18	4	13	18	13
User 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
PHF 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
PHF Volume:	1	6	11	18	6	3	2	18	4	13	18	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	6	11	18	6	3	2	18	4	13	18	13
PCE 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
MLF 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
FinalVolume:	1	6	11	18	6	3	2	18	4	13	18	13
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.06	0.31	0.63	0.67	0.21	0.12	0.09	0.73	0.18	0.30	0.40	0.30
Final Sat.:	60	299	598	575	180	108	82	658	164	275	366	275
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.05	0.05
Crit Moves:	****			****			****			****		
Delay/Veh:	6.8	6.8	6.8	7.2	7.2	7.2	7.0	7.0	7.0	7.1	7.1	7.1
Delay 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
AdjDel/Veh:	6.8	6.8	6.8	7.2	7.2	7.2	7.0	7.0	7.0	7.1	7.1	7.1
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	6.8			7.2			7.0			7.1		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	6.8			7.2			7.0			7.1		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Daisy Avenue/Anaheim Street

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.527
Loss Time (sec): 10 | Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 | Level Of Service: A

Street Name:	Daisy Avenue						Anaheim Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0	1	1	0	1	0	1	1	0
Volume Module:													
Base Vol:	51	12	40	8	7	12	14	886	73	30	831	12
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	56	13	44	9	8	13	15	975	80	33	914	13
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	56	13	44	9	8	13	15	975	80	33	914	13
User 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
PHF 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
PHF Volume:	56	13	44	9	8	13	15	975	80	33	914	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	13	44	9	8	13	15	975	80	33	914	13
PCE 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
MLF 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
FinalVolume:	56	13	44	9	8	13	15	975	80	33	914	13
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.49	0.12	0.39	0.30	0.26	0.44	1.00	1.85	0.15	1.00	1.97	0.03
Final Sat.:	792	186	621	474	415	711	1600	2956	244	1600	3154	46
Capacity Analysis Module:												
Vol/Sat:	0.04	0.07	0.07	0.01	0.02	0.02	0.01	0.33	0.33	0.02	0.29	0.29
Crit Moves:	****			****			****			****		

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Daisy Avenue/11th Street

Average Delay (sec/veh): 3.2 Worst Case Level Of Service: A[9.7]

Street Name:	Daisy Avenue						11th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	2	54	2	5	54	5	15	12	2	6	6	12
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	2	59	2	6	59	6	17	13	2	7	7	13
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	59	2	6	59	6	17	13	2	7	7	13
User 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
PHF 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
PHF Volume:	2	59	2	6	59	6	17	13	2	7	7	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	59	2	6	59	6	17	13	2	7	7	13
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	65	xxxx	xxxxx	62	xxxx	xxxxx	148	139	62	146	141	61
Potent Cap.:	1550	xxxx	xxxxx	1554	xxxx	xxxxx	825	756	1008	828	754	1010
Move Cap.:	1550	xxxx	xxxxx	1554	xxxx	xxxxx	806	752	1008	812	750	1010
Volume/Cap:	0.00	xxxx	xxxx	0.00	xxxx	xxxx	0.02	0.02	0.00	0.01	0.01	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.3	xxxx	xxxxx	7.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	793	xxxxx	xxxx	880	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.7	xxxxx	xxxxx	9.2	xxxxx
Shared LOS:	*	*	*	*	*	*	*	A	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			9.7			9.2		
ApproachLOS:	*			*			A			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #6 Daisy Avenue/8th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.099
Loss Time (sec): 0 Average Delay (sec/veh): 7.4
Optimal Cycle: 0 Level Of Service: A

Street Name:	Daisy Avenue						8th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	10	24	20	7	15	6	6	33	5	23	40	15
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	11	26	22	8	17	7	7	36	6	25	44	17
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	26	22	8	17	7	7	36	6	25	44	17
User 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
PHF 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
PHF Volume:	11	26	22	8	17	7	7	36	6	25	44	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	26	22	8	17	7	7	36	6	25	44	17
PCE 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
MLF 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
FinalVolume:	11	26	22	8	17	7	7	36	6	25	44	17
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.19	0.44	0.37	0.25	0.54	0.21	0.14	0.75	0.11	0.29	0.52	0.19
Final Sat.:	161	385	321	210	449	180	116	639	97	255	443	166
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.07	0.04	0.04	0.04	0.06	0.06	0.06	0.10	0.10	0.10
Crit Moves:		****			****		****				****	
Delay/Veh:	7.3	7.3	7.3	7.3	7.3	7.3	7.4	7.4	7.4	7.5	7.5	7.5
Delay 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
AdjDel/Veh:	7.3	7.3	7.3	7.3	7.3	7.3	7.4	7.4	7.4	7.5	7.5	7.5
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	7.3			7.3			7.4			7.5		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	7.3			7.3			7.4			7.5		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 Daisy Avenue/7th Street

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.317
Loss Time (sec): 10 | Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 | Level Of Service: A

Street Name:	Daisy Avenue						7th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0	0 0	0 0	0 1	0	0 0	0	0 0	0 1	1	1 0
Volume Module:												
Base Vol:	32	34	0	0	27	23	0	0	0	23	639	41
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	35	37	0	0	30	25	0	0	0	25	703	45
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	35	37	0	0	30	25	0	0	0	25	703	45
User 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
PHF 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
PHF Volume:	35	37	0	0	30	25	0	0	0	25	703	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	37	0	0	30	25	0	0	0	25	703	45
PCE 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
MLF 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
FinalVolume:	35	37	0	0	30	25	0	0	0	25	703	45
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.48	0.52	0.00	0.00	0.54	0.46	0.00	0.00	0.00	0.10	2.73	0.17
Final Sat.:	776	824	0	0	864	736	0	0	0	157	4363	280
Capacity Analysis Module:												
Vol/Sat:	0.02	0.05	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.02	0.16	0.16
Crit Moves:	****				****						****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 Daisy Avenue/6th Street

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.262
Loss Time (sec): 10 | Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 | Level Of Service: A

Street Name:	Daisy Avenue						6th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0	1 0	0 1	0	0 0	0 1	1	1 0	0 0	0	0 0
Volume Module:												
Base Vol:	0	23	16	15	37	0	30	478	37	0	0	0
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	0	25	18	17	41	0	33	526	41	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	25	18	17	41	0	33	526	41	0	0	0
User 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
PHF 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
PHF Volume:	0	25	18	17	41	0	33	526	41	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	25	18	17	41	0	33	526	41	0	0	0
PCE 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
MLF 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
FinalVolume:	0	25	18	17	41	0	33	526	41	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.59	0.41	0.29	0.71	0.00	0.17	2.63	0.20	0.00	0.00	0.00
Final Sat.:	0	944	656	462	1138	0	264	4210	326	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.03	0.03	0.01	0.04	0.00	0.02	0.12	0.12	0.00	0.00	0.00
Crit Moves:	****			****				****				

