ENVIRONMENTAL CHECKLIST FORM

1. Project Title: Monseñor Oscar Romero Charter School (MORCS)

2. Lead Agency Name and Address:

   Los Angeles Unified School District (LAUSD)
   333 South Beaudry Avenue
   Los Angeles, California 90017

3. Contact Person and Phone Number:

   Yi Hwa Kim, Interim Director, Office of Environmental Health and Safety
   (213) 241-3199

4. Project Location:

   2570 West 11th Street
   Los Angeles, California 90006

5. Project Sponsor's Name and Address:

   YPI Charter Schools, Inc.
   c/o Pacific Charter School Development
   Hope Fang
   811 West 7th Street, Suite 310
   Los Angeles, California 90017

6. General Plan Designation:

   Public Facilities (PF)

7. Zoning:

   PF

8. Description of the project:

   The project site is located approximately 2 miles west of downtown Los Angeles at 1157 S. Berendo Street in the City of Los Angeles. (**Figure 1, Regional Location**). Regional access to the project site is provided from the north by US 101 (Hollywood Freeway), from the east by Interstate 110, and from the south by Interstate 10 (Santa Monica Freeway). The project site is bound by Berendo Street to the east, the Berendo Middle School campus and 12th Street to the south, the Berendo Middle School campus and single- and multi-family homes to the west, and 11th Street to the north. The surrounding neighborhood generally consists of single- and multi-family homes, while commercial businesses are located along Pico Boulevard one block south of the site, Olympic Boulevard one block north, and Vermont Avenue two blocks east of the project site. **Figure 2, Project Site and Surrounding Uses,** illustrates the project site location and the adjacent uses.

Site Background and Existing Conditions

The proposed project to be developed by YPI Charter Schools is situated on the northeast portion of the LAUSD Berendo Middle School. Established in 1911, Berendo Middle School continues to operate on its original site. The single-track public school currently serves approximately 1,200 students in grades 6 through 8.

Berendo Middle School is a rectangular-shaped parcel. As both Berendo Street and Kenmore Avenue slope down towards 11th Street, the difference in elevation from the southern to northern boundary of the existing school site is up to 20 feet. To maintain a level campus, the school was constructed on a series of terraces that were created by cut and fill grading and are buttressed by internal and external retaining walls that reach heights of approximately 20 feet along the northwest corner of the school. Several buildings, including a gym, portable classroom buildings, cafeteria, classrooms and auditorium, two staff parking lots, volleyball and handball courts, basketball courts, and a lower and upper athletic field make up the Berendo Middle School campus. The campus' main entrance is through Crusader Hall, located at the southeast corner of the existing site. The site is not located within the designated boundaries of an oil field, nor are any active or abandoned oil wells identified on the site.[1]

The Monseñor Oscar Romero Charter School (MORCS) has been operating on Berendo's Middle School campus since the beginning of the 2011 school year. Approximately 339 6th, 7th, and 8th graders are currently accommodated in classrooms and bungalow classrooms throughout the Berendo campus.[2] The project site is composed of one restroom building, a bungalow building with two classrooms, basketball courts, a surface parking lot, and several small trees. The existing student drop off and pick-up area for both MORCS and Berendo Middle School is located along Berendo Street just north of the campus main entrance. Two staff parking lots exist on the middle school campus. The northeast parking lot is accessible via Berendo Street, while the main parking lot is accessible via 12th Street.

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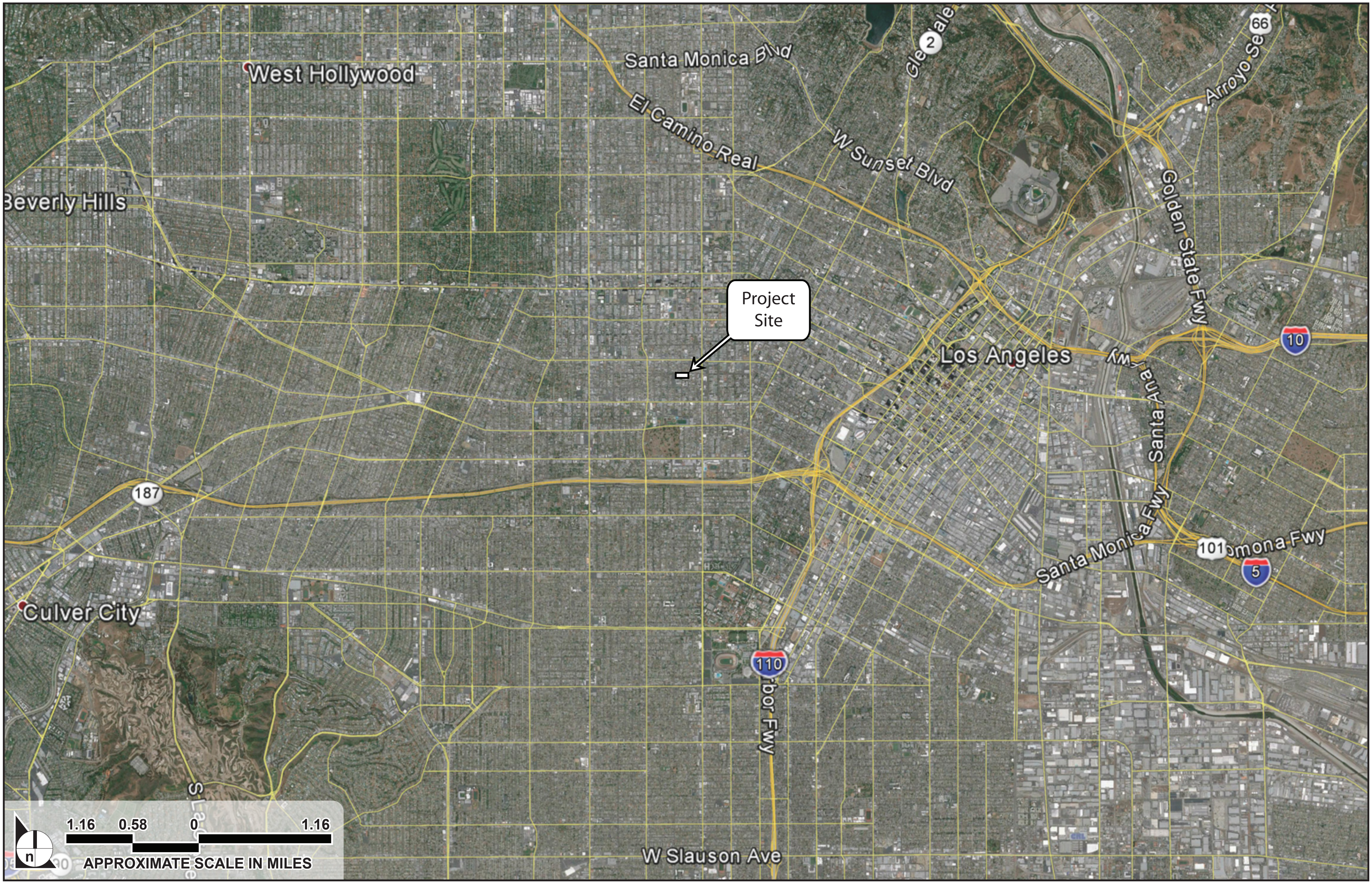
1 *2013 Draft Phase One Environmental Site Assessment*, prepared by The Planning Center/DCE & E (**Appendix C)**

2 *2014 Traffic Impact Study for MORCS*, prepared by KOA Corporation



SOURCE: Google, Inc., April 2014

FIGURE 1

Regional Location

1107.003•04/14

Legend:

Berendo Middle School Boundary

Site Boundary

326 163 0 326

APPROXIMATE SCALE IN FEET

SOURCE: Planning Center, October 2013

FIGURE 2

Project Site and Surrounding Uses

1107.003•08/14

Land Use and Zoning

The site is included in the Wilshire Community Plan and is zoned PF (public facilities). Under this zoning designation public elementary and secondary schools are permitted.[3] The community plan recognizes the need for additional schools to meet current and projected enrollment levels as all LAUSD schools within the Plan area are operating at or above design capacity and in need of substantial repairs and improvements.[4]

The project site is also located within the federal government designated Pico-Union Promise Zone. Five Los Angeles neighborhoods have been identified as promise zones and will receive federal funds[5] to "increase economic security, expand educational opportunities, increase access to quality, affordable housing, improve public safety, and create jobs."[6] Two of the five key strategies included in the City's Promise Zone Plan are relevant to the proposed project and include:[7]

- Ensuring all youth have access to a high-quality education, and are prepared for college and careers through its Promise Neighborhoods initiative, by partnering with the Youth Policy Institute and LA Unified School District to expand its Full Service Community Schools model from seven schools to all 45 Promise Zone schools by 2019.
- Ensuring youth and adult residents have access to high-quality career and technical training opportunities that prepare them for careers in high-growth industries through partnerships with career and technical training schools and the Los Angeles Community College District.

Project Characteristics

The proposed project consists of a 1.1-acre middle school campus with three one- and two-story buildings, a landscaped courtyard, and underground parking, as well as the removal of 10 existing bungalow buildings from various locations on the Berendo MS campus. The proposed project would be constructed on the northeastern portion of the existing Berendo Middle School campus. **Figure 3, Proposed Project Site Plan,** shows the proposed footprint and layout of the proposed project. Once completed, the proposed project would provide an additional 66 student seats, increasing the MORCS'

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3 List Number 1 of Uses Permitted in Various Zones in the City of Los Angeles, http://cityplanning.lacity.org/Code_Studies/Misc/uselist1.pdf

4 Wilshire Community Plan, p.III-16

5 Federal funds will be granted in the form of assistance and competitive advantages when applying for federal loans and grants

6 The Wall Street Journal's Capital Bureau, Washington Wire, *What is the Promise Zone,* January 9, 2014 http://blogs.wsj.com/washwire/2014/01/09/what-is-a-promise-zone/

7 Office of the Press Secretary, Fact Sheet, President Obama's Promise Zones Initiative, City of Los Angeles, http://www.whitehouse.gov/the-press-office/2014/01/08/fact-sheet-president-obama-s-promise-zones-initiative

capacity to 405 students. The existing site is composed of two small bungalow buildings (two classrooms used as offices and a bathroom building), asphalt pavement, surface parking, chain link fence, and a few small trees. All existing uses will be removed to accommodate the proposed project. In addition, eight bungalow buildings containing 14 classrooms will be removed from various locations on the Berendo campus as part of the project. The proposed project would result in the construction of 16 classrooms in one new building on the project site. As such, the proposed project represents no net increase in classrooms and 66 students on the Berendo Campus. The proposed project also includes a multi-purpose building and administration building. A site plan is provided in **Figure 4, Proposed Project Illustrative Plan**, which includes the proposed project's features**.**

School Buildings

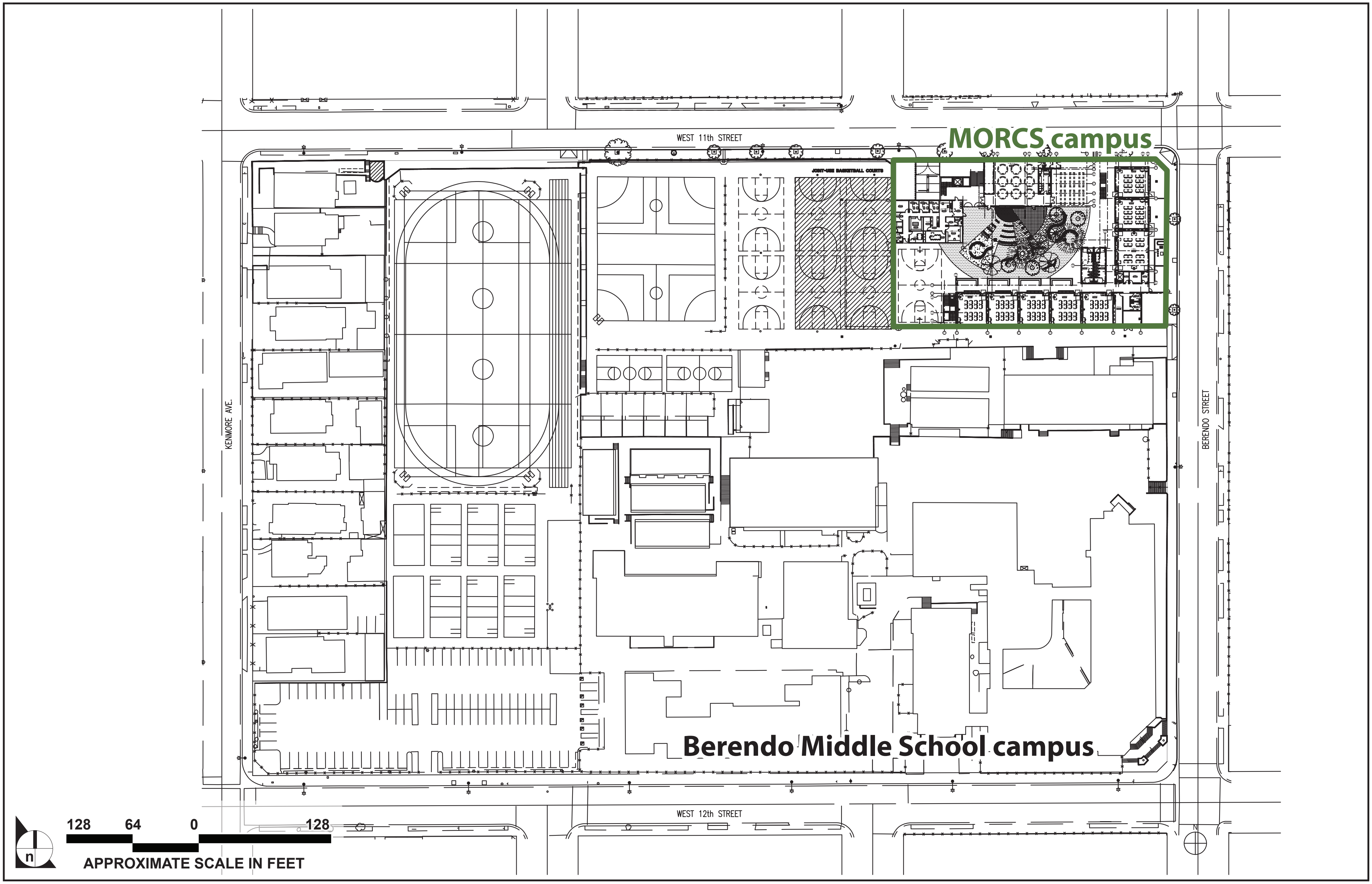
The three buildings totaling about 37,000 square feet would consist of an administration building, a multipurpose building with small kitchen and a two-story classroom building that would accommodate 16 classrooms. The buildings will be configured in a courtyard formation to optimize supervision and sight lines from the administration building and all other programmed spaces on the campus. The two-story classroom building will be L-shaped along the south and east sides of the site. It will surround a large courtyard to provide natural light and air to the interiors. The classrooms, equipped with LAUSD standard technology, are designed for multi-wall teaching and envisioned with flexible furniture from group and individual teaching.

The administration and multi-purpose spaces would be located to the north in separate one-story buildings. The multi-purpose room will support student gatherings, community events, and indoor eating as necessary. A covered exterior lunch shelter is contiguous to the multi-purpose room.

Access and Circulation

The project site access for student drop-off and pick-up operations has been planned to minimize potential vehicular queuing on the local street system and conflicts with the existing Berendo Middle School drop-off and pick-up operations, as well as to address safety issues associated with the MORCS student drop-off and pick-up operations.

A separate curbed vehicular drop off and pick up lane was not viable due to the existing street and sidewalk widths. The proposed project's vehicle queueing area along 11th Street will be approximately 250 feet long and accommodate 13 vehicles. As shown in **Figure 5, MORCS Student Drop Off and Pick-Up Area,** the vehicle queueing area will extend west of the parking garage entrance, however students will not be permitted to enter/exit vehicles until the vehicle has entered the designated student drop-off/pick-up area east of the parking garage entrance. Further, the existing red curb located at the intersection of Berendo Street and 11th Street (along 11th Street) will remain in place and provide sight lines for pedestrians and drivers.

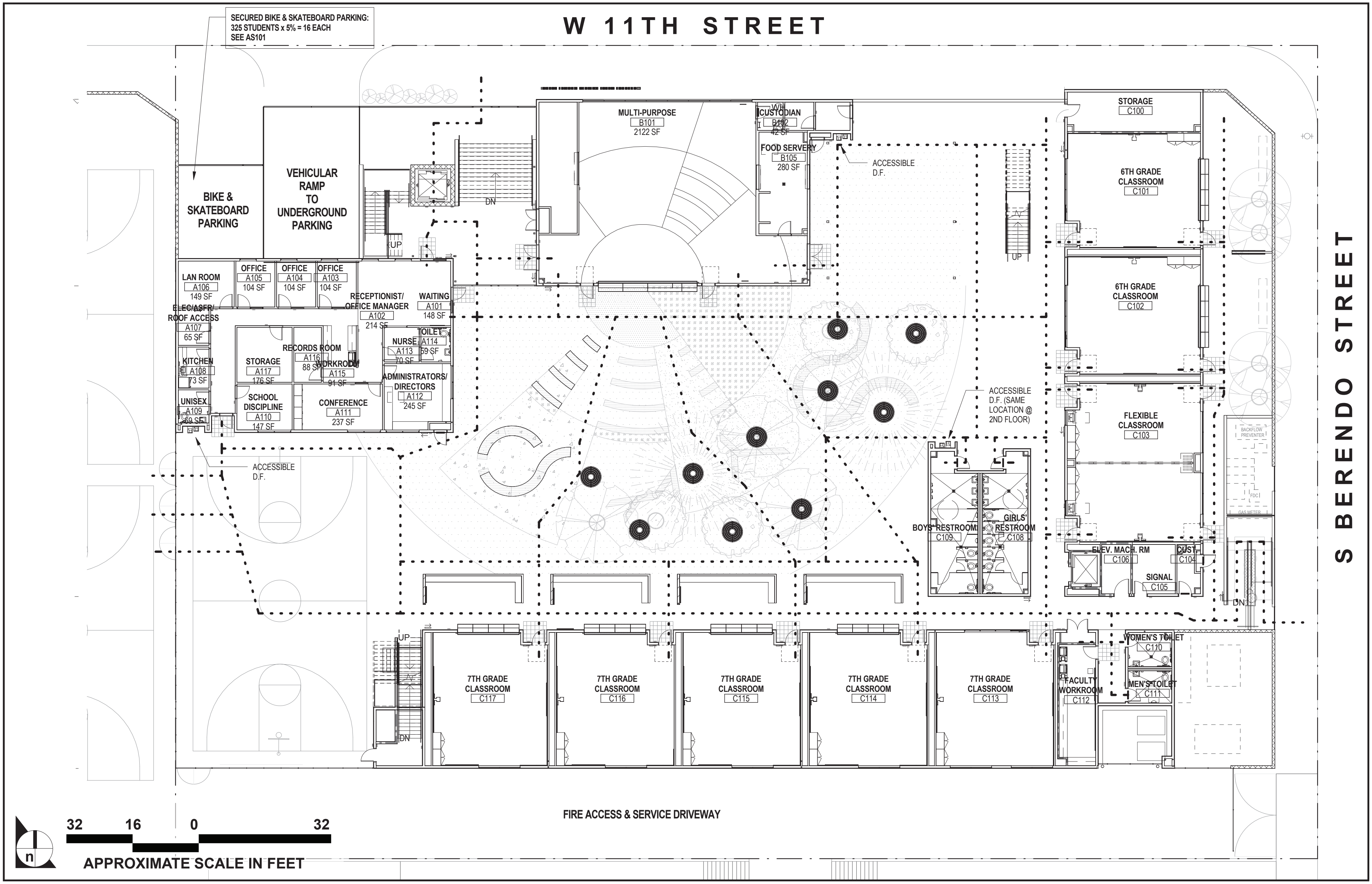


SOURCE: Planning Center, April 2014

FIGURE 3

Proposed Project Site Plan

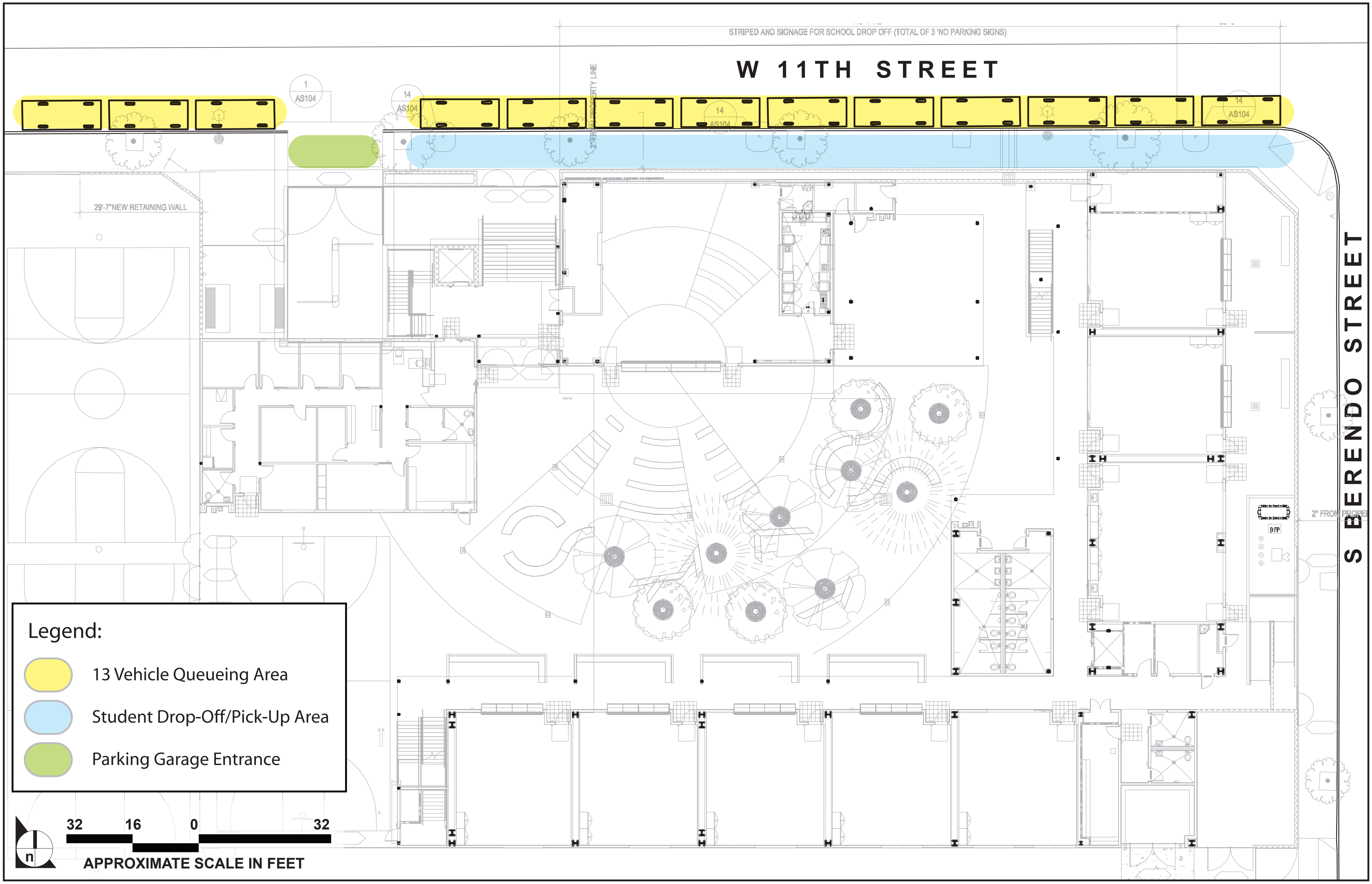
1107.003•05/14



SOURCE: Planning Center, June 2014

FIGURE **4**

Proposed Project Illustrative Plan



SOURCE: Traffic Impact Study for Monsenor Oscar Romero Charter Schools (MORCS), prepared by KOA Corporation

FIGURE 5

MORCS Student Drop Off and Pick-Up Area

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The proposed project's main school entry, including the student drop off and pick-up area, will be located along 11th Street, separate from the Berendo Middle School student drop off and pick-up zone which is located at Berendo Ave and 12th Street. Access to the school campus is provided by a stairway and elevator from 11th Street up to the campus level. Passenger cars will drive eastbound on 11th Street and drop off and pick up students along a dedicated curbside area in front of the school entrance. Signage will be provided to prohibit parking in the drop-off area along 11th Street during pickup and drop-off times. In addition, signage will identify the drop-off/pick-up zone east of the parking garage entrance, as well as prohibit drivers from blocking the parking garage entrance.

The underground parking garage will be 17,000 square feet. The entrance to the underground parking structure will be located along 11th Street, west of the main entrance. The underground parking will be secured with key card access and gates. School staff accessing the parking garage in the mornings will arrive earlier than students, which will minimize conflicts between student pedestrians and cars entering the parking. Similarly, after the end of the school day, staff will be departing the parking garage after the main student pick-up period. The parking driveway has open areas at the approach to 11th Street where sight lines down each sidewalk are provided, in order to prevent potential for hazardous pedestrian safety conditions. In addition, parabolic mirrors at the entrance to the underground parking shall be installed if feasible for better visibility of approaching pedestrians.

The Safety Valet Program will improve student safety during drop off and pick up times, as well as provide more fluid movement of vehicular traffic within the vicinity of the school site. The program is designed so parents will not have to park or exit their vehicle when dropping off their children. Instead, school volunteers will set up traffic cones in the designated drop off and pick up area, where parent vehicles line up. As the vehicles enter the designated area, parent or student volunteers, or valets, approach the stopped vehicles and assist the students in exiting. The parent then drives off as the student is directed onto campus.[8] The drop off and pick-up area is discussed further in the **Section XVI Transportation and Traffic,** below.

Recreation/Landscaping

A large courtyard with landscaping and concrete and wood bench seating will be located in the center of the campus providing students with an area to play. A basketball court will be located in the southwestern corner of the campus.

Tall narrow shade shrubs or vines are proposed in the planters along 11th Street to discourage graffiti. In addition, the proposed project includes planting areas throughout

8 LAUSD Office of Environmental Health & Safety, Safety Alert, Safety Valet Program, http://www.lausd-oehs.org/docs/SafetyAlerts/11-04.pdf, accessed July 14, 2014

the project site including around the lunch shelter and in the classroom courtyards to provide shade.

Surrounding Land Uses and Setting:

The project site is located in an urban area with a mix of residential and commercial land uses. The area is heavily populated with small single-family residences and two three-story multi-family units. Immediately west of Berendo Middle School are single-family and multi-family residences. The residences' front yards face Kenmore Avenue with their back yards along the Berendo's property line. Similar residential uses are located south of the middle school and continue for one block until Pico Boulevard. Pico Boulevard is a well-traveled arterial road that supports a variety of small businesses, including restaurants, markets, and beauty salons.

Vermont Avenue, another heavily traveled corridor, is located two blocks east of the project site. Residential uses form a two-block buffer between Berendo Middle School and the commercial businesses located along Vermont Avenue. The Los Angeles Police Department's Olympic Station is located at the northeast corner of Vermont Avenue and 11th Street.

Directly north of the project site along 11th Street, single- and multi-family residences exist. Olympic Boulevard is located one block north of the project site and offers similar retail and commercial businesses found along Pico Boulevard and Vermont Avenue.

The following uses surround the project site:

- North: Single-family residences are located north of the site, across West 11th Street.

- East: Single-family residences are located east of the Site, across South Berendo Street.

- South: The main campus for Berendo Middle School borders the site to the south. School facilities in close proximity to the site include Classroom Building #1, the Lunch Pavilion, an Instructional Garden area, and the Physical Education Building. West 12th Street borders the middle school campus to the south, beyond which are single-family residences and a church.

- West: Additional asphalt-covered play courts for Berendo Middle School border the site to the west. Beyond the play courts lie single-family residences that front South Kenmore Avenue.

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

   - State of California Department of Toxic Substances Control (Determination of "No Further Action")
   - State Allocation Board (Approval of Funding)
   - Department of Education – School Facilities Planning Division (Approval of Final Site and Final Plans, and Approval of Transmission Setback Exemption)
   - Department of General Services – Office of Public School Construction (Approval of Funding)
   - Division of the State Architect (Approval of Construction Plans)
   - Department of Transportation (Approval of Memorandum of Understanding [MOU] and Traffic Impact Analysis/Pedestrian Safety Study)
   - Fire Department (Plan Approval for Emergency Access)
   - Department of Public Works, Bureau of Engineering (Off-Site Improvements Permit or "B-Permit")

10. Other reviewing agencies may include, but are not limited to:

    - South Coast Air Quality Management District
    - Los Angeles Regional Water Quality Control Board

11. Primary sources referenced in the preparation of this Initial Study:

    - Converse Consultants, *Geoseismic/Geotechnical Study Report*, 2014.
    - The Planning Center/DC&E, *Phase I Environmental Site Assessment*, 2013.
    - KOA Corporation, *Traffic Impact Study*, 2014.
    - RK Engineering Group, *Traffic Impact Study*, 2013.
    - Aspen Environmental Group, *LAUSD New Construction Program EIR*, 2003
    - City of Los Angeles, *General Plan*
    - South Coast Air Quality Management District, *CEQA Air Quality Handbook*, 1993.
    - South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, 2008
    - DKA Planning, *Acoustical Analysis*, 2014.

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" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology and Soils
☐ Hazards and Hazardous Materials	☐ Hydrology and Water Quality	☐ Land Use and Planning
☐ Mineral Resources	☐ Noise	☐ Population and Housing
☐ Public Services	☐ Recreation	☐ Transportation and Traffic
☐ Utilities and 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 will be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT 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
Yi Hwa Kim	LAUSD
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 is 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 Analyses 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.

		Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
I.	**AESTHETICS. Would the project:**					
	a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
	b)	Substantially damage scenic resources, including, but not limited to, tress, 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?	☐	☒	☐	☐

Responses:

a) **No impact.** The proposed project is located in the City of Los Angeles, in a highly urbanized portion of the City approximately 2 miles west of downtown Los Angeles. The nearest scenic view or vista to the project site are the Hollywood Hills, approximately 8.1 miles north of the project site. Due to the relatively flat topography and the density of development in the project area, views of the Hollywood Hills are available only intermittently, although close to downtown Los Angeles, views of the downtown skyline are not generally visible due to intervening structures.

Although the proposed project could change existing views by added new structures, scenic views are typically defined as those that provide expansive views of a highly valued landscape for the benefit of the general public. The views available along developed corridors such as 11th Street and Berendo Street are generally expected to be intermittent and would continue to be so with implementation of the proposed project. Therefore, the proposed project would not block or otherwise impede and existing view of a scenic vista. Impacts would be less than significant and no further analysis is required.

b) **No impact.** No highways or roads adjacent to or near the project site are designated as scenic, according to the Transportation Element of the City of Los Angeles General Plan.[9] The nearest roadway identified in the Wilshire Community Plan as a scenic highway is the segment of Highland Avenue from Rosewood Avenue to Wilshire Boulevard, 3.3 miles west of the project site.[10] Moreover, the project site does not lie within the viewshed of a state-designated scenic highway.[11] Therefore, no impacts would occur and no further analysis is required.[12]

c) **Less than Significant Impact.**

Visual Character

Buildout of the proposed project would change the existing visual character of the project site. The proposed project would be constructed on the northern portion of the existing Berendo Middle School campus which is shared with the existing MORCS campus. Existing uses on the 1.1-acre project site consist of one restroom building, a bungalow building with two classrooms, basketball courts, a surface parking lot, and several small trees.

The proposed project would involve the removal of the existing uses to accommodate the proposed project. In addition, 10 bungalow buildings will be removed from various locations on the Berendo Middle School campus as part of the project. The site plan is provided above in **Figure 4.** The MORCS campus would consist of three one- and two-story buildings (totaling approximately 37,000 square feet), a landscaped courtyard, an underground parking structure, and a basketball court. The primary facilities would include an administration building, a multipurpose building with a small kitchen and lunch shelter, and a classroom building. The structures would be configured in a courtyard formation.

The project site is currently in use as an operating school and would be located on the existing Berendo Middle School campus. The design of the buildings would consist of simple materials and a color palette consistent with the surrounding neighborhood which is generally comprised of one and two story homes to the north, west, and south, and multi-family residential uses to the east along Berendo Street. The Los Angeles Unified School District does not have specific criteria for determining visual character conflicts but recognizes that schools are generally compatible with the residential and

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9 City of Los Angeles, "Transportation Element," *General Plan*, 1999, Map E.

10 City of Los Angeles, "Transportation Element," *General Plan*, 1999, Map E.

11 California Scenic Highway Mapping System, Los Angeles County, http://www.dot.ca.gov/hq/LandArch/scenic_highways/

12 California Scenic Highway Mapping System, Los Angeles County, http://www.dot.ca.gov/hq/LandArch/scenic_highways/, 2013.

commercial neighborhoods in which they are sited.[13] Factors that can be used to evaluate an adverse change in visual character or degradation include:

- Incompatibility with surrounding uses, structures, or intensity of development
- Removal of significant amounts of vegetation
- Loss of important open space
- Substantial alteration of natural character
- Lack of adequate landscaping
- Extensive grading visible from public areas

Regarding the criteria above, as the proposed project is an infill project located in an urban area on an existing school site, removal of significant amounts of vegetation, and substantial alteration of natural character would not be applicable. Therefore, this analysis focuses on the potential for incompatibility with surrounding uses, loss of important open space, lack of adequate landscaping, and extensive grading.

Elevations demonstrating the overall design of the project are shown in **Figure 6, Building Elevations.** The proposed project would primarily be visible along 11th Street and along the west boundary of the site. Above the street level, the multi-purpose room's north façade would be comprised of a translucent building material, thereby distinguishing the proposed project's main entry. The roofline of the buildings will vary, with the tallest point being approximately 29 feet.

The determination of impacts evaluates two potential effects. First, would the project degrade the visual character of the site and second, would the project degrade the visual character of the surrounding area. As described above, the proposed project would be well designed with architectural features and compatible color scheme. The proposed project would replace the existing modular classrooms. While the change on the site would be substantial, it would not degrade the quality of the site due to the features described above.

The second part of the analysis relates to the potential for the proposed project to degrade the surrounding area. This analysis relies on the criteria above, specifically would the project be incompatible with surrounding uses, lack adequate landscaping, result in the loss of open space, or result in substantial grading within public view.

Visual incompatibility with surrounding uses would occur if the proposed project were out of scale, character, or otherwise visually inconsistent with surrounding uses. The nearby uses along 11th Street and Berendo Street are generally single- and multi-family homes designed in a variety of styles. The proposed uses would be consistent

13 Los Angeles Unified School District, New School Construction Program EIR

with the surroundings and would potentially improve the visual character of the area by replacing the existing bungalow buildings with new modern buildings; new fencing would also be installed further improving the appearance of the site. Further, the proposed project would not represent a substantial change in proposed uses as the site currently operates as a school and would continue to do so with the proposed project. As such, the proposed project would not be visually incompatible with the surrounding area.

The proposed project includes landscaping along the east and south perimeter of the project site. Although planting areas are limited at the sidewalk level as there is no existing parkway, tall narrow shade shrubs or vines are proposed along the eastern portion of the building. Several trees are located along the existing southern boundary of the project site on the Berendo Middle School Campus and would not be affected by the proposed project. Mature Fern Pines are located along 11th Street and would remain as part of the proposed project. A raised planter along 11th Street is proposed with tall narrow shade shrubs, or clinging vines to discourage graffiti. The interior courtyard will be developed with a taxon of trees set in tree wells to provide an abundance of summer shade, with a combination of both deciduous fall color trees selected from the LAUSD list of trees.[14] The hardscape courtyard will also include concrete and wood seating. Additional planting areas will be located in several places throughout the project site including the screened courtyards of the individual classrooms and along the lunch shelter facing Berendo Street. As such, the proposed project would include adequate landscaping.

The project site currently includes basketball courts which would be removed as part of the proposed project. However, the courts would be replaced and additional open space, as described in the landscaping description above would be added to the site. As such, the proposed project would not result in the loss of important open space.

The proposed project will require grading approximately 9,664 cubic yards of cut and 2,430 cubic yards of fill for the construction of the school buildings as well as the underground parking.[15] In addition, approximately 8,680 cubic yards of material would be exported from the site. During the excavation, construction trucks and other equipment would be visible to the public as they enter and exit the site and during construction/excavation. Grading activities would generate an estimated 1,088 hauling trips over 20 days. As such, the increase in construction activity due to haul trips could be disruptive to nearby residential uses and a visual change in the site would be noticeable as construction activity occurs.

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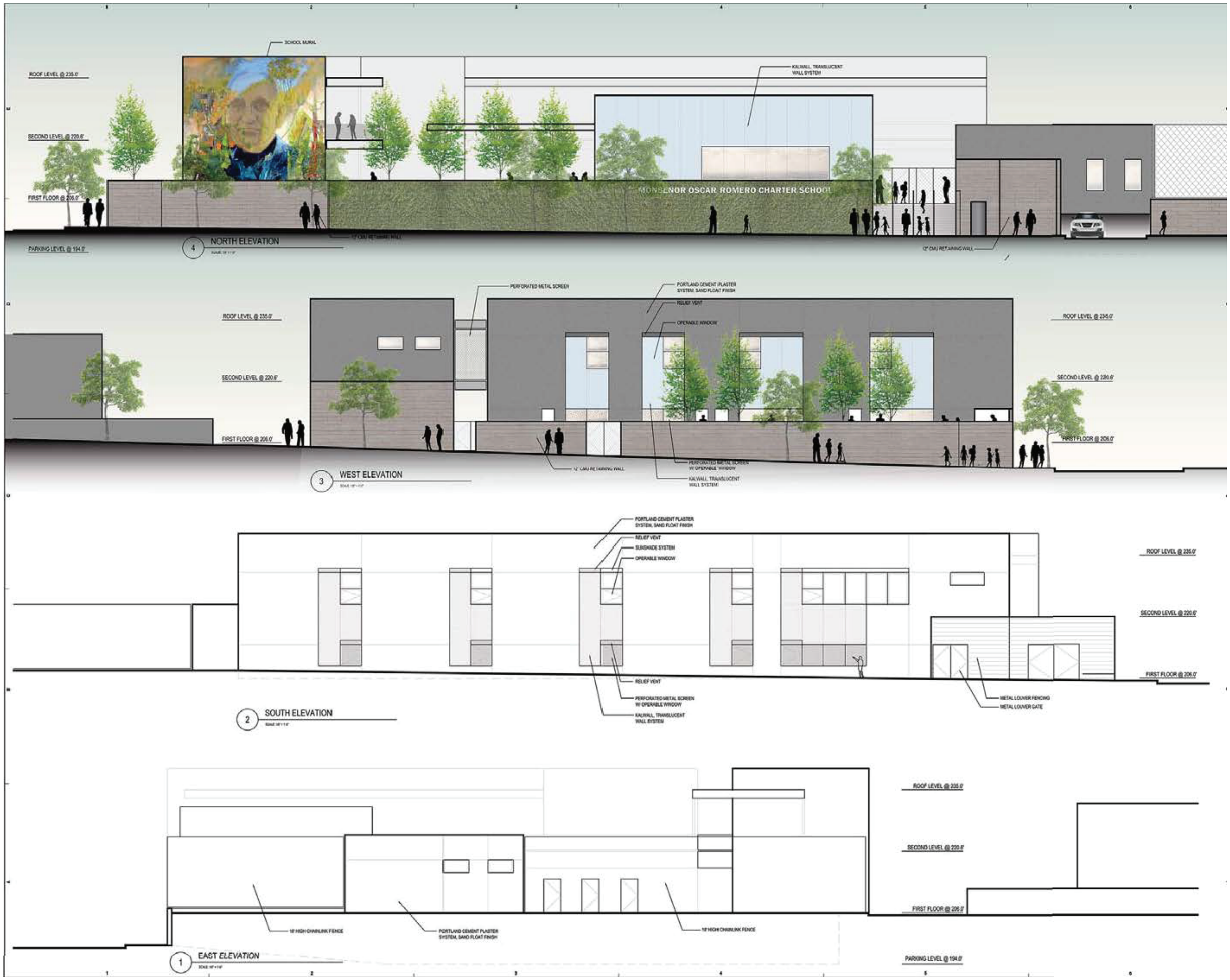
14 2012 LAUSD Approved Plan List, http://www.laschools.org/documents/download/sustainability%2Fwater_conservation%2FCopy_of_Updated_Plant_List_2012.pdf, April 24, 2014

15 During construction of the proposed project the project site will occupy 1.35-acres however upon completion of the proposed project the campus will be 1.1-acres. The additional acreage needed during construction is due to construction activities associated with the parking garage.



SOURCE: gkk works, October 2013

FIGURE 6

Building Elevations

The construction contractor would be responsible for screening the site from view with temporary fencing or other means, to reduce visual intrusion on the neighborhood. While the hauling truck trips would result in a change in the visual character surrounding the neighborhood, these activities would be temporary and end once the grading and associated activities are complete. Further, although nearby residential uses would be temporarily affected, no private views would be impacted. As such, the proposed project would not result in excessive or unnecessary grading within public view. Additional construction related impacts are evaluated in **Sections III Air Quality, XII Noise,** and **XVI Traffic**.

Therefore, impacts to the existing visual character or quality of the site and its surroundings would be less than significant. No further analysis on this topic is required.

d) Less Than Significant With Mitigation Incorporated. The project site is located in an urban environment already characterized by high levels of ambient nighttime illumination. Berendo Middle School and MORCS, located on the project site, provide on-site lighting for the existing play courts and buildings during evening hours. The proposed project would not introduce substantial new non-site lighting compared to existing conditions as the project site is currently in use as a school and requires nighttime lighting. Further, the use of occupancy sensors indoors and in corridors and the use of daylight saving controls and timers outside will minimize excessive light sources. While the majority of the lighting would be directed towards the interior of the project site, the implementation of **Mitigation Measures AES-1** and **AES-2** would ensure that any new light sources would not impact nearby residential uses.

Glare is the result of sunlight reflected off expanses of highly reflective surfaces. The intensity of glare and reflectivity will depend on the types of building materials used in construction and the ultimate design of the approved project. The proposed project includes translucent building materials which will be used to create a "light box" along the multi-purpose room's north façade allowing increased light on the interior of the building, as required with **Mitigation Measure AES-2,** the exterior of the light box would be designed with non-reflective materials. As the proposed building materials are non-reflective, the proposed project is not expected to create unusual or isolated glare impacts. In addition, the proposed project would utilize low-reflectivity glass on the exterior surface, including the light box, and non-reflective exterior building materials in the building design, which would minimize the potential for glare reflection. Therefore, impacts associated with illumination and glare would be less than significant after implementation of **Mitigation Measures AES-1** and **AES-2**. No further analysis is necessary.

Mitigation Measures

The following mitigation measures are required to reduce potential lighting impacts to a level that is less than significant.

AES-1 Outdoor lighting shall be designed and installed with downcast shielding to reduce light impacts on adjacent properties. YPI/PCSD shall reduce the lighting intensity from the proposed project on adjacent residences to no more than 2 foot-candles, measured at the residential property line. To achieve this result, YPI/PCSD may use hoods, filtering louvers, glare shields, and/or landscaping as may be necessary to achieve the standard. Lamp enclosure and poles shall also be painted to reduce reflection.

AES-2 YPI/PCSD shall utilize non-reflective building materials in the construction of the proposed project.

	Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
II.	**AGRICULTURE RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:**				
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?	☐	☐	☐	☒

	Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

Responses:

a) No impact. The California Department of Conservation, Division of Land Protection, lists Prime Farmland, Unique Farmland, and Farmland of Statewide Importance under the general category of "Important Farmland." The Extent of Important Farmland Map Coverage maintained by the Division of Land Protection indicates that the project site is not included in the Important Farmland category.[16] The project site is located within an urbanized area of the City of Los Angeles and is currently developed as an existing school. No impact on farmland or agricultural resources would occur. No further analysis is required.

b-c) No impact. The project site is located in the Central Planning Commission Area, within the Wilshire Community Plan. The Wilshire Community Plan designation and zoning for the project site is PF (Public Facilities). Berendo Middle School and MORCS currently operate on the project site. No agricultural use is permitted within these zoning designations and no conversion of Farmland would result from the proposed project.[17] Therefore, the proposed project would have no impact on agricultural zoning, Williamson Act contracts, and/or conversion of Farmland. No impact would occur and no further analysis is required.

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16 State of California Department of Conservation, Division of Land Resource Protection, *Farmland Mapping* and *Monitoring Program, Los Angeles County Important Farmland Map, 2010, Map.*

17 City of Los Angeles Planning Department, Zone Information and Map Access System (ZIMAS) http://zimas.lacity.org/

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
III. **AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:**				
a) Conflict with or obstruct implementation of the SCAQMD or Congestion Management 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 nonattainment 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?	☐	☐	☐	☒

The proposed project is located in Los Angeles County, which is included in the South Coast Air Basin (SoCAB). The South Coast Air Quality Management District (SCAQMD) has jurisdiction over air quality within the SoCAB. The SCAQMD *California Environmental Quality Act* (*CEQA) Air Quality Handbook* and related guidelines provide thresholds for assessing the significance of criteria air pollutants from construction and operation. Exceedance of the

SCAQMD thresholds could result in a potentially significant air quality impact. Therefore, the proposed project would result in a potentially significant impact to air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Generate total criteria pollutant emissions during construction or operation (direct and indirect) in excess of the thresholds given in **Table 1, SCAQMD Regional Emissions Significance Thresholds**;
- Expose sensitive receptors to substantial pollutant concentrations:
  - Exceed the localized significance thresholds given in **Table 2, SCAQMD Localized Significance Thresholds**;
  - Cause or contribute to the formation of CO Hotspots; and/or
  - Result in an incremental increase in cancer risk greater than or equal to 10 in 1 million, a cancer burden greater than 0.5 excess cancer cases (in areas where the incremental increase in risk is greater than 1 in 1 million), and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1.
- Expose sensitive receptors to objectionable odors affecting a substantial number of people.

If the project exceeds the regional emissions significance thresholds shown in **Table 1**, the project would also result in a cumulatively considerable contribution to air quality impacts and would be considered cumulatively significant even if it conforms to the applicable Air Quality Management Plan.

Table 1
SCAQMD Regional Emissions Significance Thresholds

	Pollutant (pounds per day)					
Phase	**VOC**	**NO_X**	**CO**	**SO_X**	**PM10**	**PM2.5**
Construction	75	100	550	150	150	55
Operational	55	55	550	150	150	55

Source: South Coast Air Quality Management District, Air Quality Significance Thresholds, (2011).
VOC = volatile organic compounds; NOx = oxides of nitrogen; CO = carbon monoxide; SOx = sulfur oxides.
PM10 = respirable particulate matter; PM2.5 = fine particulate matter.

The localized significance thresholds are shown in **Table 2**. These thresholds are based on screening tables provided by the SCAQMD. The screening tables provide the maximum allowable daily emissions that would satisfy the thresholds without project-specific dispersion modeling. Values are based on the Source Receptor Area (SRA) within which the project site is located, the size of the project area, and the distance to the nearest sensitive receptor. The project is located in SRA 2, is approximately 1.1 acres, and is within 25 meters of the nearest sensitive receptors. The nearest sensitive receptors are the residences located to the east and north of the site, and the school adjacent to the southern boundary of the site. Thus, a significant impact would occur during construction or operation if on-site emissions exceed the thresholds shown below.

Table 2
SCAQMD Localized Significance Thresholds

Localized Significance Threshold	Pollutant (pounds per day)[1]			
	NO_X	CO	PM10	PM2.5
Construction	147	827	6	4
Operational	147	827	2	1

Source: South Coast Air Quality Management District, Final Localized Significance Threshold Methodology, (2008), Appendix C.
[1] *The NO_X LST thresholds contained in the SCAQMD lookup tables are based on emissions of NO_X from construction of the Project and assume gradual conversion to oxides of nitrogen (NO_2) based on the distance from the Project site boundary.*

Responses:

a) Less than Significant Impact. According to the SCAQMD *CEQA Air Quality Handbook*, a project would have a significant impact if it conflicts with or delays implementation of the applicable air quality management plan (AQMP). A project is consistent with the AQMP if it meets the following indicators:

1. The project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

2. The project will not exceed the assumptions in the AQMP in 2016 or increments based on the year of project buildout.

As discussed later in this section, the proposed project would not exceed the significance thresholds for construction or operational emissions. In addition, the project would not exceed the screening criteria for the localized significance thresholds. Therefore, since the project would not exceed the thresholds, it would not increase the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP. Accordingly, the proposed project complies with the first consistency criterion.

Consistency with the assumptions in the AQMP is established by demonstrating that the project is consistent with the land use plan that was used to generate the growth forecast. The *2012 Air Quality Management Plan* based its assumptions on growth forecasts contained in the Southern California Association of Governments (SCAG) *2012 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS).[18] The 2012 RTP/SCS is based on growth assumptions through 2035 developed by each of the cities and counties in the SCAG region. The proposed project is the expansion of existing charter school operations at the same location. The total growth associated with the proposed project would consist of 66 new students, as well as 37,000 square feet of buildings to support this growth. The existing school has an enrollment of approximately 339 students. This is a very minor change in school operations in the context of the air basin and local or regional governments, and a General Plan amendment would not be required. Therefore, the proposed project is considered to be consistent with growth assumptions included in the AQMP. Accordingly, the proposed project complies with the second consistency criterion. No impact would occur and no further analysis is required.

b) Less than Significant Impact.

Construction

Construction operations would result in emissions of air pollutants. These emissions were primarily modeled using CalEEMod, a land use and construction model used to calculate emissions generated from construction and operation of new development projects. Project-specific data was used where available. Where Project specific information was not available, model default values provided by CalEEMod were used. Construction of the Project was estimated to take place over roughly a year and a half beginning in July 2015 and continuing through November 2016.

Estimated maximum air pollutant emission rates for construction activities in the SoCAB are shown in **Table 3, Estimated Project Construction Emissions – South Coast Air Basin**. Emission rates for respirable particulate matter (PM10) and fine particulate matter (PM2.5) include both vehicle exhaust and fugitive dust emissions. Values for PM10 and PM2.5 reflect the practice of watering the construction area as recommended by the SCAQMD.

18 South Coast Air Quality Management District, *Final 2012 Air Quality Management Plan*, 2012.

Table 3
Estimated Project Construction Emissions – South Coast Air Basin

	Maximum Emissions in Pounds per Day					
Construction Year	**VOC**	**NO_X**	**CO**	**SO_X**	**PM10**	**PM2.5**
2015	5.19	38.91	26.76	0.06	4.32	2.63
2016	39.60	23.53	18.29	0.03	1.80	1.58
SCAQMD Threshold:	75	100	550	150	150	55
Exceeds Threshold?	NO	NO	NO	NO	NO	NO

Source: Impact Sciences, Inc. Emissions calculations are provided in ***Appendix A****.*
Totals in table may not appear to add exactly due to rounding in the computer model calculations.

As shown in **Table 3,** above, the proposed project would not exceed any of the SCAQMD significance thresholds for air quality emissions during construction, impacts would be less than significant, and no mitigation is required.

The project will be required to implement dust control measures consistent with SCAQMD Rule 403 (Fugitive Dust) during the construction phases of new project development. The following actions are currently recommended to implement Rule 403 and have been quantified by the SCAQMD as being able to reduce dust generation between 30 and 85 percent depending on the dust generation source:

- Apply water and/or approved nontoxic chemical soil stabilizers according to manufacturer's specification to all inactive construction areas (previously graded areas that have been inactive for 10 or more days).
- Replace ground cover in disturbed areas as quickly as possible
- Enclose, cover, water twice daily, or apply approved chemical soil binders to exposed piles with 5 percent or greater silt content.
- Water active grading sites at least twice daily during construction activities.
- Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 miles per hour over a 30-minute period.
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 feet of freeboard (i.e., minimum vertical distance between top of the load and the top of the trailer), in accordance with Section 23114 of the California Vehicle Code/
- Sweep streets at the end of the day if visible soil material is carried over to adjacent roads.

- Install wheel washers or gravel construction entrances where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the sites each trip.
- Post and enforce traffic speed limits of 15 miles per hour or less on all unpaved roads.

Implementation of SCAQMD Rule 403 would further reduce impacts, which are shown in **Table 3** to be less than significant. Therefore, impacts during project construction would be less than significant and no mitigation is required.

Operation. Operation of the proposed project would result in emissions of air pollutants as well, which were also modeled using CalEEMod. Default values provided by CalEEMod were used for operation of the project. **Table 4, Estimated Operational Emissions – Proposed Project**, identifies the maximum daily emissions for each pollutant during project operation.

Table 4
Estimated Operational Emissions – Proposed Project

	Emissions in Pounds per Day					
Emissions Source	**VOC**	**NO_X**	**CO**	**SO_X**	**PM10**	**PM2.5**
Summertime Emissions[1]						
Area and Energy Sources	0.90	0.10	0.09	0.00	0.01	0.01
Mobile Sources	0.39	1.16	4.69	0.01	0.84	0.23
Summertime Totals	**1.29**	**1.26**	**4.78**	**0.01**	**0.85**	**0.24**
SCAQMD Thresholds	55	55	550	150	150	55
Exceeds Threshold?	NO	NO	NO	NO	NO	NO
Wintertime Emissions[2]						
Area Sources	0.90	0.10	0.09	0.00	0.01	0.01
Mobile Sources	0.40	1.22	4.58	0.01	0.84	0.23
Wintertime Totals	**1.30**	**1.32**	**4.67**	**0.01**	**0.85**	**0.24**
SCAQMD Thresholds	55	55	550	150	150	55
Exceeds Threshold?	NO	NO	NO	NO	NO	NO

Source: Impact Sciences, Inc. Emissions calculations are provided in ***Appendix A****.*
Totals in table may not appear to add exactly due to rounding in the computer model calculations.
[1] *"Summertime Emissions" are representative of the conditions that may occur during the ozone season (May 1 to October 31).*
[2] *"Wintertime Emissions" are representative of the conditions that may occur during the balance of the year (November 1 to April 30).*

As shown above in **Table 4**, unmitigated operational emissions associated with the day-to-day activities of the proposed project would not exceed any of the operational thresholds of significance.

Localized emissions were calculated assuming a project site approximately 2 acres in size with sensitive receptors within 25 meters of the project boundary. Localized emissions consist only of emissions originating on the project site. Estimated localized emissions are shown in **Table 5**.

As shown, localized emissions would not exceed any of the localized emissions thresholds. Construction emissions of PM do not include any of the standard fugitive dust control methods recommended by the SCAQMD for all construction projects and actual emissions would, therefore, be lower than shown.

Table 5
Estimated Localized Emissions

Localized Emissions	Pollutant (pounds per day)[1]			
	NO_X	**CO**	**PM10**	**PM2.5**
Construction	22	14	5.8	3.6
LST Screening Criteria	147	827	6	4
Exceeds Threshold?	NO	NO	NO	NO
Operational	0.10	0.09	0.01	0.01
LST Screening Criteria	147	827	2	1
Exceeds Threshold?	NO	NO	NO	NO

*Source: Impact Sciences, Inc. Emissions calculations are provided in **Appendix A**.*

1 *The NO_X thresholds contained in the SCAQMD lookup tables are based on emissions of NO_X and assume gradual conversion to NO_2 based on the distance from the Project site boundary.*

Projects that generate emissions below the regional thresholds of significance would not be considered to contribute a substantial amount of air pollutants. Therefore, construction and operational emissions would have a less than significant impact.

Since operation of the proposed project would not result in significant net additional air pollutant emissions, the proposed project would not hinder, disrupt, or delay the implementation of any air quality control measures. The proposed project would also comply with all applicable rules, regulations, and recommended actions. Therefore, the proposed project is consistent with the applicable air quality plans. No impact would occur and no further analysis is required.

c) Less than Significant Impact. The SoCAB is in nonattainment of state and federal standards for ozone, PM10, and PM2.5, and in non-attainment of state standards for NOx. Los Angeles County is also in nonattainment for lead; however, this is due to exceedances from a small number of facilities, the nearest of which are located in the cities of Industry and Vernon. Ozone is formed in the atmosphere via chemical reactions of reactive organic gases (ROG) and NO_X in sunlight. Emissions of ROG are generated from combustion engines, such as those used in motor vehicles and construction equipment, and from architectural coatings and the use of solvents and cleaners. Emissions of NO_X are generated principally from combustion engines such as those used in motor vehicles and construction equipment. Emissions of PM10 are generated by both construction activities, such as grading, as well as by motor vehicles traveling over paved and unpaved surfaces.

The SCAQMD CEQA Guidelines state that SCAQMD emissions thresholds were developed such that emissions from an individual project that exceed the threshold would be cumulatively considerable. As emissions from this project are below the threshold for all pollutants during both construction and operation, the project would not 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. As a result, no mitigation measures are required. No impact would occur and no further analysis is required.

d) **Less than Significant Impact.** Sensitive receptors in the project area are defined as residential areas adjacent to the proposed project as well as students at the existing Berendo Middle School campus. During construction, sensitive receptors could be exposed to a variety of airborne emissions including those from construction equipment. However, due to the limited scale and the short duration of construction, the proposed project would not expose sensitive receptors to substantial pollutant concentrations during construction. Additionally, the localized impacts summarized in **Table 5** reflect work done by the SCAQMD to provide conservative screening levels for potential health impacts for sensitive receptors near proposed projects. That is, the thresholds shown in **Table 5** are considered by the SCAQMD to be minimum levels at which it is possible health impacts might occur given worst-case conditions for receptors within 25 meters of a 2-acre project in the project area. Emissions below those levels would not cause impacts to sensitive receptors, including students, even in worst-case conditions. The emissions shown in **Table 5** for NOx and CO are well below the thresholds. Emissions of PM10 and PM2.5 are also below the thresholds even though they do not include any basic dust control measures, such as those recommended by the SCAQMD for construction projects. SCAQMD Rule 403 provides for basic dust control at all construction sites, including watering during demolition and grading. Rule 403 would be followed at all times during construction, thus significantly reducing dust and other air pollutant generation at the project site. Consequently, actual emissions of PM10 and PM2.5 would be much lower than the values reported in **Table 5**.

The proposed project would not include any sources of risk to sensitive receptors during operation, but would include sensitive receptors such as school staff, faculty, and students. The surrounding land uses are primarily residential and commercial, with no substantial sources of toxic air contaminants. Consequently, operation of the proposed project would not cause sensitive receptors to be exposed to substantial pollutant concentrations.

CO Hotspots

Motor vehicles are a primary source of pollutants within the project vicinity. Traffic congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed state and/or federal standards are termed CO "hotspots." Such hotspots are defined as locations where the ambient CO concentrations exceed the state or federal ambient air quality standards. CO is produced in greatest quantities from vehicle combustion and is usually concentrated at or near ground level because it does not readily disperse into the atmosphere. As a result, potential air quality impacts to sensitive receptors are assessed through an analysis of localized CO concentrations. Areas of vehicle congestion have the potential to create CO hotspots that exceed the state ambient air quality 1-hour standard of 20 ppm or the 8-hour standard of 9.0 ppm. The federal levels are less stringent than the state standards and are based on 1- and 8-hour standards of 35 and 9 ppm, respectively. Thus, an exceedance condition would occur based on the state standards prior to exceedance of the federal standard.

The project was evaluated to determine if it would cause a CO hotspot utilizing a simplified CALINE4 screening model developed by the Bay Area Air Quality Management District (BAAQMD). The simplified model is intended as a screening analysis that identifies a potential CO hotspot. If a hotspot is identified, the complete CALINE4 model is then utilized to determine precisely the CO concentrations predicted at the intersections in question. This methodology assumes worst-case conditions (i.e., wind direction is parallel to the primary roadway and 90 degrees to the secondary road, wind speed of less than 1 meter per second and extreme atmospheric stability) and provides a screening of maximum, worst-case, CO concentrations. This method is acceptable to the SCAQMD as long as it is used consistently with the *BAAQMD Guidelines*. This model is utilized to predict future CO concentrations 0 and 25 feet from the intersections in the study area based on projected traffic volumes from the intersections contained in the project traffic study.[19] Intersections operating at level of service (LOS) between A through D are determined to not have the potential to create a CO Hotspot and are therefore not included in the analysis. Intersections operating at an LOS of E or F are considered have to have the potential to create a CO hotspot. Post-project maximum future CO concentrations were calculated for peak-hour traffic volumes for both am and pm peak hours. The results of these CO concentration calculations are presented in **Table 6, Carbon Monoxide Concentrations – With Cumulative and Project Traffic**, to present the worst-case scenario the determination of significance is based on representative receptors located 0 feet from the intersection. Receptors 25 feet from an intersection would experience lower concentrations and

[19] KOA Corporation. *Traffic Impact Study for Monsenor Oscar Romero Charter School (MORCS), Los Angeles, CA*. January 2014.

therefore were not calculated. Only one of intersections included in the traffic study was estimated to experience an LOS of E or F under cumulative plus project conditions.

Table 6
Carbon Monoxide Concentrations – With Cumulative and Project Traffic

Intersection	AM 1-Hour	PM 1-Hour	8-Hour
Vermont Avenue and Olympic Blvd	4.0	4.1	2.9
Exceeds state 1-hour standard of 20 ppm?	NO	NO	—
Exceeds federal 1-hour standard of 35 ppm?	NO	NO	—
Exceeds state 8-hour standard of 9.0 ppm?	—	—	NO
Exceeds federal 8-hour standard of 9 ppm?	—	—	NO

Source: Impact Sciences, Inc. Emissions calculations are provided in ***Appendix A****.*

As shown, the CALINE4 screening procedure predicts that, under worst-case conditions, future CO concentrations at the intersection would not exceed the state 1-hour and 8-hour standards with the operation of the proposed project. No significant CO hotspot impacts would occur to sensitive receptors in the vicinity of the intersection. As a result, no significant project-related impacts would occur relative to future carbon monoxide concentrations. The impact would be less than significant, and no further analysis is required.

e) **No Impact.** Land uses primarily associated with odorous emissions include waste transfer and recycling stations, wastewater treatment plants, landfills, composting operations, petroleum operations, food and byproduct processes, factories, and agricultural activities, such as livestock operations. The proposed project does not include any of these types of land uses. In addition, the proposed project would not be sited near any of these recognized sources of odors. Therefore, the project would have no impact with respect to odors. As a result, no impact would occur, no further analysis is required, and no mitigation measures are required.

	Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
IV.	**BIOLOGICAL RESOURCES. Would the project:**				
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 Wildlife 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 Wildlife 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 (e.g., oak trees or California walnut woodlands)?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Responses:

a-d & f) **No Impact.** The project site is located in an urban area of the City of Los Angeles. Berendo Middle School and MORCS currently operate on the project site. No threatened, endangered, or rare species or their habitats, locally designated species, locally designated natural communities, riparian or wetland habitats, or wildlife corridors exist on this site. The site is not within an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or similar plan. The site is neither within nor proximate to any Significant Ecological Area, Land Trust, or Conservation Plan.[20] No impact would occur and no further analysis is needed.

e) **No Impact.** The proposed project would include the removal of three trees from the project site. The City of Los Angeles Municipal Code Section 96.303.5, defines protected trees as:

> *Any of the following Southern California native tree species, which measures four inches or more in cumulative diameter, four and one-half feet above the ground level at the base of the tree:*
>
> - *Oak tree including Valley Oak (Quercus lobata) and California Live Oak (Quercus agrifolia), or any other tree of the oak genus indigenous to California but excluding the Scrub Oak (Quercus dumosa).*
> - *Southern California Black Walnut (Juglans californica* var. *californica)*
> - *Western Sycamore (Platanus racemosa)*
> - *California Bay (Umbellularia californica)*

None of the trees to be removed from the project site are protected trees as defined above. No impact would occur and no further analysis is required.

20 *2014 Phase One Environmental Site Assessment,* prepared by The Planning Center/DCE & E (**Appendix C)**

	Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
V.	**CULTURAL RESOURCES. Would the project:**				
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?	☐	☒	☐	☐

Responses:

a) No Impact. A project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.[21] Section 15064.5 of the *State CEQA Guidelines* defines a historical resource as (1) a resource listed in or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources; (2) a resource listed in a local register of historical resources or identified as significant in an historical resource survey meeting certain state guidelines; or (3) an object, building, structure, site, area, place, record or manuscript that a lead agency determines to be significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided that the lead agency's determination is supported by substantial evidence in light of the whole record. Berendo Middle School and MORCS currently operate on the project site. No known historic resources exist on the project site.[22] The project site is not located in a City of Los Angeles Historic Preservation Overlay Zone and does not contain any site, building, or structure listed as a Los Angeles Historic-Cultural Monument (HCM).[23] The proposed project would require the removal of 10 bungalows from the site. The bungalows are typical modular classrooms and would not be eligible historic resources. As such, no adverse impact to historical resources would occur, and no further analysis is necessary.