APPENDIX D

EXISTING PLUS PROJECT LEVEL OF SERVICE WORKSHEETS

Scenario Report

Scenario:	Existing + Project PM
Command:	Default Command
Volume:	Existing PM
Geometry:	Existing
Impact Fee:	Default Impact Fee
Trip Generation:	Project PM
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Oregon Avenue/Anaheim Street	A	xxxxx	0.562	A	xxxxx	0.571	+ 0.009 V/C
# 2 Maine Avenue/11th Street	A	9.2	0.011	A	9.5	0.029	+ 0.283 D/V
# 3 Maine Avenue/8th Street	A	7.1	0.054	A	7.1	0.066	+ 0.012 V/C
# 4 Daisy Avenue/Anaheim Street	C	xxxxx	0.713	C	xxxxx	0.729	+ 0.016 V/C
# 5 Daisy Avenue/11th Street	A	9.9	0.014	B	10.4	0.035	+ 0.454 D/V
# 6 Daisy Avenue/8th Street	A	7.5	0.130	A	7.6	0.143	+ 0.012 V/C
# 7 Daisy Avenue/7th Street	A	xxxxx	0.328	A	xxxxx	0.333	+ 0.005 V/C
# 8 Daisy Avenue/6th Street	A	xxxxx	0.452	A	xxxxx	0.459	+ 0.006 V/C

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Oregon Avenue/Anaheim Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.571
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	A

Street Name:	Oregon Avenue						Anaheim Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	0	1! 0	0	1	0	2	1
Volume Module:												
Base Vol:	39	2	6	36	1	89	120	1628	45	12	886	21
Growth 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
Initial Bse:	39	2	6	36	1	89	120	1628	45	12	886	21
Added Vol:	10	0	0	0	0	0	0	10	10	0	10	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	49	2	6	36	1	89	120	1638	55	12	896	21
User 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
PHF 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
PHF Volume:	49	2	6	36	1	89	120	1638	55	12	896	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	2	6	36	1	89	120	1638	55	12	896	21
PCE 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
MLF 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
FinalVolume:	49	2	6	36	1	89	120	1638	55	12	896	21
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.86	0.03	0.11	0.28	0.01	0.71	1.00	2.90	0.10	1.00	1.95	0.05
Final Sat.:	1375	56	168	457	13	1130	1600	4644	156	1600	3127	73
Capacity Analysis Module:												
Vol/Sat:	0.03	0.04	0.04	0.02	0.08	0.08	0.08	0.35	0.35	0.01	0.29	0.29
Crit Moves:	****				****		****				****	

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Maine Avenue/11th Street

Average Delay (sec/veh): 5.2 Worst Case Level Of Service: A[9.5]

Street Name:	Maine Avenue						11th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1! 0	0	0	0	1! 0	0	0	0	1! 0	0
Volume Module:												
Base Vol:	6	15	9	5	15	18	1	4	1	10	6	8
Growth 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
Initial Bse:	6	15	9	5	15	18	1	4	1	10	6	8
Added Vol:	0	0	0	0	0	0	0	18	0	0	18	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	6	15	9	5	15	18	1	22	1	10	24	8
User 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
PHF 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
PHF Volume:	6	15	9	5	15	18	1	22	1	10	24	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	6	15	9	5	15	18	1	22	1	10	24	8
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	33	xxxx	xxxxx	24	xxxx	xxxxx	82	70	24	77	75	20
Potent Cap.:	1592	xxxx	xxxxx	1604	xxxx	xxxxx	911	824	1058	917	820	1064
Move Cap.:	1592	xxxx	xxxxx	1604	xxxx	xxxxx	879	819	1058	893	814	1064
Volume/Cap:	0.00	xxxx	xxxx	0.00	xxxx	xxxx	0.00	0.03	0.00	0.01	0.03	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.3	xxxx	xxxxx	7.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	829	xxxxx	xxxx	871	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	0.2	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.5	xxxxx	xxxxx	9.3	xxxxx
Shared LOS:	*	*	*	*	*	*	*	A	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			9.5			9.3		
ApproachLOS:	*			*			A			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #3 Maine Avenue/8th Street

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.066
Loss Time (sec): 0 | Average Delay (sec/veh): 7.1
Optimal Cycle: 0 | Level Of Service: A

Street Name:	Maine Avenue								8th Street							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0	1 0	0	0	1!	0 0	0	1	0	0 0	0	0	1!	0 0
Volume Module:																
Base Vol:	0	5	11		9	4		1	1	22		0	14	25		10
Growth 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
Initial Bse:	0	5	11		9	4		1	1	22		0	14	25		10
Added Vol:	0	0	0		0	0		0	0	11		0	0	11		0
PasserByVol:	0	0	0		0	0		0	0	0		0	0	0		0
Initial Fut:	0	5	11		9	4		1	1	33		0	14	36		10
User 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
PHF 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
PHF Volume:	0	5	11		9	4		1	1	33		0	14	36		10
Reduct Vol:	0	0	0		0	0		0	0	0		0	0	0		0
Reduced Vol:	0	5	11		9	4		1	1	33		0	14	36		10
PCE 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
MLF 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
FinalVolume:	0	5	11		9	4		1	1	33		0	14	36		10
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Lanes:	0.00	0.31	0.69		0.64	0.29		0.07	0.03	0.97		0.00	0.23	0.60		0.17
Final Sat.:	0	298	655		541	240		60	26	861		0	212	545		151
Capacity Analysis Module:																
Vol/Sat:	xxxx	0.02	0.02		0.02	0.02		0.02	0.04	0.04		xxxx	0.07	0.07		0.07
Crit Moves:		****				****			****					****		
Delay/Veh:	0.0	6.8	6.8		7.3	7.3		7.3	7.2	7.2		0.0	7.2	7.2		7.2
Delay 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
AdjDel/Veh:	0.0	6.8	6.8		7.3	7.3		7.3	7.2	7.2		0.0	7.2	7.2		7.2
LOS by Move:	*	A	A		A	A		A	A	A		*	A	A		A
ApproachDel:		6.8				7.3				7.2				7.2		
Delay Adj:		1.00				1.00				1.00				1.00		
ApprAdjDel:		6.8				7.3				7.2				7.2		
LOS by Appr:		A				A				A				A		
AllWayAvgQ:	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.1	0.1		0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Daisy Avenue/Anaheim Street

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.729
Loss Time (sec): 10 | Average Delay (sec/veh): xxxxxx
Optimal Cycle: 54 | Level Of Service: C

Street Name:	Daisy Avenue								Anaheim Street							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	1	1 0	1	0	1	1 0
Volume Module:																
Base Vol:	76	8	32		16	11		13	35	1509		133	28	840		7
Growth 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
Initial Bse:	76	8	32		16	11		13	35	1509		133	28	840		7
Added Vol:	10	3	4		0	3		0	0	0		10	4	0		0
PasserByVol:	0	0	0		0	0		0	0	0		0	0	0		0
Initial Fut:	86	11	36		16	14		13	35	1509		143	32	840		7
User 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
PHF 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
PHF Volume:	86	11	36		16	14		13	35	1509		143	32	840		7
Reduct Vol:	0	0	0		0	0		0	0	0		0	0	0		0
Reduced Vol:	86	11	36		16	14		13	35	1509		143	32	840		7
PCE 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
MLF 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
FinalVolume:	86	11	36		16	14		13	35	1509		143	32	840		7
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600		1600	1600	1600		1600	1600	1600		1600
Adjustment:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Lanes:	0.65	0.08	0.27		0.37	0.33		0.30	1.00	1.83		0.17	1.00	1.98		0.02
Final Sat.:	1035	132	433		595	521		484	1600	2923		277	1600	3174		26
Capacity Analysis Module:																
Vol/Sat:	0.05	0.08	0.08		0.01	0.03		0.03	0.02	0.52		0.52	0.02	0.26		0.26
Crit Moves:		****			****					****			****			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Daisy Avenue/11th Street