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21 *California Public Resources Code Section 21084.1*

22 California State Parks, Office of Historic Preservation, California Historical Resources, http://ohp.parks.ca.gov/ListedResources/?view=county&criteria=19

23 Los Angeles Department of City Planning, Office of Historic Resources, Designated Historic-Cultural Monuments http://www.preservation.lacity.org/files/HCMDatabase%23072213_0.pdf

b) Less Than Significant with Mitigation Incorporated. Section 15064.5 of the *State CEQA Guidelines* defines significant archaeological resources as resources that meet the criteria for historical resources, as discussed above, or resources that constitute unique archaeological resources. The project site is located in an urbanized area of the City and has been subject to past subsurface disturbance associated with grading and foundations. It is unlikely that undisturbed unique archeological resources exist on the project site. However, grading activities associated with development of the proposed project would cause new subsurface disturbance and could result in the unanticipated discovery of unique archeological resources. In the event of an unexpected disturbance, significant impacts to archaeological resources could occur. However, implementation of **Mitigation Measure CR-1** would reduce potentially significant impacts to a less than significant level. No further analysis is necessary.

c) Less Than Significant with Mitigation Incorporated. As discussed above, the project site has been previously disturbed and, therefore, it is unlikely that paleontological resources or unique geologic features are present in the area of the site. Grading on the project site would cause new subsurface disturbance and therefore, unanticipated discovery of unique paleontological resources is possible. With implementation of **Mitigation Measure CR-2**, the potential impacts of the proposed project on paleontological resources would be reduced to a less than significant level, and no further analysis is necessary.

d) Less Than Significant with Mitigation Incorporated. No formal cemetery exists on-site or in the vicinity of the proposed project. As the project site has been subject to past subsurface disturbance associated with grading and foundations, it is unlikely that intact human remains are present beneath the site. However, the unanticipated discovery of intact human remains is possible. In the event of an unexpected disturbance, significant impacts to archaeological resources and human remains could occur. However, implementation of required **Mitigation Measure CR-3** would reduce potentially significant impacts to less than significant levels. No further analysis is necessary.

Mitigation Measures

The following mitigation measures are required to reduce potential impacts to cultural resources to a level that is less than significant.

CR-1: In the event that archaeological resources are uncovered on the project site during grading or other construction activities, the construction contractor will notify the project applicant (YPI/PCSD) and LAUSD's Office of Environmental Health and Safety (OEHS) immediately and work must stop within a 100-foot radius until a qualified archeologist has evaluated the find. Construction activity may continue unimpeded on other portions of the project site. If the find is determined by the qualified archeologist to be a unique archeological resource, as defined by Section 2103.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of Section 21083.2 of the Public Resources Code. If the find is determined not to be a unique archeological resource, no further action is necessary and construction may continue.

CR-2: If paleontological resources are uncovered during excavation of the project site, the construction contractor will notify YPI/PCSD, LAUSD's OEHS, and the Natural History Museum of Los Angeles County Vertebrate Paleontology Section immediately and work must stop within 100 feet of the find to allow a qualified paleontologist to appropriately remove the find.

CR-3 If during excavation of the project site human remains are discovered, the construction contractor will notify LAUSD's OEHS immediately and the steps described in *State CEQA Guidelines* Section 15064.5(e) shall be followed.

(1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

(A) The coroner of the County in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and

(B) If the coroner determines the remains to be Native American:

1. The coroner shall contact the Native American Heritage Commission within 24 hours.

2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.

3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or

(2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance. The applicant shall bear the cost of implementing this mitigation.

(A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.

(B) The descendant identified fails to make a recommendation; or

(C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

	Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VI.	**GEOLOGY AND SOILS. Would the project:**				
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 waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Responses:

a-i) Less Than Significant Impact. The project site is not located within the boundaries of an Earthquake Fault Zone (EFZ) (formerly Alquist-Priolo Special Studies Zone) identified for fault-rupture hazard as defined by the Alquist-Priolo Earthquake

Fault Zoning Act.[24] The project site is located approximately 4.5 miles east of the Newport-Inglewood Fault, and approximately 3.8 miles northwest of the Hollywood Fault, the closest active faults. A Geotechnical Study prepared by Converse Consultants and included in **Appendix B** determined that while the project site is located within the vertical projection of the Los Angeles segment of the Puente Hills Blind Thrust Fault, the potential for surface ground rupture at the project site is considered low.[25] Therefore, impacts would be less than significant and no further analysis is necessary.

a-ii) Less Than Significant with Mitigation Incorporated. The project site is located within the seismically active Southern California region, thus there is some possibility that there could be (a) trace(s) of (a) previously unidentified fault(s) on the project site. If evidence of faulting were to be discovered during the grading phase, potential building hazards would be mitigated to a level of less than significant, through application of already-required provisions of the California Building Code (CBC), Title 24 which requires compliance with the CBC Part 2 with specific provisions for seismic design to mitigate and minimize the effects of earthquakes and ground shaking on structures, which sets construction design standards that can reduce potential impacts related to seismic activity, including fault rupture and seismic ground shaking.

Further, the Division of State Architect (DSA) supervises the design and construction of school buildings to ensure that (1) the plans and specifications comply with the State Building Code set forth at Title 24 of the California Code of Regulations and other applicable regulations, and (2) construction has been performed in accordance with the plans and specifications.[26] The purpose of DSA regulation and oversight is to protect life and property by, among other things, ensuring that buildings will resist future earthquakes. Under state law, projects that cost more than $25,000, the Los Angeles Unified School District (LAUSD) must obtain DSA approval of all plans and specifications for school buildings as to safety.[27] The DSA is authorized to inspect school buildings, during and after the construction process, as necessary to protect the safety of pupils, teachers, and the public.[28] The DSA must certify that each new school building meets state law safety requirements.[29]

Mitigation Measure GEO-1, below, is required to ensure compliance with applicable city and state building codes and requirements; therefore, with incorporation of this mitigation measure, potential impacts associated with the exposure of people or

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24 *2013 Geoseismic/Geotechnical Study Report, Proposed Two-Story School Facilities Project MORCS,* prepared by Converse Consultants (**Appendix B)**

25 *2013 Draft Phase One Environmental Site Assessment,* prepared by The Planning Center/DCE & E (**Appendix C)**

26 Education Code §17280

27 Education Code §§17295, 17297

28 Education Code §17311

29 Education Code §17315

structures to potential substantial adverse effects including the risk of loss, injury, or death involving rupture of a known earthquake fault would be reduced to less than significant levels. No further analysis is necessary.

a-iii & iv) **Less Than Significant Impact.** Liquefaction is a seismic phenomenon in which loose, saturated, fine-grained granular soils behave similarly to a fluid when subjected to high-intensity ground shaking. Liquefaction occurs when three general conditions exist: (1) shallow groundwater; (2) low-density, fine, clean sandy soils; and (3) high intensity ground motion. Studies indicate that saturated, loose and medium dense, near-surface cohesionless soils exhibit the highest liquefaction potential, while dry, dense, cohesionless soils and cohesive soils exhibit low to negligible liquefaction potential.

According to the California Department of Conservation (CDC), Hollywood Quadrangle, the site is not located in a State Seismic Hazard Zone for liquefaction.[30] A geotechnical study has been prepared in accordance with the City's approval process. Groundwater was not encountered in exploratory borings to a maximum depth of 51.5 feet. Further, according to the findings in the study, groundwater is not anticipated during construction and will not need to be considered in the project's design.[31] Thus **Mitigation Measure GEO-1** will ensure impacts from liquefaction would be less than significant. No further analysis is necessary.

Landslides and other types of slope failures, such as lateral spreading, can result in areas with varying topography in the event of an earthquake. According to the California Department of Mines and Geology (CDMG) the site is not located in a State Seismic Hazard Zone for landslides.[32] Further, no significant ground slopes exists in the vicinity of the project site.[33] Therefore, the likelihood of seismically induced landslides affecting the project site is considered to be remote. No impact would occur. No further analysis is necessary.

b) **Less Than Significant with Mitigation Incorporated.** Construction associated with site development would result in ground surface disruption during site clearance, which would temporarily expose soils, allowing for possible erosion. Because the total project area is over 1 acre in size, the project applicant would obtain a General Permit for

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30 City of Los Angeles Zoning Information and Map Access System (ZIMAS), http://zimas.lacity.org/

31 *2013 Geoseismic/Geotechnical Study Report, Proposed Two-Story School Facilities Project MORCS,* prepared by Converse Consultants

32 *2013 Geoseismic/Geotechnical Study Report, Proposed Two-Story School Facilities Project MORCS,* prepared by Converse Consultants

33 Both Berendo Street and Kenmore Avenue slope down towards 11th Street. The difference in elevation from the southern to northern boundary of the existing school site is approximately 20 feet. To maintain a level campus, the school was constructed on a series of terraces that were created by cut and fill grading and are buttressed by internal and external retaining walls that reach heights of approximately 20 feet along the northwest corner of the school.

Discharges of Storm Water Associated with Construction Activity to comply with the National Pollution Discharge Elimination System (NPDES), to control erosion and pollution during construction of the project. The permit requires the project applicant to prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to be administered throughout project construction. The SWPPP must list Best Management Practice (BMP) features that the discharger (project applicant) will use to protect storm water runoff.

With implementation of **Mitigation Measures GEO-1** through **GEO-6**, potentially significant impacts related to soil erosion and loss of topsoil would be reduced to a less than significant level. No further analysis is necessary.

c) Less Than Significant with Mitigation Incorporated. Potential impacts with regard to liquefaction and landslide potential are evaluated above.

The proposed project would be designed and constructed in conformance with the California Building Code (CBC). As discussed above, ultimately, DSA will have to approve and supervise each school construction project, ensuring compliance with Title 24 requirements and other laws designed to protect site occupants from earthquake risks. The plans and specifications for school projects to be approved by DSA are subject to all of the performance criteria set forth in Title 24 regarding earthquake safety. Compliance with these codes and requirements would assure safe construction practices and avoid any potentially significant impacts associated with lateral spreading, subsidence, or collapse. **Mitigation Measure GEO-7**, provided below, would ensure that impacts related to the project site's potential for compressible soils would not pose a geologic hazard to future residents. With implementation of mitigation, potentially significant impacts would be reduced to a less than significant level. No further analysis is necessary.

d) Less Than Significant with Mitigation Incorporated. The project site has been previously disturbed by development activity. As described above, the proposed project would be designed and constructed in conformance with Title 24, and would be subject to the requirements of the DSA. Based on soil classifications and laboratory test results, it is anticipated that medium expansive soils could be encountered during construction activities. Any soil materials with an Expansion Index higher than 20 should be mitigated.[34] Compliance with the Title 24 would mitigate potentially significant impacts associated with expansive soils. Nonetheless, **Mitigation Measures GEO-1** through **GEO-8** are required to ensure compliance with these standard regulations. With implementation of mitigation, potentially significant impacts would be reduced to a less than significant level. No further analysis is necessary.

34 *2013 Geoseismic/Geotechnical Study Report, Proposed Two-Story School Facilities Project MORCS,* prepared by Converse Consultants

e) **No Impact.** Project implementation would not use septic tanks or alternative wastewater disposal systems. The proposed project would connect to the existing City of Los Angeles sewer system. Therefore, no impact would occur, and no further analysis is necessary.

Mitigation Measures

The following mitigation measures are required to ensure impacts related to geology and soils would remain less than significant.

GEO-1 The project shall be designed and constructed in accordance with the requirements of Chapter 16 (Structural Design) of the 2013 California Code of Regulations, Title 24, Part 2, Volume 2 (based on the International Building Code, Chapter 16, Section 1613 – Earthquake Loads), and accepted engineering practices.

GEO-2 Prior to start of soil-disturbing activities at the site, the project applicant shall obtain a General Permit for Discharges of Storm Water Associated with Construction Activity to comply with the National Pollution Discharge Elimination System (NPDES), to control erosion and pollution during construction of the project. The project applicant shall prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to be administered throughout project construction. The SWPPP must list Best Management Practice (BMP) features that the discharger (project applicant) will use to protect storm water runoff.

GEO-3 All unpaved demolition and construction areas shall be wetted during excavation, grading, and construction, and temporary dust covers shall be used to reduce dust emissions and meet South Coast Air Quality Management District Rule 403.

GEO-4 The general contractor shall keep the construction area sufficiently damped to control dust caused by construction, hauling and at all times provide reasonable control of dust caused by wind.

GEO-5 All materials transported off-site shall either be sufficiently watered or securely covered to prevent excessive amounts of dust and spillage. Management of excavated soils are subject to oversight by OEHS; all testing shall be conducted in compliance with District Specification 01 4524.

GEO-6 All clearing, earthmoving, or excavation activities shall be suspended during period of high winds (i.e., greater than 25 miles per hour over a 30-minute period), so as to prevent excessive amounts of fugitive dust.

GEO-7 All earthwork and grading, structural foundations, on grade slabs, retaining walls, paving, temporary excavations and backfill, and surface drainage shall be designed and constructed consistent with the recommendations provided in the *Geoseismic/Geotechnical Study Report* prepared by Converse Consultants, August 2013. Specifically, design shall adhere to the recommendations in Section 8.0 Site Grading and Earthwork Recommendations.

GEO-8 The following procedures shall be followed if expansive soils are encountered on the project site:

- Pre-saturation of on-site compacted subgrade soils to an approximate 3 percent above optimum moisture content
- Removal of approximately 1 foot of underlying soils to be replaced with imported sandy material compact fill (with an Expansion Index of less than 20)
- All footing shall be reinforced and all concrete slabs shall include a moisture barrier

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. **GREENHOUSE GAS EMISSIONS. Would the project:**				
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?	☐	☐	☒	☐

The SCAQMD is currently developing significance thresholds for greenhouse gas (GHG) emissions, but has published draft thresholds using a tiered approach. The draft approach as most recently updated in September 2010 is as follows:[35]

- Tier 1: Is the project exempt from further analysis under existing statutory or categorical exemptions? If yes, there is a presumption of less than significant impacts with respect to climate change.

- Tier 2: Is the project's GHG emissions within the GHG budgets in an approved regional plan? (The plan must be consistent with *State CEQA Guidelines* §§15064(h)(3), 15125(d), or 15152(s).) If yes, there is a presumption of less than significant impacts with respect to climate change.

- Tier 3: Is the project's incremental increase in GHG emissions below or mitigated to less than the significance screening level (10,000 metric tons of carbon dioxide equivalent [$MTCO_2e$] per year for industrial projects; 3,500 $MTCO_2e$ for residential projects; 1,400 $MTCO_2e$ for commercial projects; 3,000 $MTCO_2e$ for mixed-use or all land use projects)? If yes, there is a presumption of less than significant impacts with respect to climate change.

- Tier 4: Does the project meet one of the following performance standards? If yes, there is a presumption of less than significant impacts with respect to climate change.

  - Option #1: Achieve some percentage reduction in GHG emissions from a base case scenario, including land use sector reductions from AB 32 (e.g., 29 percent reduction as recommended by the San Joaquin Valley Air Pollution Control District).

  - Option #2: For individual projects, achieve a project-level efficiency target of 4.8 $MTCO_2e$ per service population by 2020 or a target of 3.0 $MTCO_2e$ per service population by 2035.

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35 South Coast Air Quality Management District, "Greenhouse Gases (GHG) CEQA Significance Thresholds Working Group Meeting #6," http://www.aqmd.gov/ceqa/handbook/GHG/2008/oct22mtg/oct22.html. 2008.

For plans, achieve a plan-level efficiency target of 6.6 $MTCO_2e$ per service population by 2020 or a target of 4.1 $MTCO_2e$ per service population by 2035.

- Tier 5: Does the project obtain offsets alone or in combination with the above to achieve the target significance screening level (offsets provided for 30-year project life, unless project life limited by permit, lease, or other legally binding conditions)? If yes, there is a presumption of less than significant impacts with respect to climate change. Otherwise, the project is significant.

As of July 2011, the SCAQMD has not announced when staff is expecting to present a finalized version of these thresholds to the Governing Board for consideration. The SCAQMD has adopted Rules 2700, 2701, and 2702 that address GHG reductions; however, these rules are currently applicable to boilers and process heaters, forestry, and manure management projects.

The Tier 3 thresholds are the most applicable to this project. Tier 3 requires that a project's incremental increase in GHG emissions should be below or mitigated to less than the significance screening level. Proposed projects that do not exceed the thresholds would not be considered to have a significant impact on the attainment of air quality goals and would, therefore, be considered to be consistent with the current air quality plan.

The SCAQMD draft thresholds do not provide separate significance thresholds for GHG emissions from construction activities, but recommend including them with operational emissions as amortized emissions over a 30-year project life. Therefore, the amortized construction GHG emissions are included in the project's overall operational emissions and compared to the Mixed Use/All Land Uses threshold of 3,000 $MTCO_2e$ per year.

Responses:

a) **Less Than Significant Impact.** Construction emissions were estimated using CalEEMod according to the same methodology as described above in **Section III, Air Quality.** The SCAQMD recommends that construction GHG emissions be amortized over a 30-year project lifetime and included in the long-term operational GHG emissions. **Table 7, Estimated Operational Greenhouse Gas Emissions,** shows a summary of total estimated GHG emissions from construction and operation of the proposed project and compares the total to the SCAQMD significance thresholds.

Table 7
Estimated Operational GHG Emissions

GHG Emissions Source	Emissions (Metric Tons CO_2e/year)
Proposed Project	
Transportation (Mobile Sources)	118
Area Sources	1
Energy	147
Water & Wastewater	4
Solid Waste	5
Amortized Construction	15
Total GHG Emissions	**289**
SCAQMD Threshold	**3,000**
Exceeds Threshold?	**NO**

Source: Impact Sciences, Inc. Emissions calculations are provided in ***Appendix A****.*
CO_2e = carbon dioxide equivalent.

As shown in **Table 7**, the proposed project's operational emissions would not exceed the threshold of 3,000 $MTCO_2e$ for land use development projects. Consequently there are no significant impacts from GHG emissions attributable to the project. No further analysis is necessary.

b) Less Than Significant Impact. The project site is within the jurisdiction of the SCAQMD, which is the governing authority for air quality planning in the region. The SCAQMD CEQA Guidelines are intended to meet the requirements of Assembly Bill 32 (AB 32), which are the basis for controlling and reducing GHG emissions in California. The SCAQMD draft GHG significance thresholds are calculated such that projects with emissions below the threshold would not impair attainment of AB 32 requirements within the jurisdiction of the SCAQMD. As the net emissions associated with the proposed project would be well below the SCAQMD thresholds, the proposed project would not conflict with plans, policies, or regulations for reducing GHG emissions. In addition, the project would locate a school land use in close proximity to residential land uses, which CARB has recommended as a strategy for reducing vehicle miles traveled and GHG emissions. As a result, the project would not conflict with the state's ability to meet its GHG goals under AB 32 and would result in a less than significant impact. No further analysis is necessary.

	Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII.	**HAZARDS AND HAZARDOUS MATERIALS. Would the project:**				
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 reasonably 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 compiled 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 2 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?	☐	☐	☐	☒
i)	Be located on a site that is (a) a current of former hazardous waste disposal site or solid waste disposal site and, if so, has the waste been removed; (b) a hazardous substance release site identified by the State Department of Health Services in a current list adopted pursuant to Section 25356 of Division 20 of the Health and Safety Code; or (c) a site that contains one or more pipelines, situated underground or above ground, which carries materials or hazardous wastes, unless the pipeline is a natural gas line which is used only to supply natural gas to that school or neighborhood?	☐	☐	☒	☐
j)	Be located on a site where the property line less than the following distance from the edge of respective power line easement: • 100 feet of a 50-133 kV line, • 150 feet of a 220-230 kV line, or • 350 feet of a 500-550 kV line?	☐	☐	☒	☐
k)	Be located on a site that is within 1,500 feet of a railroad track easement?	☐	☐	☐	☒
l)	Be located on a site that is adjacent or near to a major arterial roadway or freeway that may pose a safety hazard?	☐	☐	☐	☒
m)	Be located on a site that is near a reservoir, water storage tanks or high-pressure water lines?	☐	☐	☐	☒
n)	Be located within 1,500 feet of a pipeline that may pose a safety hazard?	☐	☐	☒	☐
o)	Be located on a site that does not have a proportionate length to width ratio to accommodate the building layout, parking and play fields that can be safely supervised?	☐	☐	☐	☒

p)	Be located on a site where the existing or proposed zoning of the surrounding properties is incompatible with schools and may pose a health or safety risk to students?	☐	☐	☐	☒
q)	Be located on a site that contains, or is near, propane tanks that can pose a safety hazard?	☐	☐	☐	☒
r)	Be located on a site with a traffic pattern for school buses that can pose a safety hazard?	☐	☐	☒	☐
s)	Be located on a site that is within 2,000 feet of a significant disposal of hazardous waste?	☐	☐	☐	☒

Responses:

a) Less Than Significant Impact. A significant impact would occur if the proposed project would create a significant hazard though the routine transfer, use, or disposal of hazardous materials. Construction of the proposed project would involve the use of potentially hazardous materials, including vehicle fuels, oils, and transmission fluids. However, all hazardous materials would be contained, stored, and used in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations. In addition, management of excavated soils are subject to oversight by LAUSD's OEHS including testing of the soils which must be compliant with the regulations included in the LAUSD's OEHS Environmental Import/Export Materials Testing District Specification 01 4524.

Operation of the proposed project would involve the limited use and storage of common hazardous substances typical of those used at school facilities. No industrial uses or activities are proposed that would result in the use or discharge of unregulated hazardous materials and/or substances, or create a public hazard through transport, use, or disposal. Hazardous materials expected for occasional use may potentially consist of limited quantities of custodial and maintenance products, including commercial cleansers, lubricants, and paints. In addition, certain courses such as sciences classes and industrial arts may involve small quantities of chemicals, fuels and other petroleum products, solvents, and paints. The design and operation of the proposed project would satisfy all legal requirements by providing for, and maintaining appropriate storage areas for hazardous materials, installing or affixing appropriate warning signs and labels, using commercial services that specialize in the recycling of used hazardous substances (i.e., collecting hazardous materials on a regular basis to minimize the quantity stored on campus), installing emergency wash areas for flushing irritating substances from eyes and exposed skin areas should such contact occur, providing well-ventilated areas in which to use paints and solvents, and maintaining adult supervision during student's use of hazardous materials. All hazardous materials would be contained, stored, and used in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations. Any associated risk would be adequately reduced to a less than significant level through compliance with these standards and regulations, and would not pose significant hazards to the public or the environment. Therefore, impacts related to the transport, use, or disposal of hazardous materials use would be less than significant. No further analysis is required.

b) Less Than Significant with Mitigation Incorporated. A significant impact would occur if the proposed project created a significant hazard to the public or environment due to a reasonably foreseeable release of hazardous materials. Berendo Middle School and MORCS currently occupy the project site. Ten bungalow buildings will be removed from various locations on the Berendo Middle School Campus to accommodate the proposed project. All of the portable bungalows were installed at their current location after 1976; but may have been used elsewhere at prior to this date.[36] It is possible that the structures contain lead-based paint (LBP) and asbestos-containing materials, (ACM) which may potentially create a significant hazard to the public or the environment through the release of hazardous materials into the environment. In the event that ACMs and/or LBP are detected, the applicant will notify the LAUSD Technical Unit and/or the Facilities Services Division M&O, to oversee the abatement process.

LBP is considered a health hazard for people, especially children. From the turn of the century through the 1940s paint manufacturers used lead as a primary ingredient in many oil-based paints. California law requires that all buildings constructed on or before January 1, 1979 or schools constructed on or before January 1993 to be presumed to contain LBPs.[37] Structures are affected by lead-based paint regulations if remodeling, renovations, or demolition activities would disturb lead-based paint surfaces. Similarly, building materials containing asbestos were commonly used in structures built between 1945 and 1980. These materials include vinyl flooring and mastic, wallboard and associated joint compound, plaster, stucco, acoustic ceiling spray, ceiling titles, heating systems components, and roofing materials. Airborne particles of asbestos have been found to be hazardous to human health. With the implementation of **Mitigation Measure HAZ-1**, impacts related to the release of hazardous materials would be less than significant. No further analysis is required.

c) Less Than Significant with Mitigation Incorporated. The project site is currently occupied by an existing school. As discussed above, operation of the proposed project would not involve the use, storage, or transport of substantial quantities of hazardous materials other than those typically associated with a school use. Demolition of the bungalow buildings could result in the release of ACMs or LBPs adjacent to the existing Berendo Middle School. Compliance with existing regulations regarding the

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36 *2013 Draft Phase One Environmental Site Assessment,* prepared by The Planning Center/DCE & E

37 California Code of Regulations (CCR) Title 17, Division 1, Chapter 8, Section 35043

removal of ACMs and LBPs as described in **Mitigation Measure HAZ-1** would reduce potential impacts. Compliance with these regulations would result in less than significant impacts associated with the release of hazardous materials within 0.25 mile of a school. No further analysis is necessary.

d) **Less Than Significant Impact.** The proposed project site is not associated with any known hazardous materials or on any known hazardous materials list.[38] The project site is not listed on the United States Environmental Protection Agency's National Priority List,[39] or the State Water Resources Control Board's Geotracker list.[40] A 2,000-gallon diesel Underground Storage Tank (UST) was identified at Berendo Middle School, approximately 150 feet southeast of the project site. The UST was abandoned in place in 1990 and a diesel fuel release was cleaned up in 1992. The Los Angeles Fire Department issued a closure letter for the UST on July 21, 1992. Due to the distance from the project site, the nature of the release (i.e., diesel fuel), and the issuance of an agency closure letter, the UST does not represent a significant environmental concern with respect to the project site. Therefore, impacts would be less than significant, and no further analysis is required.

e-f) **No Impact.** The project site is not located within an airport land use plan or within the vicinity of a public airport or private airstrip. The nearest public airport is the Los Angeles International Airport, located approximately 12.5 miles southwest of the project site. Therefore, no impact related to an airport land use would occur. No further analysis is necessary.

g) **Less Than Significant Impact.** The proposed project is not anticipated to interfere with an emergency response plan or evacuation plan. During an emergency, surrounding properties would evacuate onto the main roads, towards the freeways. The proposed project would not alter street patterns associated with the major emergency evacuation routes or severely clog the evacuation routes. The proposed project would not result in an increase in the surrounding population as the additional 105 students would already be living in the area. In addition, the proposed project includes a separate drop off/pick up area on 11th Street away from the existing pick-up/drop off area. This would improve traffic flow and result in less congestion along the Berendo Street

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38 The Planning Center/DC&E, *Phase I Environmental Site Assessment*, 2013

39 United States Environmental Protection Agency, National Priorities List website, http://www.epa.gov/superfund/sites/npl/ The National Priorities List is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories.

40 State Water Resources Control Board, Geotracker website, http://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=3228+E+Holt+Ave%2C+West+Covina%2C+CA GeoTracker is a geographic information system (GIS) that provides online access to environmental data. GeoTracker is the interface to the Geographic Environmental Information Management System (GEIMS), a data warehouse which tracks regulatory data about underground fuel tanks, fuel pipelines, and public drinking water supplies.

entrance. Therefore, the impact would be less than significant and no further study is required

h) **No Impact.** The project site is located within a highly developed, urbanized community of the City of Los Angeles and is not subject to wildland fires. No impacts related to wildland fires are anticipated and no further analysis is necessary.

California Department of Education Thresholds

Title 5 of the California Code of Regulation Section 14010 incorporates health and safety factors provided in the California Department of Education's (CDE) *School Site Selection and Approval Guide*. In combination with the thresholds provided in the *State CEQA Guidelines*, these thresholds (**Thresholds i** through **s**, below) ensure that schools provide a safe learning environment for students. The following discussions provide analysis of the CDE school site safety thresholds.

i) **Less Than Significant Impact.** Historical evidence shows that the project site has not been used as a hazardous or solid waste disposal site. The State Department of Health Services has not identified the project site as a hazardous substance release site nor does the site contain one or more pipelines which transport hazardous waste.[41] Further, as discussed above the project site is not listed on the United States Environmental Protection Agency's National Priority List or the State Water Resources Control Board's Geotracker list. Agency records indicate that a 2,000-gallon "waste" UST was installed at Berendo Middle School in 1935. The UST is listed as being used for "boiler room storage," it is likely that the UST was used for fuel storage for two boilers that are shown in the off-site Classroom Annex on 1954 construction drawings. The Classroom Annex was constructed in 1923 and removed sometime around 1954. Documents available from the City of Los Angeles Fire Department (LAFD) were reviewed as part of the Phase I investigation and it was determined that the UST is a 2,000-gallon diesel fuel tank that was properly closed under agency oversight in 1992.[42] Therefore, impacts related to being located on a hazardous materials disposal site would be less than significant and no further analysis is required.

j) **Less Than Significant Impact.** Pursuant to CCR, Title 5, Section 14010(c), the property line for a new school site shall be the following minimum distances from the edge of a high-voltage power line easement: 100 feet for 50–133 kV lines; 150 feet for 220–230 kV lines; and 350 feet for 500–550 kV lines. The LADWP indicated that all power

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41 National Pipeline Mapping System, NPMS Public Map Viewer, https://www.npms.phmsa.dot.gov/PublicViewer/composite.jsf

42 *2013 Phase One Environmental Site Assessment*, prepared by The Planning Center/DCE & E

lines within 350 feet of the site maintained a 50 kV line or less.[43] Thus impacts would be less than significant. No further analysis is required.

k) **No Impact.** No railroad tracks are located within a 1,500-foot radius of the project site. An underground metro line (which provides service for the purple and red subway lines) is located approximately 1 mile north of the project site along Wilshire Boulevard. However, the existing subway would not pose any safety risk to students traveling to and from the school site. Therefore, no impact would occur and no further analysis is required.

l) **No Impact.** No arterial roadway or freeway is located within 500 feet of the project site. The surrounding streets are categorized as local roads (Berendo Street, 12th Street, and Kenmore Avenue) or collector roads (11th Street). Olympic Boulevard, Vermont Avenue, and Pico Boulevard are located approximately 0.25 mile north, east, and south of the project site, respectively. These major roadways are categorized as either Class II major highways or secondary highways.[44] They are sufficiently set back from the project site that they are not considered to pose a significant safety hazard to students that attend MORCS. No adverse impact would occur, and no further analysis is necessary.

m) **No Impact.** Pursuant to CCR, Title 5, Section 14010(h), a school site shall not be located near an aboveground water tank that can pose a safety hazard, as determined by a risk analysis study conducted by a competent professional. The CDE *School Site Selection and Approval Guide* (2000) extends the regulatory protection for hazardous substance pipelines to high-pressure water lines within 1,500 feet of a school site.

The project site and vicinity are serviced by the Los Angeles Department of Water and Power (LADWP). The LADWP does not operate any reservoirs or water storage tanks near the project site. In response to an information request, the LADWP responded that it does not have any high-pressure water lines within 1,500 feet of the project site. The Metropolitan Water District (MWD) also indicated that it has no existing or proposed facilities or rights-of-way within the limits of the project.[45] Therefore, no impact would occur related to being located near a reservoir or water storage tank and no further analysis is necessary.

n) **Less Than Significant Impact.** Pursuant to CEC Section 17213(a)(3), a school district shall not approve a project involving the acquisition of a school site that contains one or more aboveground or underground pipelines that carry hazardous substances, acutely hazardous materials, or hazardous wastes, unless the pipeline is a natural gas line that is used only to supply natural gas to that school or neighborhood. Under CCR,

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43 *2013 Phase One Environmental Site Assessment*, prepared by The Planning Center/DCE & E

44 *2013 Phase One Environmental Site Assessment*, prepared by The Planning Center/DCE & E

45 *2013 Phase One Environmental Site Assessment*, prepared by The Planning Center/DCE & E

Title 5, Section 14010(h) the school site shall not be located near a fuel storage tank or within 1,500 feet from the easement of an aboveground or underground pipeline that can pose a safety hazard, as determined by a risk analysis study conducted by a competent professional, which may include certification from a local public utility commission.

No high-pressure natural gas pipelines operate within a 1,500-foot radius of the project site.[46] The Southern California Gas Company (SoCalGas) has confirmed the presence of several medium pressure natural gas mains (operating under 60 pounds per square inch gauge [psig]) which operate within a 1,500-foot radius of the site.[47] These pipelines supply natural gas to the surrounding neighborhood and project site and would not pose a significant safety hazard to individuals on the project site. The LADWP and the Metropolitan Water District do not maintain any high-pressure water lines within 1,500 feet of the project site.[48] Thus impacts would be less than significant. No further analysis is required.

o) **No Impact.** The project site is rectangular parcel approximately 1.1-acres in size. The site is not unusually shaped and has a sufficient length to width ratio that is consistent with CDE standards for school sites, which state that the length-to-width should not exceed 2:1. As illustrated in the project description, the proposed structures, parking, and play areas could be accommodated within the site. There would be no impact, and further analysis is not required.

p) **No Impact.** The project site is located within an urbanized community of the City of Los Angeles and is surrounded by residential uses. Berendo Middle School and the existing MORCS facilities are currently operating on the project site. As such, no change would occur to land use and the proposed project would be sited on an existing school property. Further, LAUSD encourages siting schools within existing neighborhoods. Therefore, no adverse impacts to student health or safety would occur as a result of surrounding development, and no further analysis is required.

q) **Less Than Significant Impact.** Although no propane tanks are known to be located on the project site, propane tanks could be present at businesses located along the surrounding commercial corridors, less than 0.25 mile from the project site, and at single- and multi-family residences located in the immediate vicinity of the project site. Rules and regulations pertaining to the storage, transportation, and use of propane would ensure that all propane tanks would not pose a safety hazard to individuals on the project site. Impacts would be less than significant, and no further analysis is required.

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46 *2013 Draft Phase One Environmental Site Assessment*, prepared by The Planning Center/DCE & E

47 *2013 Draft Phase One Environmental Site Assessment*, prepared by The Planning Center/DCE & E

48 *2013 Draft Phase One Environmental Site Assessment*, prepared by The Planning Center/DCE & E

r) Less Than Significant Impact. The pick-up/drop off area for the proposed project would be located along 11th Street, separate from the existing Berendo Middle School bus pick-up/drop off area which is located on Berendo Street. Impact would be less than significant, and no further analysis is required.

s) No Impact. Database reviews conducted as part of the Phase I Environmental Site Assessment prepared for the proposed project identified no hazardous waste disposal sites within 2,000 feet of the project site.[49] No impacts would occur, and no further analysis is required.

Mitigation Measures

The following mitigation measures are required to ensure impacts related to hazards and hazardous materials would remain less than significant.

HAZ-1 Asbestos and lead-based paint surveys shall be conducted on the buildings to be demolished prior to the start of construction. In the event that asbestos and lead-based paint are detected, they shall be abated in accordance with all applicable rules and regulations. Abatement activities shall be completed to the satisfaction of the appropriate regulatory agency(ies) prior to issuance of demolition permits for the proposed project. Abatement of asbestos shall be conducted in accordance with SCAQMD Rule 1403, Asbestos Emissions from Demolition/Renovation Activities.

[49] 2013 Draft Phase One Environmental Site Assessment, prepared by The Planning Center/DCE & E

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY. Would the project:				
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 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 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 areas 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)	Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Responses:

a) Less Than Significant Impact with Mitigation Incorporated. A significant impact would occur if the proposed project discharges water that does not meet the quality standards of agencies which regulate surface water quality and water discharge into stormwater drainage systems. A significant impact would also occur if the proposed project would not comply with all applicable regulations with regard to surface water quality as governed by the State Water Resources Control Board (SWRCB).

Three general sources of potential short-term, construction-related stormwater pollution associated with the proposed project include: (1) the handling, storage, and disposal of construction material containing pollutants, (2) the maintenance and operation of construction equipment; and (3) earth moving activities which, when not controlled, may generate soil erosion via storm runoff or mechanical equipment.

As required under the NPDES, the project applicant is responsible for preparing a SWPPP to mitigate the effects of erosion and the inherent potential for sedimentation and other pollutants entering the stormwater system. The primary objective of the NPDES stormwater program are to: (1) effectively prohibit non-storm water discharges, and (2) reduce the discharge of pollutants from stormwater conveyance systems to the Maximum Extent Practicable ("MEP" statutory standards) The SWPPP would incorporate the required implementation of Best Management Practice (BMPs) for erosion control and other measures to meet the NPDES requirements for stormwater. Implementation of the BMPs identified in the SWPPP and compliance with the NPDES and City discharge requirements would ensure that the construction of the proposed project would not violate any water quality standards or discharge requirements, or otherwise substantially degrade water quality. Furthermore, the implementation of the **Mitigation Measures HYD-1** through **HYD-4** would ensure that the proposed project's construction-related water quality impacts would be less than significant with mitigation incorporated.

The proposed project would continue to generate operational-related surface water runoff. The project site generally drains from south to north. Surface water drainage within paved areas of the project site is controlled by subtle topographic northward gradients that direct water to local collector drains for off-site conveyance and eventual discharge to the Los Angeles River. Stormwater run-off around the project site is controlled by curb and gutter systems and catchment basins within the local streets.

The proposed project would also comply with water quality standards and wastewater discharge requirements set forth by the Standard Urban Storm Water Mitigation Plan (SUSMP) for Los Angeles County and Cities in Los Angeles County and approved by the Los Angeles Regional Water Quality Control Board (LARWQCB). Full compliance with the SUSMP and implementation of design-related BMPs, including applicable requirements in the mitigation measures below, would ensure that the operation of the proposed project would not violate any water quality standards or discharge requirements or otherwise substantially degrade water quality. Therefore, operational water quality impacts would be less than significant with mitigation incorporated. No further analysis is necessary.

b) No Impact. A significant impact would occur if the proposed project substantially depleted groundwater or interfered with groundwater recharge. The proposed project would not install any groundwater wells, and would not otherwise directly withdraw any groundwater. The project site is currently developed and is not currently used for groundwater recharge activities. Therefore, no impacts related to groundwater are anticipated. No further analysis is required.

c) Less Than Significant Impact with Mitigation Incorporated. A significant impact would occur if the proposed project substantially altered the drainage pattern of the site or an existing stream or river, so that substantial erosion or siltation would result on- or off-site. No stream or river is present on the project site. As discussed above, surface water drainage within paved areas of Berendo Middle School and MORCS are controlled by subtle northward topographic gradients that direct water to local collector drains located on the northern portion of the site. Very little change would occur to the drainage pattern on the project site as the site includes a curb and gutter system for stormwater drainage.

During construction, erosion, and siltation from the project site could increase significantly as a result of soil disturbance and construction operations. Construction-related activities that expose soils to potential mobilization by rainfall/runoff and wind are primarily responsible for sediment releases. Such activities include removal of vegetation from the site, grading of the site, and trenching for infrastructure improvements. Environmental factors that affect erosion include topographic, soil, and rainfall characteristics. Unless adequate erosion controls are installed and maintained at the site during construction, significant quantities of sediment may be delivered to the downstream receiving waters. With implementation of **Mitigation Measures HYD-5** and **HYD-6**, impacts related to erosion and siltation on- or off-site would be less than significant. No further analysis is required.

d) Less Than Significant Impact. A significant impact would occur if the proposed project substantially altered the drainage pattern of an existing stream or river so that flooding would result. No streams or rivers exist on the project site. As discussed above, the project site currently drains south to north. Upon implementation of the proposed project, the drainage pattern for the project site would be similar. Overall runoff from the project site would remain the same, as the percentage of pervious area would be similar. The proposed project would be required to develop a SWPPP, to ensure runoff does not degrade water quality during construction and a SUSMP, to ensure project operations do not degrade water quality. Therefore, impacts related to drainage and flooding would be less than significant. No further analysis is required.

e) Less Than Significant Impact. A significant impact would occur if runoff water exceeded the capacity of existing or planned storm drain systems serving the project site. A project-related significant adverse effect would also occur if a project would substantially increase the probability that polluted runoff would reach the storm drain system. As discussed above, the project site currently drains to the north. Upon implementation of the proposed project, the drainage pattern for the project site would be similar; as well as the amount of runoff from the project site, as there would be a comparable percentage of pervious area with the proposed project. As discussed above, surface water drainage is controlled by northward gradients that direct water to local collector drains for off-site conveyance and eventual discharge to the Los Angeles River. Stormwater run-off around the project site is controlled by curb and gutter systems and catchment basins within the local streets.

As the drainage pattern, percentage of pervious area, and uses of the project site would not change, the proposed project would not result in runoff exceeding the capacity of the existing or planned storm drain system. Therefore, impacts related to runoff would be less than significant. No further analysis is necessary.

f) Less Than Significant Impact. A significant impact would occur if the proposed project would substantially degrade water quality. As discussed above, project construction and operations would be required to comply with applicable federal, state, and local regulations, as well as code and permit provisions in order prevent violation of water quality standards or waste discharge requirements. The uses associated with the proposed project include educational uses that would not be expected to degrade water quality. Therefore, impacts related to water quality would be less than significant and no further analysis is required.

g-h) No Impact. Pursuant to CEC Section 17212 and 17212.5, and CCR Title 5, Section 14010(g), a school site shall not be located within an area of flood or dam flood inundation unless the cost of mitigating the flood or inundation impact is reasonable.

As designated by the Federal Emergency Management Agency, the project site is located in an area of minimal flooding (Zone X, a moderate risk area with a 0.2 percent annual chance floodplain).[50] Based on a review of the relevant flood inundation maps prepared for the Los Angeles County area, the project site would not be subject to flooding in the event of failure of either the Hansen or Sepulveda dams.[51] No flood impacts would occur and no further analysis is necessary.

i) **No Impact.** As discussed above, the project site would not expose people or structures to significant risk including injury or death as a result of flooding. According to US Army Corps of Engineers Flood Inundation Maps, two dams are located in the Los Angeles County area, the Hansen and Sepulveda Dams. Based on a review of the relevant flood inundation maps, the project site would not be subject to flooding in the event of failure of either dam.[52] Impacts would be less than significant, no further analysis is necessary.

j) **No Impact.** A significant impact would occur if the proposed project exposed persons or structures to an area susceptible to inundation by seiche, tsunami, or mudflow. A seiche is an oscillation of a body of water in an enclosed or semi-enclosed basin, such as a reservoir, harbor, or lake. A tsunami is a great sea wave produced by a significant undersea disturbance. Mudflows result from the downslope movement of soil and/or rock under the influence of gravity. The project site is not mapped within a tsunami hazard zone. Similarly, damage to the project site due to a seiche is not likely at the project site because no bodies of water are present near the site. Furthermore, the project site, which is not positioned downslope from any unprotected slopes or landslide areas, and is not positioned in an area of potential mudflow. Therefore, no impact related to inundation by seiche, tsunami, or mudflow would occur. No further analysis is necessary.

Mitigation Measures

The following mitigation measures are required to ensure impacts related to hydrology and water quality would remain less than significant.

HYD-1 All construction waste shall be disposed properly. Use appropriately labeled recycling bins to recycle construction materials including: solvents, water-based paints, vehicle fluids, broken asphalt and concrete, wood, and vegetation. Nonrecyclable materials/wastes shall be taken to an appropriate landfill. Toxic wastes must be discarded at a licensed regulated disposal site.

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50 *2013 Geoseismic/Geotechnical Study Report, Proposed Two-Story School Facilities Project MORCS,* prepared by Converse Consultants

51 *2013 Draft Phase One Environmental Site Assessment*, prepared by The Planning Center/DCE & E

52 City of Los Angeles, General Plan, Safety Element, Exhibit G, Inundation and Tsunami Hazard Areas in the City of Los Angeles

HYD-2 During construction, leaks, drips, and spills shall be cleaned up immediately to prevent contaminated soil on paved surfaces that can be washed away into the storm drain.

HYD-3 During construction, where truck traffic is frequent, gravel approaches shall be used to reduce soil compaction and limit the tracking of sediment into streets.

HYD-4 All construction vehicle/equipment maintenance, repair, and washing shall be conducted away from storm drains. All major repairs shall be conducted off-site. Drip pans or drop cloths shall be used to catch drips and spills.

HYD-5 During construction, appropriate erosion control and drainage devices shall be incorporated such as interceptor terraces, berms, vee-channels, and inlet and outlet structures.

HYD-6 Following construction and during operation of the project, post development peak stormwater runoff discharge rates shall not exceed the estimated pre-development rate for developments where the increase peak stormwater discharge rate will result in increased potential for downstream erosion.

	Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
X.	**LAND USE AND PLANNING. Would the project:**				
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?	☐	☐	☐	☒

Responses:

a) **No Impact.** The project site is located within the Wilshire Community Plan Area, as established by the City's General Plan. Project implementation would develop a 1.1-acre middle school campus with three one- and two-story buildings, a landscaped courtyard, and an underground parking structure. Surrounding land uses include the Berendo Middle School Campus, residential uses in the immediate vicinity of the project site and several commercial corridors less than 0.25 mile from the project site. The proposed project would result in the construction of the proposed project, which is a school, on an existing school site. Further, the MORCS school currently operates on the existing project site and therefore would not change the existing land use. As such no division of a community would occur. No impact would occur and no further analysis is necessary.

b) **Less Than Significant Impact.** The project site is zoned PF for public facilities. The Community Plan includes several goals, objectives, and policies that would be applicable to the proposed project. These policies are listed below in **Table 8** followed by a determination of the project's consistency with each policy. As shown in the table, the proposed project would be consistent with the Community Plan, as such, impacts would be less than significant and no further analysis is necessary.

Table 8
Project Consistency with Wilshire Community Plan Policies

Wilshire Community Plan Policy	Project Consistency
Schools– Goal 6: Facilitate the provision of public schools and adequate school facilities to serve every neighborhood in the Wilshire Community Plan Area	Consistent. The proposed project would provide an additional 66 student seats, increasing the MORCS' capacity to 405 students.
Schools– Objective 6.1: Locate schools in areas complimentary to existing surrounding land uses with buffering, convenient to local neighborhoods, and with access to recreational opportunities.	Consistent. Residential uses are located east and north of the project site. Berendo Middle School is located immediately south and west of the project site, with single-family residences surrounding the existing middle school. The MORCS school currently operates on the project site and therefore would not represent a change in land use. Seoul International Park is located 0.8 mile northwest of the project site and Normandie Park Recreation Center is located is located 0.7 mile south of the project site.
Schools– Policy 6.1.1: Encourage compatibility between school locations, site layouts, architectural designs, and local neighborhood character.	Consistent. The proposed project will consistent of three one- and two-story buildings which would be similar in height to the existing buildings located on the Berendo Middle School Campus as well as the surrounding neighborhood which includes single- and multi-family buildings. The proposed project will be constructed in accordance with LAUSD Design Guidelines.
Schools– Objective 6.1.2: Encourage public school design that buffers classrooms from noise sources.	Consistent. The proposed project would be located on an existing school site surrounded by residential uses. The project site is elevated above street level which would help to minimize impacts associated with noise.
Schools– Objective 6.1.3: Expansion of existing public school facilities should be considered prior to acquisition of new sites.	Consistent. Berendo Middle School and MORCS currently operate on the project site. The proposed project would mean expansion of the existing MORCS school to allow an additional 105 seats.
Schools– Objective 6.1.4: Encourage cooperation between the LAUSD and the Department of Recreation and Parks to provide shared use of schools and recreation facilities for the entire Wilshire Community.	Consistent. The MORCS would participate in the LAUSD and Department of Recreation and Parks shared use agreement to provide shared use of schools and recreation facilities for the entire Wilshire Community.
Schools– Objective 6.2: Continue to work constructively with the LAUSD to promote the siting and construction of adequate public school facilities phased with anticipated population growth in the Wilshire Community Plan Area.	Consistent. The proposed project would provide an additional 66 student seats, increasing MORCS' capacity to 405 students.
Schools– Policy 6.2.1: Explore creative alternatives for providing new public school sites in the Wilshire Community Plan Area, where appropriate.	Consistent. The proposed project would be constructed on an existing school site in the Wilshire Community Plan Area.
Schools– Objective 6.3: Maximize the use of public schools for neighborhood use, and of local open space and parks for public school use.	Consistent. The MORCS would participate in the LAUSD and Department of Recreation and Parks shared use agreement to provide shared use of schools and recreation facilities for the entire Wilshire Community.
Schools– Policy 6.3.1: Continue to encourage the siting of neighborhood facilities (e.g., libraries, parks, schools, and auditoriums) together as shared use facilities.	Consistent. The MORCS would participate in the LAUSD and Department of Recreation and Parks shared use agreement to provide shared use of schools and recreation facilities for the entire Wilshire Community.
Schools– Objective 6.4: Encourage the provision of charter schools, especially in the Wilshire Center area, as an effective method of delivering quality public education facilities at the neighborhood level.	Consistent. The proposed project is a charter school.

Wilshire Community Plan Policy	Project Consistency
Schools– Policy 6.4.1: Recognize the ability of charter schools to effectively provide classroom space in impacted urban areas.	Consistent. The proposed project is a charter school and would result in the addition of 66 student seats at MORCS, in the urban Pico-Union Neighborhood.
Schools– Policy 6.4.2: Encourage the location of charter schools in the Wilshire Center area as a means to alleviate overcrowded school conditions.	Consistent. The MORCS school is currently operating on the Berendo Middle School Campus with a student population of 339 students. Upon buildout the proposed project will accommodate an additional 66 students increasing capacity within the Wilshire Center area.
Schools– Policy 6.4.3: Support the construction of charter schools as being desirable to public convenience and welfare.	Consistent. The proposed project is a charter school.

c) **No Impact.** The project site is not within a habitat conservation plan or a natural community conservation plan. Thus, the proposed project would not conflict with any applicable conservation elements or natural community conservation plan. No impact would occur as a result of project implementation, and no additional analysis is required.

	Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XI.	**MINERAL RESOURCES. Would the project:**				
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?	☐	☐	☐	☒

Responses:

a-b) No Impact. The project site is located in an area that is already heavily urbanized. The Wilshire Community Plan does not indicate an important mineral resource located on or near the project site. Therefore, no impact associated with mineral resources would occur, and no further analysis is necessary.

	Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII.	**NOISE. Would the project result in:**				
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 2 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?	☐	☐	☐	☒

Responses:

Characteristics of Sound

Sound is technically described in terms of the loudness (amplitude) and frequency (pitch) of the sound. The standard unit of measurement for sound is the decibel (dB). The human ear is not equally sensitive to sound at all frequencies. The "A-weighted scale," abbreviated dB(A), reflects the normal hearing sensitivity range of the human ear. On this scale, the range of human hearing extends from approximately 3 to 140 dB(A). **Table 9** provides examples of A-weighted noise levels from common sources.

Table 9
A-Weighted Decibel Scale

Typical A-Weighted Sound Levels	Sound Level (dB(A), Leq)
Threshold of Pain	140
Jet Takeoff at 100 Meters	125
Jackhammer at 15 Meters	95
Heavy Diesel Truck at 15 Meters	85
Conversation at 1 Meter	60
Soft Whisper at 2 Meters	35

Source: United States Occupational Safety & Health Administration, Noise and Hearing Conversation Technical Manual, 1999.

Noise Definitions

This noise analysis discusses sound levels in terms of Community Noise Equivalent Level (CNEL) and Equivalent Noise Level (Leq).

Community Noise Equivalent Level. CNEL is an average sound level during a 24-hour period. CNEL is a noise measurement scale, which accounts for noise source, distance, single event duration, single event occurrence, frequency, and time of day. Human reaction to sound between 7:00 PM and 10:00 PM is as if the sound were actually 5 dB(A) higher than if it occurred from 7:00 AM to 7:00 PM From 10:00 PM to 7:00 AM, humans perceive sound as if it were 10 dB(A) higher due to the lower background level. Hence, the CNEL is obtained by adding an additional 5 dB(A) to sound levels in the evening from 7:00 PM to 10:00 PM and 10 dB(A) to sound levels in the night from 10:00 PM to 7:00 AM. Because CNEL accounts for human sensitivity to sound, the CNEL 24-hour figure is always a higher number than the actual 24-hour average.

Equivalent Noise Level. Leq is the average noise level on an energy basis for any specific period. The Leq for 1 hour is the energy average noise level during the hour. The average noise level is based on the energy content (acoustic energy) of the sound. Leq can be thought of as the level of a continuous noise that has the same energy content as the fluctuating noise level. The equivalent noise level is expressed in units of dB(A).

Effects of Noise

The degree to which noise can impact the environment ranges from levels that interfere with speech and sleep to levels that cause adverse health effects. Human response to noise is subjective and can vary from person to person. Factors that influence individual response include the intensity, frequency, and pattern of noise, the amount of background noise present before the intruding noise, and the nature of work or human activity exposed to the source.

Audible Noise Changes

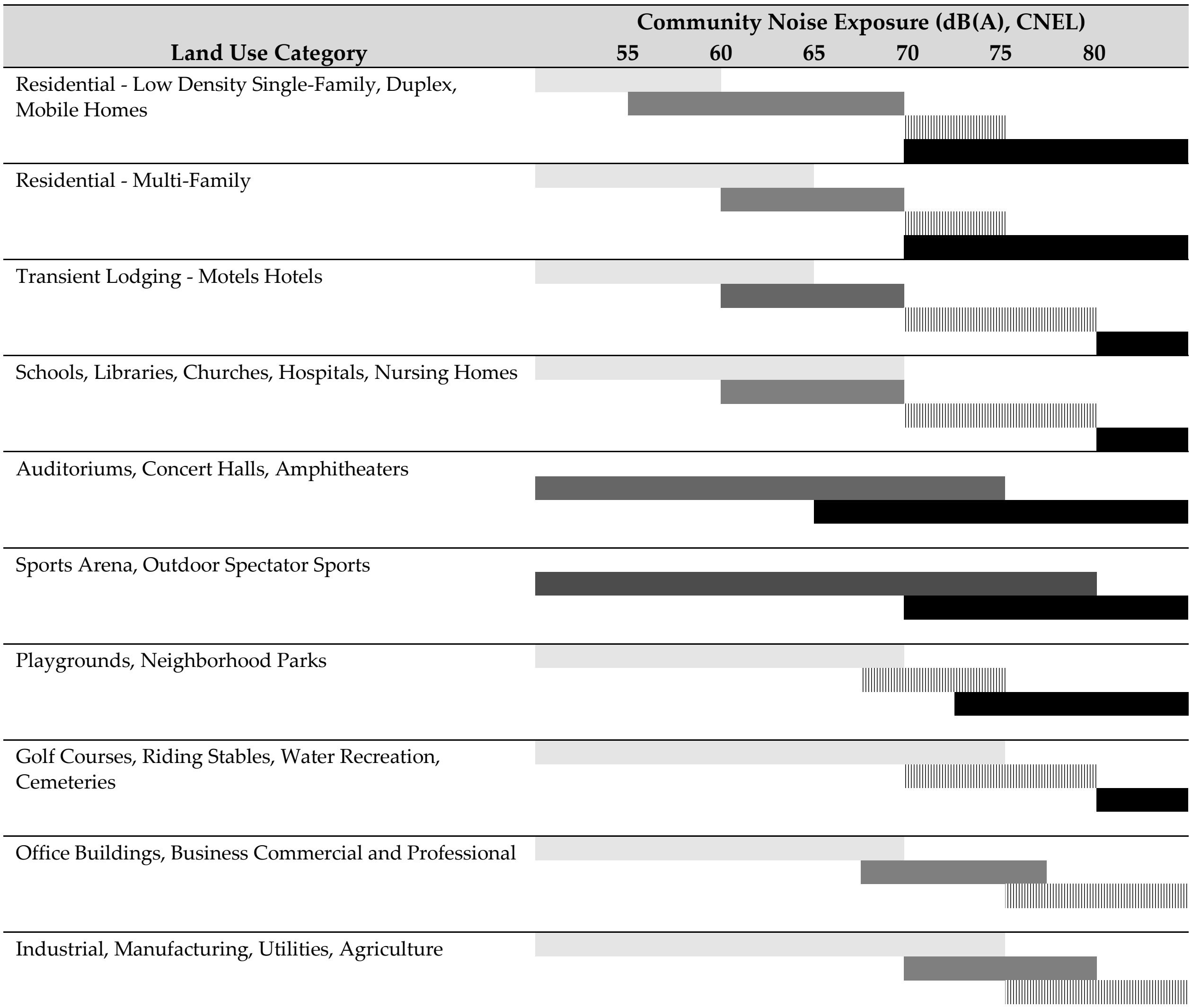
Small perceptible changes in sound level for a person with normal hearing sensitivity is approximately 3 dB(A). A change of at least 5 dB(A) would be noticeable and could produce a community reaction. A 10 dB(A) increase is heard as a doubling in loudness and would produce a community response.

Noise levels decrease as the distance from the noise source to the receiver increases. Noise generated by a stationary noise source, or "point source," will decrease by approximately 6 dB(A) over hard surfaces (e.g., reflective surfaces such as parking lots or smooth bodies of water) and 7.5 dB(A) over soft surfaces (e.g., absorptive surfaces such as soft dirt, grass, or scattered bushes and trees) for each doubling of distance. For example, if a noise source produces a noise level of 89 dB(A) at a reference distance of 50 feet, the noise level would be 83 dB(A) at a distance of 100 feet from the noise source, 77 dB(A) at a distance of 200 feet, and so on. Noise generated by a mobile source will decrease by approximately 3 dB(A) over hard surfaces and 4.5 dB(A) over soft surfaces for each doubling of distance.

Noise is most audible when traveling by direct line-of-sight, a visual path between the noise source and noise receptor. Barriers, such as walls or buildings that break the line-of-sight between the source and the receiver can greatly reduce noise levels from the source since sound can only reach the receiver by diffraction. Sound barriers can reduce sound levels by up to 20 dB(A) or more. However, if a barrier is not high or long enough to break the line-of-sight from the source to the receiver, its effectiveness is greatly reduced.

The California Department of Health Services has established guidelines for acceptable exterior noise levels for each county and city. These standards and criteria are incorporated into the land use planning process to reduce future noise and land use incompatibilities. **Table 10** reflects state guidance that allows the City to ensure integrated planning for compatibility between land uses and outdoor noise.

Table 10
Land Use Compatibility for Community Noise Environments



Normally Acceptable - Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Conditionally Acceptable - New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply system or air conditioning will normally suffice.

Normally Unacceptable - New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable - New construction or development should generally not be undertaken.

Source: California Office of Noise Control, Department of Health Services.

State interior noise standards were established in 1974, when the California Commission on Housing and Community Development adopted noise insulation standards for residential buildings (Title 24, Part 2, California Code of Regulations). Title 24 establishes standards for interior room noise attributable to outside noise sources. Title 24 also specifies that acoustical studies should be prepared whenever a residential building or structure is proposed to be located in areas with exterior noise levels of 60 dB Day-Night Average Noise Level (Ldn) or greater. The acoustical analysis must show that the building has been designed to limit intruding noise to an interior level not exceeding 45 dB Ldn for any habitable room.

Applicable Regulations

City of Los Angeles Municipal Code

The City of Los Angeles Municipal Code (LAMC) has established both construction and operation noise regulations. Between the hours of 7:00 AM and 10:00 PM, in any residential zone of the City or within 500 feet thereof, no person shall operate or cause to be operated any powered equipment or powered hand tool that produces a maximum noise level exceeding the following noise limits at a distance of 50 feet therefrom:

- 75 dB(A) for construction, industrial, and agricultural machinery including crawler-tractors, dozers, rotary drills and augers, loaders, power shovels, cranes, derricks, motor graders, paving machines, off-highway trucks, ditchers, trenchers, compactors, scrapers, wagons, pavement breakers, compressors and pneumatic or other powered equipment;

- 75 dB(A) for powered equipment of 20 horse-power or less intended for infrequent use in residential areas, including chain saws, log chippers and powered hand tools;

- 65 dB(A) for powered equipment intended for repetitive use in residential areas, including lawn mowers, backpack blowers, small lawn and garden tools.

Additionally, according to the LAMC, a noise level increase of five decibels over the existing average ambient noise level at an adjacent property line is considered a noise violation. This standard applies to sources such as consumer electronics, HVAC systems, powered equipment intended for repeated use in residential areas and motor vehicles driven on-site. Section 41.40 of the LAMC also prohibits construction activity from occurring between the hours of 9:00 PM and 7:00 AM Monday through Friday, and between 6:00 PM and 8:00 AM on Saturday.

LAUSD School Upgrade Program EIR

LAUSD has developed a set of policy statements and thresholds related to impacts for on-site school operations. In particular, these thresholds are designed to maintain a safe, comfortable educational environment for children attending LAUSD schools. Noise thresholds for LAUSD classrooms are:

- Maximum exterior noise level 70 dB(A) L10 or 67 dB(A) Leq
- Maximum interior classroom noise level 55 dB(A) L10 or 45 dB(A) Leq
- Maximum permanent increase of noise levels at nearby noise-sensitive land uses of 3 dB(A) or higher
- Classroom acoustical performance shall be 45 dB(A) Leq background noise level (unoccupied) or better with maximum (unoccupied) 0.6 second reverberation time.

a) Less than Significant with Mitigation Incorporated.

Construction Noise Impacts

For purposes of assessing noise impacts on sensitive populations, the following sensitive receptors to the project site were identified for analysis:

- 1110 Berendo Street. This apartment building is 60 feet directly east of the project site and has a direct line of sight to the project site. Primary noise sources were children playing and some traffic.
- 2695 West 11th Street. This apartment complex is 65 feet north of the project site across 11th Street. Because its grade is 6 feet lower than the adjacent project site, the only line of sight into the school and playing fields is from the second floor of this and other buildings on 11th Street. Noise was primarily from the schoolyard, which, as stated, is approximately 6 feet higher than the street.
- 1025 Dewey Avenue. This site is 320 feet north of the site and is a larger apartment building with a higher density of receptors. Because its grade is over 28 feet lower than the project site and has several intervening structures between, there is a minimal line of sight to the project site. Because of its proximity to Olympic Boulevard, ambient noise is influenced by traffic; in addition, barking dogs and children playing at Berendo Middle School could also be heard.

- Northwest corner of South Kenmore and 11th Street. This site is 260 feet northwest of the project site and represents ambient noise at the rear of homes abutting the school. Monitoring was not done directly next to the residences (e.g., 1102 Kenmore) because of the difference in topography (i.e., a large block retaining wall for the playing fields abuts the rear of the residential property lines) and an inability to access the sites. There was low-level ambient noise because students were inside classrooms.

- West 12th Street. Apartments on the south side of West 12th Street face Berendo Middle School and could be exposed to construction or operational noise. Noise measurements were taken on the sidewalk on West 12th Street on the southern edge of Berendo Middle School across from Dewey Street, approximately 425 feet south of the project boundary. These apartments are level with 12th Street and have a direct line of sight into the Berendo School grounds. However, these buildings are 16 feet higher than the grade of the project site. The primary source of noise was from children playing outside, with minimal noise from traffic on West 12th Street and Dewey.

- Berendo Middle School (On-site campus). It should be noted that because construction activities would overlap with portions of the school year, the existing middle school would also be affected during school hours. Construction noise during classroom hours could increase ambient noise inside the classrooms, which are approximately 20 feet south of the project site on a terrace level that is 8 feet higher than the project site. In addition, any construction during outdoor play would increase ambient noise outside, as close as 10 feet from existing playground areas west of the project site at the same terrace level as the project site. Because on-site monitoring on the campus was not possible, noise measurements taken on the sidewalk on West 12th Street represent a conservative representation of ambient noise levels during outdoor play. The bulk of the campus is 16 feet higher than the grade of the project site, with a smaller terraced level fronting Berendo Street that is 8 feet higher than the grade of the project site.

To ascertain the ambient noise levels at these sensitive receptors, DKA Planning took short-term, 15-minute noise readings at all five locations on April 8, 2014 using a Quest Technologies SoundPro DL Sound Level Meter. As shown in **Table 11**, ambient noise levels were relatively uniform in this residential neighborhood, ranging from 55.6 dB(A) Leq at Berendo Middle School to 58.4 dB(A) Leq at the corner of 11th and Kenmore.

Table 11
Construction Noise Levels – Unmitigated

Sensitive Receptor	Distance from Site* (feet)	Maximum Construction Noise Level (dB(A))	Existing Ambient (dB(A), Leq)	New Ambient (dB(A), Leq)	Increase
Multi-family residences at 1110 Berendo	60	73.1	56.9	73.2	16.3
Multi-family residences at 2659 11th	65	75.8	57.4	75.9	18.5
Multi-family residences at 1025 Dewey	320	67.1	58.0	63.2	5.2
Multi-family residences at 11th & Kenmore	260	61.8	58.4	63.5	5.1
Multi-family residences on West 12th	425	69.6	55.6	61.0	5.4
Berendo Middle School campus (indoor) demolition and grading phases	20	58.1	40.6	58.2	17.6
Berendo Middle School campus (outdoor) demolition and grading phases	10	82.3	55.6	82.3	26.7
Berendo Middle School campus (indoor) construction phases	20	59.7	40.6	59.8	28.3
Berendo Middle School campus (outdoor) construction phases	10	74.3	55.6	74.4	18.8

Source: DKA Planning, 2014.
** Assumes equipment operations are set back from property line on average one-third of the total depth of the property facing the adjacent use.*

Construction, demolition (or removal of existing classroom building and other structures), ground clearing, grading, structural, and other noise-generating activities would occur between 7:00 AM and 9:00 PM in accordance with the LAMC. Construction activities would vary over several phases of development and would include off-road larger equipment such as tractors, loaders and smaller equipment such as saws, hammers, and pneumatic tools. The 18-month construction process would begin in summer 2015 and end in fall 2016 and include the following key stages:

- Demolition
  - Removal of approximately 10,000 square feet of restroom and bungalow buildings
  - Removal of about 52,718 square feet of asphalt concrete pavement (4-inch depth) and base material (5-inch depth) from the basketball courts, parking lot, and other existing improvements
  - Removal of three on-site trees
  - Removal of related improvements (basketball poles, chain link fencing, retaining walls, sidewalks)

  - Equipment would include a concrete/industrial saw, dozer, and three loaders that would produce a cumulative reference noise level of 91.2 dB(A) at 50 feet of distance
  - On-Road trucks would generate noise from the export of 8,680 cubic yards of cut-and-fill materials (assumes 20 percent swell of cut materials) and demolition materials from the site to an off-site disposal location

- Grading
  - 9,664 cubic yards of cut materials for the underground parking garage and other site work
  - 2,430 cubic yards of fill
  - On-Road trucks would generate noise from the export of 8,680 cubic yards of cut-and-fill materials (assumes 20 percent swell of cut materials) from the site to an off-site disposal location
  - Equipment would include a rubber tired loader, grader, and dozer that would produce a cumulative reference noise level of 89.8 dB(A) at 50 feet of distance

- Construction
  - Construction of three one- and two-story buildings totaling about 37,000 square feet and a one-level subterranean parking garage
  - On-Road trucks would generate noise from the delivery of building materials to the site
  - Equipment would include a generator set, crane, forklift, rubber tired loader, and three welders that would produce a cumulative reference noise level of 92.8 dB(A) at 50 feet of distance

- Paving
  - Installation of 3 to 4 inches of asphalt concrete over a 4-inch crushed aggregate base
  - On-Road trucks would generate noise from the delivery of paving materials to the site

Table 11 summarizes projected noise levels at nearby sensitive receptors during construction. Land uses on the properties surrounding the project site include multi-family residential and school uses. Construction noise would generally peak during building construction, where up to seven pieces of equipment could produce a cumulative 92.8 dB(A) at 50 feet of distance. This would significantly increase ambient noise levels above 75 dB(A) (the City of Los Angeles threshold) at two of the off-site sensitive receptors and represent increases of more than 5 dB(A) at all off-site receptors. In the absence of attenuation, construction activities would generate maximum off-site noise levels of up to 75.9 dB(A) at the 11th Street residences, an increase of up to 18.5 dB(A).