Average Delay (sec/veh): 2.9 Worst Case Level Of Service: B[10.4]

Street Name:	Daisy Avenue						11th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	11	72	9	17	95	11	8	4	6	6	5	14
Growth 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
Initial Bse:	11	72	9	17	95	11	8	4	6	6	5	14
Added Vol:	0	0	0	0	0	16	16	2	0	0	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	72	9	17	95	27	24	6	6	6	7	14
User 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
PHF 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
PHF Volume:	11	72	9	17	95	27	24	6	6	6	7	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	11	72	9	17	95	27	24	6	6	6	7	14
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	122	xxxx	xxxxx	81	xxxx	xxxxx	252	246	109	247	255	77
Potent Cap.:	1478	xxxx	xxxxx	1529	xxxx	xxxxx	706	660	951	711	653	990
Move Cap.:	1478	xxxx	xxxxx	1529	xxxx	xxxxx	680	648	951	691	640	990
Volume/Cap:	0.01	xxxx	xxxx	0.01	xxxx	xxxx	0.04	0.01	0.01	0.01	0.01	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.5	xxxx	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	708	xxxxx	xxxx	800	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.4	xxxxx	xxxxx	9.7	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			10.4			9.7		
ApproachLOS:	*			*			B			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #6 Daisy Avenue/8th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.143
Loss Time (sec): 0 Average Delay (sec/veh): 7.6
Optimal Cycle: 0 Level Of Service: A

Street Name:	Daisy Avenue						8th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	30	70	12	3	53	6	10	23	18	6	17	4
Growth 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
Initial Bse:	30	70	12	3	53	6	10	23	18	6	17	4
Added Vol:	9	0	0	0	0	0	0	2	9	0	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	70	12	3	53	6	10	25	27	6	19	4
User 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
PHF 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
PHF Volume:	39	70	12	3	53	6	10	25	27	6	19	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	70	12	3	53	6	10	25	27	6	19	4
PCE 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
MLF 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
FinalVolume:	39	70	12	3	53	6	10	25	27	6	19	4
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.32	0.58	0.10	0.05	0.85	0.10	0.16	0.40	0.44	0.21	0.65	0.14
Final Sat.:	274	491	84	41	721	82	136	341	369	166	525	111
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.14	0.07	0.07	0.07	0.07	0.07	0.07	0.04	0.04	0.04
Crit Moves:	****			****			****			****		
Delay/Veh:	7.8	7.8	7.8	7.5	7.5	7.5	7.4	7.4	7.4	7.5	7.5	7.5
Delay 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
AdjDel/Veh:	7.8	7.8	7.8	7.5	7.5	7.5	7.4	7.4	7.4	7.5	7.5	7.5
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	7.8			7.5			7.4			7.5		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	7.8			7.5			7.4			7.5		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 Daisy Avenue/7th Street

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.333
Loss Time (sec): 10 | Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 | Level Of Service: A

Street Name:	Daisy Avenue						7th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0	0 0	0 0	0 1	0	0 0	0	0 0	0 1	1 1	0
Volume Module:												
Base Vol:	35	87	0	0	35	49	0	0	0	25	657	46
Growth 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
Initial Bse:	35	87	0	0	35	49	0	0	0	25	657	46
Added Vol:	0	2	0	0	9	0	0	0	0	0	0	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	35	89	0	0	44	49	0	0	0	25	657	54
User 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
PHF 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
PHF Volume:	35	89	0	0	44	49	0	0	0	25	657	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	89	0	0	44	49	0	0	0	25	657	54
PCE 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
MLF 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
FinalVolume:	35	89	0	0	44	49	0	0	0	25	657	54
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.28	0.72	0.00	0.00	0.47	0.53	0.00	0.00	0.00	0.10	2.68	0.22
Final Sat.:	452	1148	0	0	757	843	0	0	0	163	4285	352
Capacity Analysis Module:												
Vol/Sat:	0.02	0.08	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.02	0.15	0.15
Crit Moves:	****				****						****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 Daisy Avenue/6th Street

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.459
Loss Time (sec): 10 | Average Delay (sec/veh): xxxxxx
Optimal Cycle: 31 | Level Of Service: A

Street Name:	Daisy Avenue						6th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0	1 0	0 1	0	0 0	0 1	1	1 0	0 0	0	0
Volume Module:												
Base Vol:	0	35	24	27	33	0	73	1307	53	0	0	0
Growth 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
Initial Bse:	0	35	24	27	33	0	73	1307	53	0	0	0
Added Vol:	0	2	0	8	2	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	37	24	35	35	0	73	1307	53	0	0	0
User 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
PHF 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
PHF Volume:	0	37	24	35	35	0	73	1307	53	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	37	24	35	35	0	73	1307	53	0	0	0
PCE 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
MLF 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
FinalVolume:	0	37	24	35	35	0	73	1307	53	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.61	0.39	0.50	0.50	0.00	0.15	2.74	0.11	0.00	0.00	0.00
Final Sat.:	0	970	630	800	800	0	245	4378	178	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.04	0.04	0.02	0.04	0.00	0.05	0.30	0.30	0.00	0.00	0.00
Crit Moves:		****		****				****				

Scenario Report

Scenario:	Existing Sat + Project Mid
Command:	Default Command
Volume:	Existing Sat Mid
Geometry:	Existing
Impact Fee:	Default Impact Fee
Trip Generation:	Project Sat Mid
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Oregon Avenue/Anaheim Street	A	xxxxx	0.444	A	xxxxx	0.463	+ 0.019 V/C
# 2 Maine Avenue/11th Street	A	9.1	0.013	A	9.6	0.058	+ 0.426 D/V
# 3 Maine Avenue/8th Street	A	7.0	0.044	A	7.2	0.069	+ 0.025 V/C
# 4 Daisy Avenue/Anaheim Street	A	xxxxx	0.488	A	xxxxx	0.520	+ 0.033 V/C
# 5 Daisy Avenue/11th Street	A	9.6	0.018	A	10.0	0.061	+ 0.345 D/V
# 6 Daisy Avenue/8th Street	A	7.3	0.090	A	7.4	0.095	+ 0.005 V/C
# 7 Daisy Avenue/7th Street	A	xxxxx	0.298	A	xxxxx	0.313	+ 0.015 V/C
# 8 Daisy Avenue/6th Street	A	xxxxx	0.247	A	xxxxx	0.259	+ 0.012 V/C

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
       ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
*******************************************************************************
Intersection #1 Oregon Avenue/Anaheim Street
*******************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.463
Loss Time (sec):      10                Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        31                Level Of Service:                  A
*******************************************************************************
Street Name:          Oregon Avenue                     Anaheim Street
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:        0  0  1! 0  0    0  0  1! 0  0    1  0  2  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      19    0   12   22    2   34   31  947   27    7  862   22
Growth 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
Initial Bse:   19    0   12   22    2   34   31  947   27    7  862   22
Added Vol:     20    0    0    0    0    0    0   20   20    0   20    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:   39    0   12   22    2   34   31  967   47    7  882   22
User 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
PHF 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
PHF Volume:    39    0   12   22    2   34   31  967   47    7  882   22
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   39    0   12   22    2   34   31  967   47    7  882   22
PCE 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
MLF 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
FinalVolume:   39    0   12   22    2   34   31  967   47    7  882   22
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1600 1600 1600 1600 1600 1600 1600 1600 1600 1600 1600 1600
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       0.76 0.00 0.24 0.38 0.03 0.59 1.00 2.86 0.14 1.00 1.95 0.05
Final Sat.:  1224    0  376  607   55  938 1600 4578  222 1600 3122   78
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.00 0.03 0.01 0.04 0.04 0.02 0.21 0.21 0.00 0.28 0.28
Crit Moves:  ****                ****        ****                ****
*******************************************************************************
```



```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #2 Maine Avenue/11th Street
*******************************************************************************
Average Delay (sec/veh):      6.1       Worst Case Level Of Service: A[  9.6]
*******************************************************************************
Street Name:           Maine Avenue                      11th Street
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1   15    6    5   22   14    6   11    3    3    0    3
Growth 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
Initial Bse:    1   15    6    5   22   14    6   11    3    3    0    3
Added Vol:      0    0    0    0    0    0    0   37    0    0   37    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:    1   15    6    5   22   14    6   48    3    3   37    3
User 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
PHF 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
PHF Volume:     1   15    6    5   22   14    6   48    3    3   37    3
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
FinalVolume:    1   15    6    5   22   14    6   48    3    3   37    3
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   36 xxxx xxxxx    21 xxxx xxxxx    79   62    29    85   66    18
Potent Cap.: 1588 xxxx xxxxx  1608 xxxx xxxxx   914  833  1052   907  829  1066
Move Cap.:   1588 xxxx xxxxx  1608 xxxx xxxxx   878  830  1052   862  825  1066
Volume/Cap:  0.00 xxxx  xxxx  0.00 xxxx  xxxx  0.01 0.06  0.00  0.00 0.04  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.0 xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:  7.3 xxxx xxxxx   7.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  844 xxxxx  xxxx  841 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.2 xxxxx xxxxx  0.2 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  9.6 xxxxx xxxxx  9.5 xxxxx
Shared LOS:     *    *     *     *    *     *     *    A     *     *    A     *
ApproachDel:    xxxxxx           xxxxxx              9.6              9.5
ApproachLOS:         *                *                A                A
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #3 Maine Avenue/8th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.069
Loss Time (sec): 0 Average Delay (sec/veh): 7.2
Optimal Cycle: 0 Level Of Service: A

Street Name:	Maine Avenue									8th Street						
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	0	1!	0	0	0	0	1!	0	0	0	0	1!	0	0	0	0	1!	0	0
Volume Module:																
Base Vol:	1	5	10		16	5		3	2	16		4	12		16	12
Growth 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
Initial Bse:	1	5	10		16	5		3	2	16		4	12		16	12
Added Vol:	0	0	0		0	0		0	0	22		0	0		22	0
PasserByVol:	0	0	0		0	0		0	0	0		0	0		0	0
Initial Fut:	1	5	10		16	5		3	2	38		4	12		38	12
User 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
PHF 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
PHF Volume:	1	5	10		16	5		3	2	38		4	12		38	12
Reduct Vol:	0	0	0		0	0		0	0	0		0	0		0	0
Reduced Vol:	1	5	10		16	5		3	2	38		4	12		38	12
PCE 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
MLF 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
FinalVolume:	1	5	10		16	5		3	2	38		4	12		38	12
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Lanes:	0.06	0.31	0.63		0.67	0.21		0.12	0.05	0.86		0.09	0.19		0.62	0.19
Final Sat.:	58	290	580		560	175		105	41	770		81	175		553	175
Capacity Analysis Module:																
Vol/Sat:	0.02	0.02	0.02		0.03	0.03		0.03	0.05	0.05		0.05	0.07		0.07	0.07
Crit Moves:		****				****				****					****	
Delay/Veh:	6.8	6.8	6.8		7.3	7.3		7.3	7.2	7.2		7.2	7.2		7.2	7.2
Delay 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
AdjDel/Veh:	6.8	6.8	6.8		7.3	7.3		7.3	7.2	7.2		7.2	7.2		7.2	7.2
LOS by Move:	A	A	A		A	A		A	A	A		A	A		A	A
ApproachDel:	6.8				7.3				7.2				7.2			
Delay Adj:	1.00				1.00				1.00				1.00			
ApprAdjDel:	6.8				7.3				7.2				7.2			
LOS by Appr:	A				A				A				A			
AllWayAvgQ:	0.0	0.0	0.0		0.0	0.0		0.0	0.1	0.1		0.1	0.1		0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Daisy Avenue/Anaheim Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.520
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 35 Level Of Service: A

Street Name:	Daisy Avenue									Anaheim Street						
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	0	1!	0	0	0	0	1!	0	0	1	0	1	1	0	1	0	1	1	0
Volume Module:																
Base Vol:	51	12	40		8	7		12	14	886		73	30	831		12
Growth 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
Initial Bse:	51	12	40		8	7		12	14	886		73	30	831		12
Added Vol:	20	6	8		0	6		0	0	0		20	8	0		0
PasserByVol:	0	0	0		0	0		0	0	0		0	0	0		0
Initial Fut:	71	18	48		8	13		12	14	886		93	38	831		12
User 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
PHF 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
PHF Volume:	71	18	48		8	13		12	14	886		93	38	831		12
Reduct Vol:	0	0	0		0	0		0	0	0		0	0	0		0
Reduced Vol:	71	18	48		8	13		12	14	886		93	38	831		12
PCE 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
MLF 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
FinalVolume:	71	18	48		8	13		12	14	886		93	38	831		12
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600		1600	1600	1600		1600	1600	1600		1600
Adjustment:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Lanes:	0.52	0.13	0.35		0.24	0.40		0.36	1.00	1.81		0.19	1.00	1.97		0.03
Final Sat.:	829	210	561		388	630		582	1600	2896		304	1600	3154		46
Capacity Analysis Module:																
Vol/Sat:	0.04	0.09	0.09		0.01	0.02		0.02	0.01	0.31		0.31	0.02	0.26		0.26
Crit Moves:		****			****					****			****			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Daisy Avenue/11th Street

Average Delay (sec/veh): 3.9 Worst Case Level Of Service: A[10.0]

Street Name:	Daisy Avenue						11th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	2	54	2	5	54	5	15	12	2	6	6	12
Growth 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
Initial Bse:	2	54	2	5	54	5	15	12	2	6	6	12
Added Vol:	0	0	0	0	0	34	34	3	0	0	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	54	2	5	54	39	49	15	2	6	9	12
User 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
PHF 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
PHF Volume:	2	54	2	5	54	39	49	15	2	6	9	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	54	2	5	54	39	49	15	2	6	9	12
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	93	xxxx	xxxxx	56	xxxx	xxxxx	153	144	74	151	162	55
Potent Cap.:	1514	xxxx	xxxxx	1562	xxxx	xxxxx	819	751	994	821	734	1018
Move Cap.:	1514	xxxx	xxxxx	1562	xxxx	xxxxx	799	748	994	804	731	1018
Volume/Cap:	0.00	xxxx	xxxx	0.00	xxxx	xxxx	0.06	0.02	0.00	0.01	0.01	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.4	xxxx	xxxxx	7.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	791	xxxxx	xxxx	855	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.0	xxxxx	xxxxx	9.3	xxxxx
Shared LOS:	*	*	*	*	*	*	*	A	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			10.0			9.3		
ApproachLOS:	*			*			A			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #6 Daisy Avenue/8th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.095
Loss Time (sec): 0 Average Delay (sec/veh): 7.4
Optimal Cycle: 0 Level Of Service: A