An increase in noise levels as a result of demolition and grading activities would also occur at Berendo Middle School which is directly adjacent to the project site. Noise levels would be most significant during the demolition phase, where concrete asphalt and base layers would be removed right up to the playground directly west and south of the project site. In addition, grading of the underground garage would potentially be directly adjacent to the playground area as well. Construction activities could increase outside noise levels on the playground by up to 28.3 dB(A), Leq bringing the new noise level on the adjacent playground to 83.9 dB(A) Leq, as shown in **Table 11,** above. Because construction activities would elevate ambient noise levels above the LAUSD exterior noise level (67 dB(A) Leq) at one or more of the adjacent sensitive receptors, as well as exceed the City of Los Angeles threshold of resulting in an increase of more than 5 dB(A) and elevate ambient noise levels above 75 dB(A), the proposed project would result in significant but mitigable construction noise impacts.

As shown in **Table 12, Construction Noise Levels – Mitigated,** the maximum exterior noise level during construction, after implementation of **Mitigation Measures NOI-2** through **NOI-13** (below), would be 61.8 dB(A) Leq, below LAUSD's 67 dB(A) Leq threshold and the City's 75 dB(A).

During construction and demolition activities, the maximum interior ambient noise level would be elevated above the LAUSD threshold (55 dB(A)) for classrooms located on the Berendo Middle School Campus (**Table 12)**. Construction activities including the use of heavy machinery and tools would result in a new ambient noise level of 59.8 dB(A). However, with **Mitigation Measures NOI-1** through **NOI-12** the indoor ambient noise levels for classrooms located on the Berendo Middle School campus would be reduced to 44.2 dB(A) as shown in **Table 12**. Thus construction related impacts would be less than significant and no further analysis is required.

Table 12
Construction Noise Levels – Mitigated

Sensitive Receptor	Distance from Site (feet)*	Maximum Construction Noise Level (dB(A))	Existing Ambient (dB(A), L_{eq})	New Ambient (dB(A), L_{eq})	Increase
Multi-family residences at 1110 Berendo	60	57.1	56.9	60.0	3.1
Multi-family residences at 2659 11th	65	59.8	57.4	61.8	4.4
Multi-family residences at 1025 Dewey	320	58.7	58.0	61.4	3.4
Multi-family residences at 11th & Kenmore	260	58.8	58.4	61.6	3.2
Berendo Middle School campus (indoor) demolition and grading phases	20	40.1	40.6	43.4	2.8
Berendo Middle School campus (outdoor) demolition and grading phases	10	N/A	55.6	N/A	N/A
Berendo Middle School campus (indoor) construction phases	20	41.7	40.6	44.2	3.6
Berendo Middle School campus (outdoor) construction phases	10	58.3	55.6	60.2	4.6

Source: DKA Planning, 2014.
** Assumes equipment operations are set back from property line on average one-third of the total depth of the property facing the adjacent use.*
N/A Assumes that demolition and grading activities are curtailed during outdoor play activities at Berendo Middle School.

As shown in **Table 12, existing** ambient noise levels are relatively uniform in the surrounding residential neighborhood, ranging from 55.6 dB(A) Leq at Berendo Middle School to 58.4 dB(A) Leq at the corner of 11th and Kenmore. Haul trucks would generate noise off-site from nearly all phases of the construction process. This would include removal of materials from the project site, including the net export of 8,680 cubic yards of cut-and-fill materials, removal of asphalt, base materials, and demolished structures. Depending on the capacity of trucks, this could produce up to 868 haul trips during the peak phase of grading that add incremental traffic volumes to local roads. This addition of up to several truck trips per hour would marginally increase ambient noise along haul route roadways, as truck deployment onto local streets would not happen simultaneously, but rather be phased over the course of the day. There would also be truck-related noise on local streets from the delivery of asphalt, base material, and building construction materials to the site. These would generally not occur simultaneously with the removal of materials, as the phasing process generally wouldn't accommodate concurrent import and export activities. **Mitigation Measure NOI-12** is intended to minimize off-site noise from haul trucks that could increase noise levels in adjacent residential neighborhoods. With implementation of **Mitigation Measure NOI-12**, impacts would be less than significant and no further analysis is needed.

Operations Noise Impacts

During project operations, the development would produce both direct noise impacts on the site from residential and commercial-related activities, as well as indirect noise impacts from vehicles traveling on local roads to access the site. The direct impacts would include stationary noises from sources associated with building operations, such as heating, ventilation, and air conditioning (HVAC) systems.

Section 41.40 and Chapter XI, Articles 1 through 6, of the LAMC requires that noise generated by mechanical equipment not exceed 5 dB(A) above ambient noise levels at adjacent property lines. Large ground level heating, ventilation, and air conditioning (HVAC) systems typically generate noise levels between 50 and 65 dB(A) at 50 feet. Rooftop mounted equipment typically produces noise levels of up to approximately 56 dB(A) at 50 feet. The nearest off-site receptors would be apartments at 1110 Berendo located approximately 60 feet east of the project site. These land uses would experience a 0.6 dB(A) increase in ambient noise. This negligible increase is less than the 5 dB(A) significance threshold for long-term ambient noise increases. Therefore, stationary noise would result in a less than significant impact.

The majority of operational noise impacts would be from indirect noise impacts associated with the 243 net new vehicle trips each day with 81 vehicle trips entering and exiting the project site in the morning peak hour and 24 in the afternoon peak hour.

The impact of this additional traffic on ambient noise levels in the project's vicinity was modeled under existing year (2013) no project scenario, existing year (2013) plus project scenario utilizing the FHWA TNM 2.5 model. As shown in **Table 13, Estimated AM and PM Peak Hour Mobile Source Noise Levels,** the only noise impacts resulting from mobile sources would occur along 11th Avenue between Normandie Avenue and Mariposa Avenue with a 0.3 dB(A) increase in ambient noise during the AM and PM peak hours.

Table 13
Estimated AM and PM Peak Hour Mobile Source Noise Levels

	Estimated dB(A), CNEL			
Roadway Segment	**No Project (2013)**	**With Project (2013)**	**Project Change**	**Significant Impact**
Olympic Blvd. between Catalina St. & Berendo St.	AM 66.3	AM 66.3	AM 0.0	AM No
	PM 66.4	PM 66.4	PM 0.0	PM No
Olympic Blvd. between & Berendo St. &Vermont Ave.	AM 69.8	AM 69.8	AM 0.0	AM No
	PM 69.9	PM 69.9	PM 0.0	PM No
Vermont Ave. between Olympic Blvd. &11th St.	AM 73.2	AM 73.2	AM 0.0	AM No
	PM 72.6	PM 72.6	PM 0.0	PM No
Vermont Ave. between 12th St. & Pico Blvd.	AM 73.2	AM 73.2	AM 0.0	AM No
	PM 73.1	PM 73.1	PM 0.0	PM No
Pico Blvd. between Vermont Ave. & Berendo St.	AM 71.5	AM 71.5	AM 0.0	AM No
	PM 70.9	PM 70.9	PM 0.0	PM No
Normandie Ave. between 11th St.& 12th St.	AM 71.0	AM 71.0	AM 0.0	AM No
	PM 71.5	PM 71.5	PM 0.0	PM No
11th St between Normandie Ave. & Mariposa Ave.	AM 62.3	AM 62.6	AM 0.3	AM No
	PM 64.3	PM 64.6	PM 0.3	PM No

Source: DKA Planning, 2014.

Mobile noise generated by the proposed project would not cause the ambient noise level measured at the property line of the affected uses to be elevated above the LAUSD threshold (67 dB(A) for properties located along 11th St. between Normandie Avenue and Mariposa Avenue. As a result, these inaudible, off-site vehicular noise impacts would be considered a less than significant impact.

Finally, there would be long-term noise impacts from vehicles accessing the project site. This would include vehicles entering the underground garage from 11th Street, a student pick-up/drop-off area from 11th Street, and associated car door slams. The proposed project is to be built on what now includes a surface parking lot that is adjacent to sensitive receptors. Existing car door slams can increase ambient noise levels at the nearest off-site receptor at 1110 Berendo by 0.9 dB(A). Thus the ambient noise level with the proposed project would be 57.8 dB(A), below the LAUSD threshold of 67 dB(A). Further, because the proposed project is removing these parking spaces and placing them in an underground garage that will attenuate some noise, parking noise should decrease at nearby sensitive receptors. Because of this decrease in parking activity at the street level, parking noise would result in a less than significant impact.

Buildings included in the proposed project will meet LAUSD's construction and design standards, including the maximum interior classroom noise level threshold. Impacts would be less than significant. No further analysis is required.

b.) Less than Significant. Groundborne vibration generated by construction activities associated with the proposed project would primarily affect the off-site sensitive uses located in close proximity to the project site. The closest is the multi-family residential buildings to the east across Berendo. As shown in **Table 14**, vibration velocities could range from 0.003 to 0.089 inch/sec peak particle velocity (PPV) at 25 feet from the source activity, with corresponding vibration levels (VdB) ranging from 58 VdB to 87 VdB at 25 feet from the source activity, depending on the type of construction equipment in use. **Table 15, Vibration Levels at Off-Site Sensitive Uses from Project Construction**, shows the vibration velocity and levels that would occur at these off-site sensitive uses during construction at the project site.

The vibration velocities forecasted to occur at the off-site sensitive receptors would be less than 0.024 PPV at the closest receptors on Berendo and 11th Street. While both are non-engineered timber and masonry buildings considered to be "fragile," neither would experience a PPV groundborne vibration level that exceeds 0.2 inch per second. Thus, vibration impacts associated with building damage due to construction activities at the project site would be less than significant and no mitigation measures are required.

Table 14
Vibration Source Levels for Construction Equipment

	Approximate PPV (in/sec)					Approximate RMS (VdB)				
Equipment	**25 Feet**	**50 Feet**	**60 Feet**	**75 Feet**	**100 Feet**	**25 Feet**	**50 Feet**	**60 Feet**	**75 Feet**	**100 Feet**
Large Bulldozer	0.089	0.031	0.024	0.017	0.011	87	78	76	73	69
Caisson Drilling	0.089	0.031	0.024	0.017	0.011	87	78	76	73	69
Loaded Trucks	0.076	0.027	0.020	0.015	0.010	86	77	75	72	68
Jackhammer	0.035	0.012	0.009	0.007	0.004	79	70	68	65	61
Small Bulldozer	0.003	0.001	0.0008	0.0006	0.0004	58	49	47	44	40

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2006

In terms of human annoyance, the vibration levels experienced by the off-site sensitive receptors would range from 54 VdB at 1025 Dewey to 76 VdB. The vibration levels experienced at all off-site sensitive receptors would not exceed the FTA's 80 VdB threshold for residential uses. Therefore, impacts related to construction vibration would be less than significant, and no further analysis is required.

Table 15
Vibration Levels at Off-Site Sensitive Uses from Project Construction

Sensitive Uses Off-Site	Distance to Project Site (ft.)	Estimated PPV (in/sec) a	Estimated Vibration Levels (VdB) b
Multi-family residential at 1100 Berendo	60	0.024	76
Multi-family residential on 11th Street	65	0.021	75
Multi-family residences at 1025 Dewey	320	0.002	54
Multi-family residences at 11th & Kenmore	260	0.003	56

[a] *The vibration velocities at the off-site sensitive uses are determined with the following equation from the Federal Transit Administration's Transit Noise and Vibration Impact Assessment, Final Report:* $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$, *where* PPV_{equip} *= peak particle velocity in in/sec of equipment,* PPV_{ref} *= reference vibration level in in/sec at 25 feet, D = distance from the equipment to the receive.*

[b] *The vibration levels at the off-site sensitive uses are determined with the following equation from the Federal Transit Administration's Transit Noise and Vibration Impact Assessment, Final Report: Lv(D) = Lv(25 ft) – 30 log (D/25), where Lv = vibration level of equipment, D = distance from the equipment to the receiver, Lv(25 ft) = vibration level of equipment at 25 feet.*

Source: DKA Planning, 2014.

Operations Phase Vibration Impacts

During operation of the proposed project, there would not be significant stationary sources of ground-borne vibration, such as heavy equipment operations. Operational ground-borne vibration in the project vicinity would be generated by vehicular travel on the local roadways. Road vehicles rarely create enough groundborne vibration to be perceptible to humans unless the road surface is poorly maintained and there are potholes or bumps. If traffic, typically heavy trucks, induces perceptible vibration in buildings, such as window rattling or shaking of small loose items, then it is most likely an effect of low-frequency airborne noise or ground characteristics. Project-related traffic would expose residential land uses during long-term operations to a vibration and noise level of far less than the FTA's 80 VdB threshold for residential uses and would be considered less than significant, and no further analysis is required.

c) **Less than Significant Impact**. The majority of any long-term noise impacts will come from traffic traveling to and from the area. Off-site noise generated by traffic from the project was modeled under future year (2016) no project and with project conditions utilizing the FHWA TNM 2.5 model. When calculating future noise levels along project area roadways from traffic, additional impacts from 37 additional potential new or proposed projects were considered. Thus, the future traffic results without and with the proposed project account for the cumulative impacts from these other projects. Since the noise impacts are generated directly from the traffic analysis results, the future without project and future with project noise impacts described reflect cumulative impacts.

During project operations, activities associated with the proposed project would result in both direct noise impacts on the project site from residential and commercial-related activities, as well as indirect noise impacts from vehicles accessing the project site. Vehicles accessing the project site would result in the greatest operational noise increase of 0.9 dB(A) and would not exceed LAUSD's threshold of a 3 dB(A) permanent increase.

The proposed project would contribute to future increases in off-site noise levels at project area roadways. The greatest project-related noise increases would be 0.2 dB(A) Leq along 11th Avenue between Normandie and Mariposa during the AM and PM peak hours. These impacts are considered negligible and would be less than the 3 dB(A) significance threshold. Therefore, the project's individual and cumulative mobile source noise impacts would be considered less than significant. No further analysis is required.

d) **Less than Significant Impact With Mitigation Incorporated**. Construction of the project would contribute to cumulative construction noise levels. There are 37 related projects that are proposed for development in the area. Of these, none are within 500 feet of the proposed project with potential to cause audible increases at identified sensitive receptors. All potential projects in the area are more than 1,000 feet away and not likely to influence localized pollutant concentrations at sensitive receptors adjacent to the project site.

Regardless, any construction noise from any future site, were it to occur concurrently with the proposed project, would be attenuated by the distance across intervening streets and/or structures that break the line of sight from this site to the nearby receptors. Additionally, any such projects would be subject to the City's noise ordinance, which limits the hours of allowable construction activities and the extent to which direct noise impacts can affect adjacent land uses. With conformance with the City's noise ordinance and incorporation of **Mitigation Measures NOI-1** through **NOI-13**, the project's cumulative construction noise impact would be considered less than significant.

e) **No Impact.** The project site is not located within an airport land use plan or within 2 miles of a public airport or public use airport. As such, the project would not expose future employees or students to excessive airport-related noise levels. No impacts would occur.

f) **No Impact.** The project site is not in the vicinity of a private airstrip. As a result, the proposed project will not expose future employees or students to excessive noise levels from any private airstrip. No impacts would occur.

Mitigation Measures

The following mitigation measures are required to reduce construction noise impacts to less than significant.

NOI-1 The project shall comply with the City of Los Angeles Building regulations Ordinance No. 178048, which requires a construction site notice to be provided that includes the following information: job site address, permit number, name and phone number of the contractor and owner or owner's agent, hours of construction allowed by code or any discretionary approval for the site, and City telephone numbers where violations can be reported. The notice shall be posted and maintained at the construction site prior to the start of construction and displayed in a location that is readily visible to the public.

NOI-2 Construction and demolition activities shall be scheduled so as to avoid, to the extent feasible, simultaneously operating several pieces of equipment that cause high noise levels.

NOI-3 The use of those pieces of construction equipment or construction methods with the greatest peak noise generation potential shall be minimized. Examples include the use of drills and jackhammers.

NOI-4 Noise and groundborne vibration construction activities whose specific location on the site may be flexible (e.g., operation of compressors and generators, cement mixing, general truck idling) shall be conducted as far as possible from the nearest noise- and vibration-sensitive land uses, and natural and/or manmade barriers (e.g., intervening construction trailers) shall be used to screen propagation of noise from such activities towards these land uses to the maximum extent possible.

NOI-5 Barriers such as plywood structures or flexible sound control curtains shall be erected between the proposed project and homes across Berendo and West 11th Street to minimize the amount of noise during construction. These temporary sound barriers shall be capable of achieving a sound attenuation of at least 13 dB(A) and block the line-of-sight between the project site and these adjacent land uses.

NOI-6 Barriers such as plywood structures or flexible sound control curtains shall be erected between the proposed project and the playgrounds to the south and west of the project site to minimize the amount of noise during all construction phases. These temporary sound barriers shall be capable of achieving a sound attenuation of at least 13 dB(A) and block the line-of-sight between the Project site and these adjacent land uses.

NOI-7 The project contractor shall use power construction equipment with state-of-the-art noise shielding and muffling devices capable of attenuating sound by 3 dB(A) or more.

NOI-8 Demolition of concrete asphalt shall not be done during school hours when children are playing in the adjacent playgrounds south and west of the project site.

NOI-9 All construction truck traffic shall be restricted to truck routes approved by the City of Los Angeles Department of Building and Safety, which shall avoid residential areas and other sensitive receptors to the extent feasible.

NOI-10 The construction staging area shall be as far from sensitive receptors as possible.

NOI-11 Two weeks prior to commencement of construction, notification shall be provided to the off-site residential, school, and church uses within 500 feet of the project site that discloses the construction schedule, including the types of activities and equipment that would be used throughout the duration of the construction period.

NOI-12 Any haul route for trucks disposing of demolished structures or concrete asphalt material shall avoid residential streets to the extent possible.

NOI-13 Grading and construction of the underground garage shall not be done during school hours when children are playing in the adjacent playgrounds south and west of the project site.

As shown in **Table 12**, construction noise levels after mitigation would be reduced at nearby sensitive receptors to less than 75 dB(A) with implementation of **Mitigation Measures NOI-1** through **NOI-13**. Noise increases would be less than the 5 dB(A) threshold of significance that represents a significant audible increase in ambient noise. Construction equipment could produce intermittent audible noise increases at adjacent residential housing; however, these would be temporary and construction noise would be within the noise standards outlined in the City's Municipal Code. Implementation of **Mitigation Measures NOI-1** through **NOI-13** would reduce construction noise impacts to less than significant levels. **Mitigation Measures NOI-5** and **NOI-6** will require the erection of sound barriers that will attenuate construction noise for the off-site homes and the adjacent Berendo Middle School, respectively. A combination of sound barrier construction design, materials, and height will be needed to achieve noise attenuation. For example, every meter of additional height above the line of sight from a noise source to a receiver can attenuate an addition 1.5 dB(A) of noise. Finally, **Mitigation Measure NOI-8** ensures that any construction activities do not expose children playing outside to substantial increases in noise levels.

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. POPULATION AND HOUSING. Would the project:				
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 road 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?	☐	☐	☒	☐

Responses:

a) Less Than Significant Impact. MORCS has been operating on the project site since 2011 and currently serves 339 students. The proposed project would facilitate an addition of 66 students on the project site for a total of 405 students. The increase in students would not be substantial and would not indirectly induce substantial population growth in the area as it is assumed new students would be drawn from the surrounding neighborhood and would not result in new permanent population growth. Therefore, the impact would be less than significant and no further analysis is required.

b-c) No Impact. No housing exists on the project site. Berendo Middle School and MORCS currently operate on the project site. The proposed project would not result in the displacement of existing housing or displace a substantial number of people resulting in the construction of replacement housing elsewhere. No impacts would occur, and no further analysis is necessary.

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES. Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☒	☐

Responses:

a) Less Than Significant Impact. First response for fire and paramedic services to the project site would be provided by the Los Angeles Fire Department (LAFD) Fire Station No. 13 located at 2401 West Pico Boulevard, approximately 0.4 mile south of the project site.

As part of the project review process, the LAFD will review the project and make recommendations for fire protection services and fire flow rates. Depending on the outcome of the review, any require the project applicant. In addition, the proposed project would comply with all applicable state and local codes and ordinances related to fire protection. As such, given compliance with required codes and ordinances, impacts would be less than significant. No further analysis is required.

b) Less Than Significant Impact. Primary law enforcement for future individual school projects would be handled by the Los Angeles School Police Department (LASPD). While law enforcement activities on the LAUSD campuses would be performed by the LASPD, general campus activities would be under the supervision of the principal, vice-principal, teachers, and other campus employees. The Los Angeles Police Department (LAPD) would be the secondary provider of law enforcement services within the area and provides police protection services to the project site. The LAPD is divided into four bureaus — the Central, West, Valley and South bureaus, which are subsequently divided into 23 divisions. The project site is located within the Olympic Area of the West Bureau. The Olympic Area covers 6.2 square miles and is bounded by Melrose Avenue to the north, the Santa Monica Freeway to the south, Hoover Street to the east, and Plymouth Avenue to the west. The project site is served by the Olympic Area Community Police Station located at 1130 South Vermont Avenue, approximately 0.2 mile east of the project site. For resource purposes and statistical analysis, the Olympic Area is further subdivided into reporting districts. The proposed project site falls within the service boundaries of Reporting District (RD) 2056.[53]

The proposed project has been designed as a secure campus, with access to the site controlled by gates and fences. Drivers and pedestrians who are part of the public-at-large would not be permitted to park in the school's underground parking lot or access the school campus. Persons with business on campus would be required to check in with the school's administration at the entry to the campus before being allowed on-site. The school would install electronic security and fire alarm systems.