Street Name:	Daisy Avenue									8th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	10	24	20	7	15	6	6	33	5	23	40	15
Growth 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
Initial Bse:	10	24	20	7	15	6	6	33	5	23	40	15
Added Vol:	19	0	0	0	0	0	0	3	19	0	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	29	24	20	7	15	6	6	36	24	23	43	15
User 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
PHF 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
PHF Volume:	29	24	20	7	15	6	6	36	24	23	43	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	29	24	20	7	15	6	6	36	24	23	43	15
PCE 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
MLF 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
FinalVolume:	29	24	20	7	15	6	6	36	24	23	43	15
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.40	0.33	0.27	0.25	0.54	0.21	0.09	0.55	0.36	0.28	0.53	0.19
Final Sat.:	334	276	230	207	443	177	80	480	320	242	453	158
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.03	0.03	0.03	0.08	0.08	0.08	0.09	0.09	0.09
Crit Moves:	****			****			****			****		
Delay/Veh:	7.5	7.5	7.5	7.3	7.3	7.3	7.3	7.3	7.3	7.5	7.5	7.5
Delay 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
AdjDel/Veh:	7.5	7.5	7.5	7.3	7.3	7.3	7.3	7.3	7.3	7.5	7.5	7.5
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	7.5			7.3			7.3			7.5		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	7.5			7.3			7.3			7.5		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 Daisy Avenue/7th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.313
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Street Name:	Daisy Avenue						7th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0	0 0	0 0	0 1	0	0 0	0	0 0	0 1	1	1 0
Volume Module:												
Base Vol:	32	34	0	0	27	23	0	0	0	23	639	41
Growth 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
Initial Bse:	32	34	0	0	27	23	0	0	0	23	639	41
Added Vol:	0	3	0	0	19	0	0	0	0	0	0	16
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	37	0	0	46	23	0	0	0	23	639	57
User 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
PHF 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
PHF Volume:	32	37	0	0	46	23	0	0	0	23	639	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	32	37	0	0	46	23	0	0	0	23	639	57
PCE 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
MLF 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
FinalVolume:	32	37	0	0	46	23	0	0	0	23	639	57
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.46	0.54	0.00	0.00	0.67	0.33	0.00	0.00	0.00	0.09	2.67	0.24
Final Sat.:	742	858	0	0	1067	533	0	0	0	154	4266	381
Capacity Analysis Module:												
Vol/Sat:	0.02	0.04	0.00	0.00	0.04	0.04	0.00	0.00	0.00	0.01	0.15	0.15
Crit Moves:	****				****						****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 Daisy Avenue/6th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.259
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 Level Of Service: A

Street Name:	Daisy Avenue						6th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0	1 0	0 1	0	0 0	0 1	1	1 0	0 0	0	0 0
Volume Module:												
Base Vol:	0	23	16	15	37	0	30	478	37	0	0	0
Growth 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
Initial Bse:	0	23	16	15	37	0	30	478	37	0	0	0
Added Vol:	0	3	0	16	3	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	26	16	31	40	0	30	478	37	0	0	0
User 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
PHF 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
PHF Volume:	0	26	16	31	40	0	30	478	37	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	26	16	31	40	0	30	478	37	0	0	0
PCE 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
MLF 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
FinalVolume:	0	26	16	31	40	0	30	478	37	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.62	0.38	0.44	0.56	0.00	0.17	2.63	0.20	0.00	0.00	0.00
Final Sat.:	0	990	610	699	901	0	264	4210	326	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.03	0.03	0.02	0.04	0.00	0.02	0.11	0.11	0.00	0.00	0.00
Crit Moves:		****		****				****				

APPENDIX E

CUMULATIVE PLUS PROJECT LEVEL OF SERVICE WORKSHEETS

Scenario Report

Scenario:	Cumulative + Project PM
Command:	Default Command
Volume:	Cumulative PM
Geometry:	Cumulative
Impact Fee:	Default Impact Fee
Trip Generation:	Cumulative+Project PM
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Oregon Avenue/Anaheim Street	B	xxxxx	0.608	B	xxxxx	0.616	+ 0.008 V/C
# 2 Maine Avenue/11th Street	A	9.2	0.012	A	9.5	0.031	+ 0.284 D/V
# 3 Maine Avenue/8th Street	A	7.1	0.059	A	7.2	0.072	+ 0.012 V/C
# 4 Daisy Avenue/Anaheim Street	C	xxxxx	0.774	C	xxxxx	0.791	+ 0.016 V/C
# 5 Daisy Avenue/11th Street	B	10.1	0.016	B	10.6	0.038	+ 0.488 D/V
# 6 Daisy Avenue/8th Street	A	7.6	0.145	A	7.7	0.157	+ 0.012 V/C
# 7 Daisy Avenue/7th Street	A	xxxxx	0.349	A	xxxxx	0.354	+ 0.005 V/C
# 8 Daisy Avenue/6th Street	A	xxxxx	0.488	A	xxxxx	0.494	+ 0.006 V/C

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Oregon Avenue/Anaheim Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.616
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	41	Level Of Service:	B

Street Name:	Oregon Avenue						Anaheim Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	2 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	39	2	6	36	1	89	120	1628	45	12	886	21
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	43	2	7	40	1	98	132	1791	50	13	975	23
Added Vol:	10	0	0	0	0	0	0	10	10	0	10	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	2	7	40	1	98	132	1801	60	13	985	23
User 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
PHF 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
PHF Volume:	53	2	7	40	1	98	132	1801	60	13	985	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	2	7	40	1	98	132	1801	60	13	985	23
PCE 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
MLF 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
FinalVolume:	53	2	7	40	1	98	132	1801	60	13	985	23
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.86	0.03	0.11	0.28	0.01	0.71	1.00	2.90	0.10	1.00	1.95	0.05
Final Sat.:	1372	57	171	457	13	1130	1600	4646	154	1600	3127	73
Capacity Analysis Module:												
Vol/Sat:	0.03	0.04	0.04	0.02	0.09	0.09	0.08	0.39	0.39	0.01	0.31	0.31
Crit Moves:	****				****			****		****		

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Maine Avenue/11th Street

Average Delay (sec/veh): 5.1 Worst Case Level Of Service: A[9.5]

Street Name:	Maine Avenue						11th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	6	15	9	5	15	18	1	4	1	10	6	8
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	7	17	10	6	17	20	1	4	1	11	7	9
Added Vol:	0	0	0	0	0	0	0	18	0	0	18	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	17	10	6	17	20	1	22	1	11	25	9
User 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
PHF 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
PHF Volume:	7	17	10	6	17	20	1	22	1	11	25	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	7	17	10	6	17	20	1	22	1	11	25	9
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	36	xxxx	xxxxx	26	xxxx	xxxxx	89	77	26	84	82	21
Potent Cap.:	1588	xxxx	xxxxx	1601	xxxx	xxxxx	901	817	1055	908	812	1062
Move Cap.:	1588	xxxx	xxxxx	1601	xxxx	xxxxx	868	811	1055	883	806	1062
Volume/Cap:	0.00	xxxx	xxxx	0.00	xxxx	xxxx	0.00	0.03	0.00	0.01	0.03	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.3	xxxx	xxxxx	7.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	822	xxxxx	xxxx	866	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	0.2	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.5	xxxxx	xxxxx	9.4	xxxxx
Shared LOS:	*	*	*	*	*	*	*	A	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			9.5			9.4		
ApproachLOS:	*			*			A			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #3 Maine Avenue/8th Street

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.072
Loss Time (sec): 0 | Average Delay (sec/veh): 7.2
Optimal Cycle: 0 | Level Of Service: A

Street Name:	Maine Avenue								8th Street							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	0	0	1	0	0	0	1!	0	0	0	1	0	0	0	0	0	1!	0	0
Volume Module:																				
Base Vol:	0		5		11	9		4		1	1		22		0	14		25		10
Growth Adj:	1.10		1.10		1.10	1.10		1.10		1.10	1.10		1.10		1.10	1.10		1.10		1.10
Initial Bse:	0		6		12	10		4		1	1		24		0	15		28		11
Added Vol:	0		0		0	0		0		0	0		11		0	0		11		0
PasserByVol:	0		0		0	0		0		0	0		0		0	0		0		0
Initial Fut:	0		6		12	10		4		1	1		35		0	15		39		11
User 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
PHF 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
PHF Volume:	0		6		12	10		4		1	1		35		0	15		39		11
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
Reduced Vol:	0		6		12	10		4		1	1		35		0	15		39		11
PCE 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
MLF 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
FinalVolume:	0		6		12	10		4		1	1		35		0	15		39		11
Saturation Flow Module:																				
Adjustment:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes:	0.00		0.31		0.69	0.64		0.29		0.07	0.03		0.97		0.00	0.24		0.59		0.17
Final Sat.:	0		296		651	538		239		60	27		858		0	215		536		153
Capacity Analysis Module:																				
Vol/Sat:	xxxx		0.02		0.02	0.02		0.02		0.02	0.04		0.04		xxxx	0.07		0.07		0.07
Crit Moves:					****			****			****							****		
Delay/Veh:	0.0		6.8		6.8	7.3		7.3		7.3	7.2		7.2		0.0	7.2		7.2		7.2
Delay 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
AdjDel/Veh:	0.0		6.8		6.8	7.3		7.3		7.3	7.2		7.2		0.0	7.2		7.2		7.2
LOS by Move:	*		A		A	A		A		A	A		A		*	A		A		A
ApproachDel:	6.8					7.3					7.2					7.2				
Delay Adj:	1.00					1.00					1.00					1.00				
ApprAdjDel:	6.8					7.3					7.2					7.2				
LOS by Appr:	A					A					A					A				
AllWayAvgQ:	0.0		0.0		0.0	0.0		0.0		0.0	0.0		0.0		0.0	0.1		0.1		0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Daisy Avenue/Anaheim Street

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.791
Loss Time (sec): 10 | Average Delay (sec/veh): xxxxxx
Optimal Cycle: 65 | Level Of Service: C

Street Name:	Daisy Avenue								Anaheim Street							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted					Permitted					Permitted					Permitted				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Y+R:	4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0			4.0	4.0	4.0		
Lanes:	0	0	1!	0	0	0	0	1!	0	0	1	0	1	1	0	1	0	1	1	0
Volume Module:																				
Base Vol:	76		8		32	16		11		13	35		1509		133	28		840		7
Growth Adj:	1.10		1.10		1.10	1.10		1.10		1.10	1.10		1.10		1.10	1.10		1.10		1.10
Initial Bse:	84		9		35	18		12		14	39		1660		146	31		924		8
Added Vol:	10		3		4	0		3		0	0		0		10	4		0		0
PasserByVol:	0		0		0	0		0		0	0		0		0	0		0		0
Initial Fut:	94		12		39	18		15		14	39		1660		156	35		924		8
User 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
PHF 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
PHF Volume:	94		12		39	18		15		14	39		1660		156	35		924		8
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
Reduced Vol:	94		12		39	18		15		14	39		1660		156	35		924		8
PCE 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
MLF 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
FinalVolume:	94		12		39	18		15		14	39		1660		156	35		924		8
Saturation Flow Module:																				
Sat/Lane:	1600		1600		1600	1600		1600		1600	1600		1600		1600	1600		1600		1600
Adjustment:	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes:	0.65		0.08		0.27	0.38		0.32		0.30	1.00		1.83		0.17	1.00		1.98		0.02
Final Sat.:	1036		131		434	599		514		487	1600		2925		275	1600		3174		26
Capacity Analysis Module:																				
Vol/Sat:	0.06		0.09		0.09	0.01		0.03		0.03	0.02		0.57		0.57	0.02		0.29		0.29
Crit Moves:			****			****							****			****				

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Daisy Avenue/11th Street

Average Delay (sec/veh): 2.9 Worst Case Level Of Service: B[10.6]

Street Name:	Daisy Avenue						11th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	11	72	9	17	95	11	8	4	6	6	5	14
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	12	79	10	19	105	12	9	4	7	7	6	15
Added Vol:	0	0	0	0	0	16	16	2	0	0	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	12	79	10	19	105	28	25	6	7	7	8	15
User 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
PHF 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
PHF Volume:	12	79	10	19	105	28	25	6	7	7	8	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	12	79	10	19	105	28	25	6	7	7	8	15
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	133	xxxx	xxxxx	89	xxxx	xxxxx	276	269	119	271	278	84
Potent Cap.:	1465	xxxx	xxxxx	1519	xxxx	xxxxx	681	640	939	686	633	981
Move Cap.:	1465	xxxx	xxxxx	1519	xxxx	xxxxx	653	627	939	665	620	981
Volume/Cap:	0.01	xxxx	xxxx	0.01	xxxx	xxxx	0.04	0.01	0.01	0.01	0.01	0.02
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.5	xxxx	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	685	xxxxx	xxxx	782	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.6	xxxxx	xxxxx	9.8	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			10.6			9.8		
ApproachLOS:	*			*			B			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #6 Daisy Avenue/8th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.157
Loss Time (sec): 0 Average Delay (sec/veh): 7.7
Optimal Cycle: 0 Level Of Service: A

Street Name:	Daisy Avenue						8th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	30	70	12	3	53	6	10	23	18	6	17	4
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	33	77	13	3	58	7	11	25	20	7	19	4
Added Vol:	9	0	0	0	0	0	0	2	9	0	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	77	13	3	58	7	11	27	29	7	21	4
User 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
PHF 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
PHF Volume:	42	77	13	3	58	7	11	27	29	7	21	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	77	13	3	58	7	11	27	29	7	21	4
PCE 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
MLF 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
FinalVolume:	42	77	13	3	58	7	11	27	29	7	21	4
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.32	0.58	0.10	0.05	0.85	0.10	0.16	0.41	0.43	0.21	0.65	0.14
Final Sat.:	268	491	84	40	715	81	137	339	358	165	516	110
Capacity Analysis Module:												
Vol/Sat:	0.16	0.16	0.16	0.08	0.08	0.08	0.08	0.08	0.08	0.04	0.04	0.04
Crit Moves:	****			****			****			****		
Delay/Veh:	7.9	7.9	7.9	7.6	7.6	7.6	7.5	7.5	7.5	7.5	7.5	7.5
Delay 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
AdjDel/Veh:	7.9	7.9	7.9	7.6	7.6	7.6	7.5	7.5	7.5	7.5	7.5	7.5
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	7.9			7.6			7.5			7.5		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	7.9			7.6			7.5			7.5		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 Daisy Avenue/7th Street

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.354
Loss Time (sec): 10 | Average Delay (sec/veh): xxxxxx
Optimal Cycle: 27 | Level Of Service: A

Street Name:	Daisy Avenue						7th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0	0 0	0	0	0 1 0	0	0	0 0 0	0	1	1 1 0
Volume Module:												
Base Vol:	35	87	0	0	35	49	0	0	0	25	657	46
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	39	96	0	0	39	54	0	0	0	28	723	51
Added Vol:	0	2	0	0	9	0	0	0	0	0	0	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	98	0	0	48	54	0	0	0	28	723	59
User 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
PHF 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
PHF Volume:	39	98	0	0	48	54	0	0	0	28	723	59
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	98	0	0	48	54	0	0	0	28	723	59
PCE 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
MLF 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
FinalVolume:	39	98	0	0	48	54	0	0	0	28	723	59
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.28	0.72	0.00	0.00	0.47	0.53	0.00	0.00	0.00	0.10	2.68	0.22
Final Sat.:	452	1148	0	0	750	850	0	0	0	163	4289	348
Capacity Analysis Module:												
Vol/Sat:	0.02	0.09	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.02	0.17	0.17
Crit Moves:		****		****							****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 Daisy Avenue/6th Street

Cycle (sec): 100 | Critical Vol./Cap.(X): 0.494
Loss Time (sec): 10 | Average Delay (sec/veh): xxxxxx
Optimal Cycle: 33 | Level Of Service: A

Street Name:	Daisy Avenue						6th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0	1 0	0	1	0 0 0	0	1	1 1 0	0	0	0 0 0
Volume Module:												
Base Vol:	0	35	24	27	33	0	73	1307	53	0	0	0
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	0	39	26	30	36	0	80	1438	58	0	0	0
Added Vol:	0	2	0	8	2	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	41	26	38	38	0	80	1438	58	0	0	0
User 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
PHF 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
PHF Volume:	0	41	26	38	38	0	80	1438	58	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	41	26	38	38	0	80	1438	58	0	0	0
PCE 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
MLF 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
FinalVolume:	0	41	26	38	38	0	80	1438	58	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.61	0.39	0.50	0.50	0.00	0.15	2.74	0.11	0.00	0.00	0.00
Final Sat.:	0	969	631	794	806	0	245	4378	178	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.04	0.04	0.02	0.05	0.00	0.05	0.33	0.33	0.00	0.00	0.00
Crit Moves:		****		****				****				

Scenario Report

Scenario:	Cumulative Sat+ Project Mid
Command:	Default Command
Volume:	Cumulative Sat Mid
Geometry:	Cumulative
Impact Fee:	Default Impact Fee
Trip Generation:	Cumulative+Project Sat Mid
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Oregon Avenue/Anaheim Street	A	xxxxx	0.478	A	xxxxx	0.497	+ 0.019 V/C
# 2 Maine Avenue/11th Street	A	9.2	0.015	A	9.6	0.060	+ 0.428 D/V
# 3 Maine Avenue/8th Street	A	7.1	0.048	A	7.2	0.073	+ 0.025 V/C
# 4 Daisy Avenue/Anaheim Street	A	xxxxx	0.527	A	xxxxx	0.559	+ 0.033 V/C
# 5 Daisy Avenue/11th Street	A	9.7	0.020	B	10.1	0.065	+ 0.370 D/V
# 6 Daisy Avenue/8th Street	A	7.4	0.099	A	7.5	0.105	+ 0.006 V/C
# 7 Daisy Avenue/7th Street	A	xxxxx	0.317	A	xxxxx	0.333	+ 0.015 V/C
# 8 Daisy Avenue/6th Street	A	xxxxx	0.262	A	xxxxx	0.274	+ 0.012 V/C

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                    Level Of Service Computation Report
       ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Oregon Avenue/Anaheim Street
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.497
Loss Time (sec):      10                Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        33                Level Of Service:                  A
********************************************************************************
Street Name:          Oregon Avenue                     Anaheim Street
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:            Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:        0  0  1! 0  0    0  0  1! 0  0    1  0  2  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      19    0   12   22    2   34   31  947   27    7  862   22
Growth Adj:  1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10
Initial Bse:   21    0   13   24    2   37   34 1042   30    8  948   24
Added Vol:     20    0    0    0    0    0    0   20   20    0   20    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:   41    0   13   24    2   37   34 1062   50    8  968   24
User 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
PHF 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
PHF Volume:    41    0   13   24    2   37   34 1062   50    8  968   24
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   41    0   13   24    2   37   34 1062   50    8  968   24
PCE 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
MLF 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
FinalVolume:   41    0   13   24    2   37   34 1062   50    8  968   24
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1600 1600 1600 1600 1600 1600 1600 1600 1600 1600 1600 1600
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       0.76 0.00 0.24 0.38 0.03 0.59 1.00 2.87 0.13 1.00 1.95 0.05
Final Sat.:  1210    0  390  607   55  938 1600 4585  215 1600 3122   78
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.00 0.03 0.02 0.04 0.04 0.02 0.23 0.23 0.00 0.31 0.31
Crit Moves:  ****                ****        ****                ****
********************************************************************************
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                    Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #2 Maine Avenue/11th Street
********************************************************************************
Average Delay (sec/veh):      6.0       Worst Case Level Of Service: A[  9.6]
********************************************************************************
Street Name:           Maine Avenue                      11th Street
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1   15    6    5   22   14    6   11    3    3    0    3
Growth Adj:  1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10
Initial Bse:    1   17    7    6   24   15    7   12    3    3    0    3
Added Vol:      0    0    0    0    0    0    0   37    0    0   37    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:    1   17    7    6   24   15    7   49    3    3   37    3
User 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
PHF 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
PHF Volume:     1   17    7    6   24   15    7   49    3    3   37    3
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
FinalVolume:    1   17    7    6   24   15    7   49    3    3   37    3
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   40 xxxx xxxxx    23 xxxx xxxxx    85   68    32    91   73    20
Potent Cap.: 1583 xxxx xxxxx  1605 xxxx xxxxx   906  826  1048   898  822  1064
Move Cap.:   1583 xxxx xxxxx  1605 xxxx xxxxx   869  823  1048   852  818  1064
Volume/Cap:  0.00 xxxx  xxxx  0.00 xxxx  xxxx  0.01 0.06  0.00  0.00 0.05  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.0 xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:  7.3 xxxx xxxxx   7.3 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  838 xxxxx  xxxx  835 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.2 xxxxx xxxxx  0.2 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  9.6 xxxxx xxxxx  9.5 xxxxx
Shared LOS:     *    *     *     *    *     *     *    A     *     *    A     *
ApproachDel:    xxxxxx           xxxxxx              9.6              9.5
ApproachLOS:         *                *                A                A
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #3 Maine Avenue/8th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.073
Loss Time (sec): 0 Average Delay (sec/veh): 7.2
Optimal Cycle: 0 Level Of Service: A

Street Name:	Maine Avenue								8th Street							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Volume Module:																
Base Vol:	1	5	10	16	5	3	2	16	4	12	16	12				
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10				
Initial Bse:	1	6	11	18	6	3	2	18	4	13	18	13				
Added Vol:	0	0	0	0	0	0	0	22	0	0	22	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	1	6	11	18	6	3	2	40	4	13	40	13				
User 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				
PHF 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				
PHF Volume:	1	6	11	18	6	3	2	40	4	13	40	13				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	1	6	11	18	6	3	2	40	4	13	40	13				
PCE 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				
MLF 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				
FinalVolume:	1	6	11	18	6	3	2	40	4	13	40	13				
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Lanes:	0.06	0.31	0.63	0.67	0.21	0.12	0.05	0.86	0.09	0.20	0.60	0.20				
Final Sat.:	58	288	577	557	174	105	42	761	85	180	541	180				
Capacity Analysis Module:																
Vol/Sat:	0.02	0.02	0.02	0.03	0.03	0.03	0.05	0.05	0.05	0.07	0.07	0.07				
Crit Moves:	****			****				****		****						
Delay/Veh:	6.9	6.9	6.9	7.3	7.3	7.3	7.2	7.2	7.2	7.3	7.3	7.3				
Delay 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				
AdjDel/Veh:	6.9	6.9	6.9	7.3	7.3	7.3	7.2	7.2	7.2	7.3	7.3	7.3				
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A				
ApproachDel:	6.9			7.3			7.2			7.3						
Delay Adj:	1.00			1.00			1.00			1.00						
ApprAdjDel:	6.9			7.3			7.2			7.3						
LOS by Appr:	A			A			A			A						
AllWayAvgQ:	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1				

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Daisy Avenue/Anaheim Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.559
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 37 Level Of Service: A

Street Name:	Daisy Avenue								Anaheim Street							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	1	1 0	1	0	1	1 0
Volume Module:																
Base Vol:	51	12	40	8	7	12	14	886	73	30	831	12				
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10				
Initial Bse:	56	13	44	9	8	13	15	975	80	33	914	13				
Added Vol:	20	6	8	0	6	0	0	0	20	8	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	76	19	52	9	14	13	15	975	100	41	914	13				
User 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				
PHF 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				
PHF Volume:	76	19	52	9	14	13	15	975	100	41	914	13				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	76	19	52	9	14	13	15	975	100	41	914	13				
PCE 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				
MLF 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				
FinalVolume:	76	19	52	9	14	13	15	975	100	41	914	13				
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600				
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Lanes:	0.52	0.13	0.35	0.25	0.38	0.37	1.00	1.81	0.19	1.00	1.97	0.03				
Final Sat.:	827	209	565	394	614	592	1600	2901	299	1600	3154	46				
Capacity Analysis Module:																
Vol/Sat:	0.05	0.09	0.09	0.01	0.02	0.02	0.01	0.34	0.34	0.03	0.29	0.29				
Crit Moves:	****			****				****		****						

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Daisy Avenue/11th Street

Average Delay (sec/veh): 3.9 Worst Case Level Of Service: B[10.1]

Street Name:	Daisy Avenue						11th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	2	54	2	5	54	5	15	12	2	6	6	12
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	2	59	2	6	59	6	17	13	2	7	7	13
Added Vol:	0	0	0	0	0	34	34	3	0	0	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	59	2	6	59	40	51	16	2	7	10	13
User 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
PHF 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
PHF Volume:	2	59	2	6	59	40	51	16	2	7	10	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	59	2	6	59	40	51	16	2	7	10	13
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	99	xxxx	xxxxx	62	xxxx	xxxxx	166	156	79	164	175	61
Potent Cap.:	1507	xxxx	xxxxx	1554	xxxx	xxxxx	802	739	987	805	722	1010
Move Cap.:	1507	xxxx	xxxxx	1554	xxxx	xxxxx	781	736	987	787	719	1010
Volume/Cap:	0.00	xxxx	xxxx	0.00	xxxx	xxxx	0.06	0.02	0.00	0.01	0.01	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.4	xxxx	xxxxx	7.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	775	xxxxx	xxxx	845	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.1	xxxxx	xxxxx	9.4	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			10.1			9.4		
ApproachLOS:	*			*			B			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #6 Daisy Avenue/8th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.105
Loss Time (sec):	0	Average Delay (sec/veh):	7.5
Optimal Cycle:	0	Level Of Service:	A

Street Name:	Daisy Avenue									8th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	10	24	20	7	15	6	6	33	5	23	40	15
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	11	26	22	8	17	7	7	36	6	25	44	17
Added Vol:	19	0	0	0	0	0	0	3	19	0	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	30	26	22	8	17	7	7	39	25	25	47	17
User 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
PHF 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
PHF Volume:	30	26	22	8	17	7	7	39	25	25	47	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	26	22	8	17	7	7	39	25	25	47	17
PCE 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
MLF 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
FinalVolume:	30	26	22	8	17	7	7	39	25	25	47	17
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.38	0.34	0.28	0.25	0.54	0.21	0.09	0.56	0.35	0.28	0.53	0.19
Final Sat.:	319	281	234	205	439	176	82	486	303	241	449	157
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.04	0.04	0.04	0.08	0.08	0.08	0.10	0.10	0.10
Crit Moves:	****				****		****				****	
Delay/Veh:	7.6	7.6	7.6	7.4	7.4	7.4	7.4	7.4	7.4	7.6	7.6	7.6
Delay 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
AdjDel/Veh:	7.6	7.6	7.6	7.4	7.4	7.4	7.4	7.4	7.4	7.6	7.6	7.6
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	7.6			7.4			7.4			7.6		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	7.6			7.4			7.4			7.6		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 Daisy Avenue/7th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.333
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Street Name:	Daisy Avenue						7th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0	0 0	0 0	0 1	0	0 0	0	0 0	0 1	1	1 0
Volume Module:												
Base Vol:	32	34	0	0	27	23	0	0	0	23	639	41
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	35	37	0	0	30	25	0	0	0	25	703	45
Added Vol:	0	3	0	0	19	0	0	0	0	0	0	16
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	35	40	0	0	49	25	0	0	0	25	703	61
User 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
PHF 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
PHF Volume:	35	40	0	0	49	25	0	0	0	25	703	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	40	0	0	49	25	0	0	0	25	703	61
PCE 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
MLF 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
FinalVolume:	35	40	0	0	49	25	0	0	0	25	703	61
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.47	0.53	0.00	0.00	0.66	0.34	0.00	0.00	0.00	0.10	2.67	0.23
Final Sat.:	745	855	0	0	1053	547	0	0	0	154	4275	372
Capacity Analysis Module:												
Vol/Sat:	0.02	0.05	0.00	0.00	0.05	0.05	0.00	0.00	0.00	0.02	0.16	0.16
Crit Moves:	****				****						****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 Daisy Avenue/6th Street

Cycle (sec): 100 Critical Vol./Cap.(X): 0.274
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 Level Of Service: A

Street Name:	Daisy Avenue						6th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0	1 0	0 1	0	0 0	0 1	1	1 0	0 0	0	0 0
Volume Module:												
Base Vol:	0	23	16	15	37	0	30	478	37	0	0	0
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	0	25	18	17	41	0	33	526	41	0	0	0
Added Vol:	0	3	0	16	3	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	28	18	33	44	0	33	526	41	0	0	0
User 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
PHF 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
PHF Volume:	0	28	18	33	44	0	33	526	41	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	28	18	33	44	0	33	526	41	0	0	0
PCE 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
MLF 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
FinalVolume:	0	28	18	33	44	0	33	526	41	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.62	0.38	0.43	0.57	0.00	0.17	2.63	0.20	0.00	0.00	0.00
Final Sat.:	0	986	614	682	918	0	264	4210	326	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.03	0.03	0.02	0.05	0.00	0.02	0.12	0.12	0.00	0.00	0.00
Crit Moves:	****			****				****				