Similar to fire protection services, public police service needs are generally related to the size of the population and geographic area served, the number and type of calls for service, and other community and physical characteristics. The MORCS is currently operating on the project site with 339 students. The proposed project would increase the student population by 66 students for a total of 405 students. The incremental increase in students on the campus would not be sufficient to result in an increase in demand for police protection services. Further, implementation of the project design features, including lighting and the installation of an electronic security system would ensure that impacts related to police protection services would be less than significant. Therefore, no further analysis is necessary.

c) **No Impact.** The proposed project does not include any residential development and would increase the student capacity at the existing MORCS school. The proposed project would not increase demand on schools and instead would provide relief for overcrowding of schools by increasing the capacity of the existing MORCS school. As such, no impacts would occur. No further analysis is necessary.

d) **Less Than Significant Impact.** The City of Los Angeles Department of Recreation and Parks manages park facilities and provides recreation programs to City residents. The closest park facilities to the project site include the Seoul International Park, located at 3250 San Marino St., Los Angeles, California 90006 and the Normandie Park Recreation Center, located at 1550 S. Normandie Ave., Los Angeles, California 90006. Both park and recreation facilities are less than 1 mile from the project site. The proposed project does not involve any increase in residential units that would result in a permanent population increase that could result in an increase in use of existing parks. However, the proposed project does include a minimal increase in capacity of the MORCS of 66 students. While it is possible that the additional students could use nearby parks such as those described above, the design of the campus includes sufficient

53 Los Angeles Police Department, West Bureau

recreational areas to serve the increased population. As such, it is not expected that the increase in students associated with the proposed project would result in the need for new or expanded recreational facilitates and no further analysis is necessary.

e) Less Than Significant Impact. The Los Angeles Public Library (LAPL) provides library services to the project area. The campus will provide additional educational facilities for its students, which would reduce the potential for impacts to surrounding City libraries. In addition, no residential units are included as part of the proposed project which would result in a permanent increase in population. Therefore, any increase in use of public libraries would be less than significant and no further analysis is necessary.

	Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XV.	**RECREATION. Would the project:**				
a)	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 have an adverse physical effect on the environment?	☐	☐	☒	☐

Responses:

a) **Less Than Significant Impact.** Refer to **Section XIV. Public Services**, above. As discussed above, the proposed project would not result in the addition of any residential uses and would not substantially increase demand on local parks and would include recreational facilities to serve the proposed increase student population. Therefore, impacts to existing neighborhood and regional parks would be less than significant. No further analysis is necessary.

b) **Less Than Significant Impact.** Implementation of the proposed project would result in the removal of four basketball courts, which are currently used by the Berendo Middle School and MORCS students. New recreational facilities will be constructed as part of the proposed project, including a multi-purpose room and large courtyard with landscaping and bench seating. The courtyard will be located in the center of the campus providing students with an area to play and a basketball court will be located in the southwestern corner of the campus. The construction of these recreational facilities is described throughout this Initial Study and has been determined that it would not result in an adverse physical impact. Therefore, impacts would be less than significant, and no further analysis is necessary.

	Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI.	**TRANSPORTATION and TRAFFIC. Would the project:**				
a)	Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
b)	Exceed, either individually or cumulatively, a level of service standard 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 supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☒	☐

A traffic study was prepared for the proposed project by KOA Corporation in May 2014. The analysis is attached to this Initial Study as **Appendix D** and is summarized below.[54]

54 The impacts of an additional 66 students were included in the traffic analysis. As discussed in the Project Description the proposed project would include an additional 105 students. Thus the traffic analysis provides a conservative estimate of future conditions with the buildout of the proposed project and surrounding projects.

Responses:

a) Less Than Significant Impact.

Construction Impacts

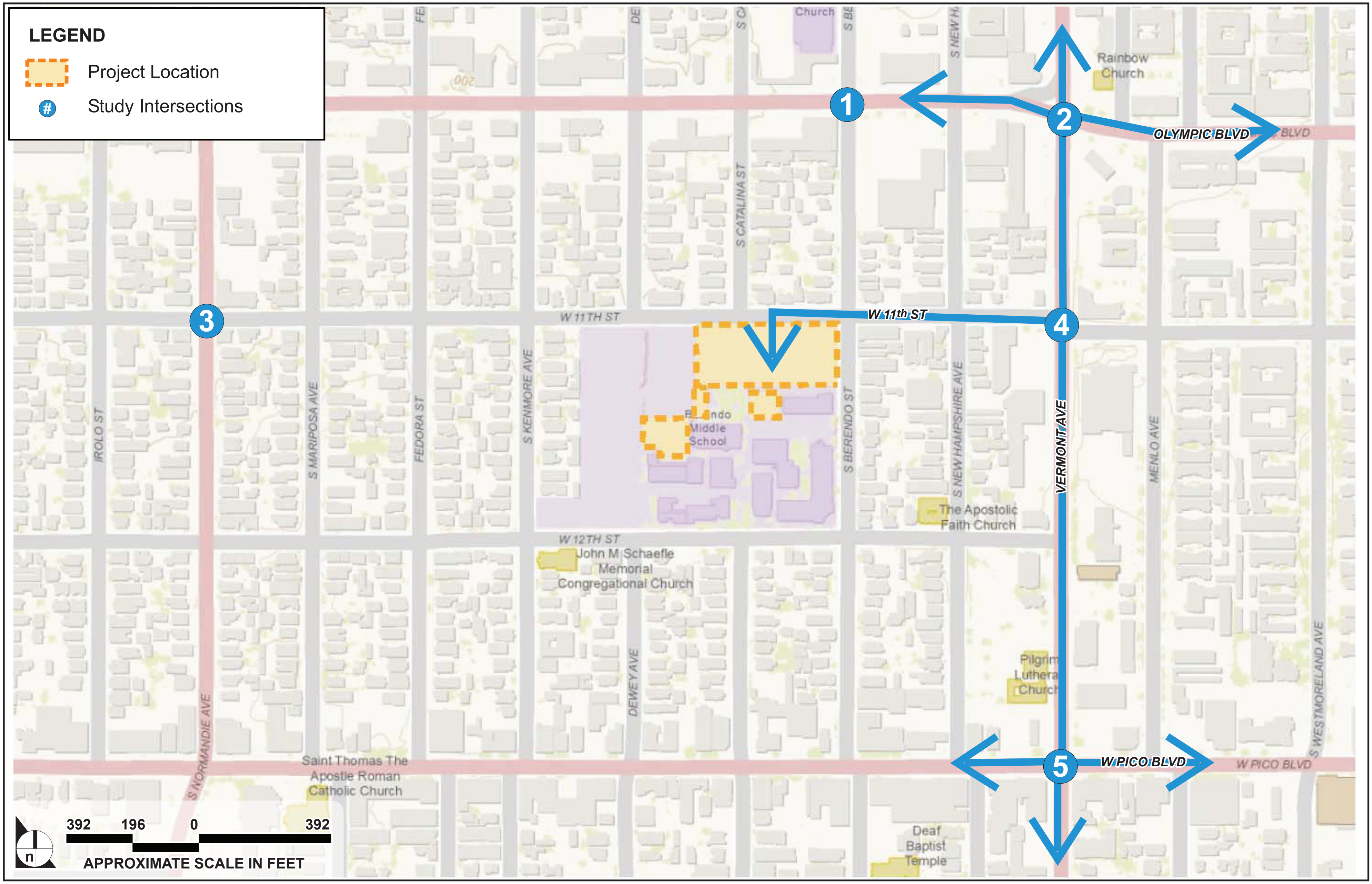
Access to the project site is currently provided via Berendo Street. Project implementation would result in a period of construction activity prior to buildout. **Figure 7, Potential Construction Truck Routes,** identifies which streets would be used by construction trucks to reach the project site. Haul trucks would likely travel to the project site from the US-101 and I-10 freeways via Vermont Avenue. These routes would ensure travel distance in the surrounding residential neighborhoods is minimized and that construction vehicles access the neighborhood at a signalized intersection (Vermont Avenue and 11th Street).

The intersections between Vermont Avenue and the project site are unsignalized. During the construction period, truck operators should be directed by the construction manager to obey residential area speed limits, either as posted or the prima facie speed limit of 25 mph if not posted.

Construction traffic would be restricted to truck routes approved by the City Department of Building and Safety. Construction staging (i.e., storage of equipment and materials) would be contained on the project site. The large pieces of equipment would be delivered to the site at the beginning of each construction stage and removed when they are no longer needed. Likewise, construction materials would be delivered to the project site within a limited timeframe when needed and waste would be removed from the site on an as-needed basis. Delivery trucks would arrive at and depart from the site during off-peak hours. Periodic curb lane closures may occur upon obtaining permits from the City of Los Angeles.

Pedestrian access along the south side of 11th Street, adjacent to the project site may be inaccessible during construction activities, including the removal of construction and demolition waste, as well as equipment deliveries. When construction activities result in the closure of the surrounding sidewalk(s), pedestrian detour signs that guide pedestrians to the nearest accessible sidewalk should be posted at the adjacent intersections in both directions.

In order to minimize potential conflicts between construction activity and traffic, a construction management plan would be developed for use during project construction. Further, a Truck Haul Route program would be submitted to the City for review and approval prior to the issuance of a building permit. Construction vehicles would cause only temporary and intermittent increases in traffic on area roadways, and would not contribute to a significant increase in traffic volumes during the construction phase.



SOURCE: KOA Corporation May 2014 Traffic Impact Study for MORCS

FIGURE 7

Potential Construction Truck Routes

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Operation Impacts

The following five intersections were analyzed to determine if the proposed project would result in a potentially significant traffic impact:

1. Berendo Street & Olympic Boulevard
2. Vermont Avenue & Olympic Boulevard
3. Normandie Avenue & 11th Street
4. Vermont Avenue & 11th Street
5. Vermont Avenue & Pico Boulevard

Existing Conditions

Manual intersection counts (including vehicle classifications, bicycles, and pedestrians) at these five intersections were performed in December of 2013 during the 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM peak periods. New manual intersection turn movement counts were applied to the analysis of existing 2014 traffic conditions at the study intersections.

Based on the existing traffic volumes and the intersection geometries, volume-to-capacity ratios and corresponding levels of service (LOS) were determined for the five study intersections during the weekday AM and PM peak hours.

In accordance with the City of Los Angeles Department of Transportation (LADOT) practices, the Circular 212 Planning methodology was applied to determine the level of service (LOS) for signalized intersections. The concept of roadway level of service under the Circular 212 method is calculated as the volume of vehicles that pass through the facility divided by the capacity of that facility. A facility is "at capacity" (V/C of 1.00 or greater) when extreme congestion occurs. This volume/capacity ratio value is a function of hourly volumes, signal phasing, and approach lane configuration on each leg of the intersection.

LOS values range from LOS A to LOS F. LOS A indicates excellent operating conditions with little delay to motorists, whereas LOS F represents congested conditions with excessive vehicle delay. LOS E is typically defined as the operating "capacity" of a roadway.

LADOT has established specific thresholds for project related increases in the volume-to-capacity ratio (V/C) of signalized study intersections. **Table 16** includes the increases in peak-hour V/C ratios which have been deemed significant according to LADOT.

Table 16
Significant Peak Hour V/C Ratios

Level of Service	Final V/C*	Project Related V/C Increase
C	< 0.70 – 0.80	Equal to or greater than 0.040
D	< 0.80 – 0.90	Equal to or greater than 0.020
E and F	0.90 or more	Equal to or greater than 0.010

Source: Traffic Impact Study for MORCS, prepared by KOA Corporation
*Notes: *Final V/C is the V/C ratio at an intersection, considering impacts from the project, ambient growth trips from area/cumulative projects, but without proposed traffic impact mitigations.*

All of the study intersections are currently operating at good levels of service (LOS D or better) during the weekday AM and PM peak hours. The Vermont Avenue/Olympic Boulevard intersection is the only intersection operating at LOS D during both the weekday AM and PM peak hours.

Project Trip Generation

The number of trips generated by the proposed project was based upon the Institute of Transportation Engineers *Trip Generation Manual, 9th Edition.* Trip rates for middle school facilities (ITE Land Use Code 522) were utilized to calculate the trip generation for the proposed project uses. See **Table 17** for a summary of trip generation factors and distribution. The project would generate a total of 243 weekday daily trips with approximately 81 AM peak hour trips and 24 PM peak hour trips.

Table 17
Project Trip Generation Summary

			Daily	AM Peak			PM Peak		
Land Use	Intensity	Units	Total	Total	In	Out	Total	In	Out
Trip Generation Rates									
Middle School	-	students	1.62	0.54	55%	45%	0.16	49%	51%
Trip Generation Estimates									
Middle School	150*	students	243	81	45	36	24	12	12

Source: Traffic Impact Study for MORCS, prepared by KOA Corporation
*Notes: * The proposed project will include the addition of 105 students, future traffic conditions were projected using 150 students, creating a conservative projection*

Existing Plus Project Scenario

Traffic volumes for the Existing Plus Project conditions were derived by adding the net project trips to the existing traffic volumes. Four of the study intersections are projected to operate at a good level of service (LOS D or better) under Existing Plus Project conditions during the weekday AM and PM peak hours. The Vermont Avenue/Olympic Boulevard intersection is projected to be the only intersection to degrade in operations from LOS D to LOS E with Project traffic, which would occur during the weekday AM peak hour. **Table 18 Intersections LOS Summary – Existing Plus Project,** provides a summary of potential impacts that would occur under the Existing Plus Project condition. As shown, the proposed project would not contribute to an increase in V/C that would exceed the criteria provided in **Table 10**. As such, impacts would be less than significant under the Existing Plus Project condition.

Table 18
Intersections LOS Summary – Existing Plus Project

	Study Intersections	Peak Hour	Existing Conditions (2014) V/C	Existing Conditions (2014) LOS	Existing (2014) Plus Project Conditions V/C	Existing (2014) Plus Project Conditions LOS	Change in V/C	Significant Impact
1	Berendo St./Olympic Blvd.	AM	0.442	A	0.447	A	0.005	No
		PM	0.507	A	0.508	A	0.001	No
2	Vermont Ave./Olympic Blvd.	AM	0.898	D	0.901	E	0.003	No
		PM	0.865	D	0.865	E	0.000	No
3	Normandie Ave./11th St.	AM	0.462	A	0.465	A	0.003	No
		PM	0.617	B	0.619	C	0.002	No
4	Vermont Ave./11th St.	AM	0.593	A	0.600	B	0.007	No
		PM	0.544	A	0.546	B	0.002	No
5	Vermont Ave./Pico Blvd.	AM	0.782	C	0.785	D	0.003	No
		PM	0.724	C	0.725	D	0.001	No

Source: Traffic Impact Study for MORCS, prepared by KOA Corporation

Future Conditions

For the analysis of background traffic for year 2016, a traffic growth factor of 1.0 percent was utilized to provide for increases in traffic from the existing (2014) traffic volumes. To apply this ambient growth rate to the existing traffic volumes, a factor of 1 percent annually was utilized. This factor simulates a 1 percent increase over the one-year period between existing (2014) and future (2016) conditions. Related projects were identified in coordination with LADOT. Project traffic, as identified in **Table 18**, above, was then added to determine Future with Project conditions**. Table 19, Intersection**

Level of Service (LOS) Summary provides a summary of LOS for existing conditions, Future Without Project and Future With Project Scenarios.

Table 19
Intersection Level of Service (LOS) Summary

	Study Intersections	Peak Hour	Existing Conditions (2014) V/C	LOS	Future No Project (2016) V/C	LOS	Future w/ Project (2016) V/C	LOS	Change in V/C	Significant Impact
1	Berendo St./Olympic Blvd.	AM	0.442	A	0.445	A	0.447	A	0.004	No
		PM	0.507	A	0.537	A	0.539	A	0.002	No
2	Vermont Ave./Olympic Blvd.	AM	0.898	D	0.960	E	0.964	E	0.004	No
		PM	0.865	D	0.964	E	0.965	E	0.001	No
3	Normandie Ave./11th St.	AM	0.462	A	0.554	A	0.558	A	0.004	No
		PM	0.617	B	0.750	C	0.752	C	0.002	No
4	Vermont Ave./11th St.	AM	0.593	A	0.609	B	0.621	B	0.012	No
		PM	0.544	A	0.589	A	0.593	A	0.004	No
5	Vermont Ave./Pico Blvd.	AM	0.782	C	0.821	D	0.823	D	0.002	No
		PM	0.724	C	0.805	D	0.805	D	0.000	No

Source: Traffic Impact Study for MORCS, prepared by KOA Corporation

As shown in **Table 19**, under the Future Without Project Condition, with the exception of the Vermont Avenue/Olympic Boulevard intersection, the study intersections are projected to continue to operate at good levels of service (LOS D or better) for the analyzed scenario. The Vermont Avenue/Olympic Boulevard intersection is projected to degrade from LOS D to LOS E in both analyzed peak hours with the addition of ambient growth and trip generation from area projects. Under the Future With Project Condition, with the exception of the Vermont Avenue/Olympic Boulevard intersection, the study intersections are projected to continue to operate at good levels of service (LOS D or better) for this scenario.

Under the Future With Project condition, impacts are determined by comparing the future without-Project conditions to the future with-Project conditions. As shown in **Table 19**, the proposed project would not result in a significant impact at any of the studied intersection under this scenario. Therefore impacts would be less than significant and no further analysis is required.

b) Less Than Significant Impact. The Congestion Management Program (CMP) was created statewide as a result of Proposition 111 and has been implemented locally by the Los Angeles County Metropolitan Transportation Authority (LACMTA). The CMP for Los Angeles County requires that the traffic impact of individual development projects of potential regional significance be analyzed. A specific system of arterial roadways plus all freeways comprise the CMP system. A total of 164 intersections are identified for monitoring on the system in Los Angeles County. The two CMP freeway monitoring stations closest to the project site are located at the intersections of Wilshire Boulevard and Alvarado Street and Wilshire Boulevard and Western Avenue, approximately 1.5 and 1.7 miles northeast and northwest of the project site, respectively.

The following must be included in a traffic impact analysis, at minimum: all CMP-monitoring locations, including monitored freeway on- or off-ramp intersections,[55] where the proposed project would add 50 or more trips during either the AM or PM weekday peak hours; all arterial segments where the proposed project would add 50 or more peak-hour trips, if CMP arterial segments are being analyzed rather than intersections; mainline freeway locations where the proposed project would add 150 or more trips, in either direction, during either the AM or PM weekday peak hours; and any other locations that California Department of Transportation (Caltrans) determines relevant and necessary.

Based on the project trip generation and the distance of this location from the project site, it is not expected that 50 or more new trips per hour would be added at these CMP intersections.[56] Therefore, CMP freeway and arterial intersection analyses are not required and no significant CMP impact is identified. No further analysis is needed.

c) **No Impact.** The uses proposed by the project are not associated with a substantial increase in air traffic. The project is not located within an airport safety zone nor does the project propose any structure that will conflict with air traffic patterns. No impact will occur and no further analysis is needed.

d) **Less Than Significant Impact.** The proposed project would utilize the existing network of regional and local roadways that serve the project area. No major changes to the design or configuration of roadways surrounding the project site are planned. The final design of the proposed project, including curb cuts, ingress, egress, and other streetscape changes, would be subject to review by the Los Angeles Department of Building Public Works and the Department of Transportation and would be required to comply with requirements of those agencies.

The proposed project site access scheme for student drop-off and pick-up operations has been planned to minimize potential vehicular queuing on the local street system, conflict with the existing Berendo Middle School drop-off and pick-up operations, as well as to address safety issues associated with student drop-off and pick-up operations.

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55 There are no freeway CPM monitoring stations in the vicinity of the project site

56 Traffic Impact Study for MORCS, prepared by KOA Corporation, 2014

The following was concluded from a queuing analysis conducted by KOA for the proposed project pick-up/drop-off area:

- The total peak inbound trip demand during the morning peak hour will be 134 vehicles, for the entire charter school operation once constructed and operational.
- Assuming a 25-second average unloading time per vehicle, the service rate of the pick-up/drop-off area would be (60 minutes x 60 seconds or 3600) / 25 seconds), equaling 144 vehicles/hour.
- A queuing analysis of this data indicated that a probable queue would be slightly more than 13 vehicles. A faster loading time for some vehicles would lower this total queue.

The expected average queue, based on project volumes, is expected to not exceed the pick-up/drop-off area storage length under normal and typical conditions.[57] Furthermore, peak access times to the underground parking structure by staff vehicles will occur before student drop-off times and after pick-up times, due to typical staff schedules. Therefore, conflicts are not anticipated between access to the garage and student drop-off/pick-up activity.

As discussed above due to the existing width of 11th street and the surrounding sidewalks it is not feasible to provide a separate curbed vehicle lane to be used for the student drop-off and pick-up area. In lieu of a separated vehicular lane, the applicant will request that LADOT modifies the parking signage and curb color designation on West 11th Street. In addition, the school shall implement a Safety Valet Program (as discussed above) during pick-up and drop-off times.

The project driveway for the underground parking structure would be on 11th Street. The driveway has open areas at the approach to 11th Street where sight lines down each sidewalk are provided, in order to prevent potential for hazardous pedestrian safety conditions. Parabolic mirrors at the entrance to the underground parking structure shall be installed if feasible for better visibility of approaching pedestrians, as well as the consideration of warning light system. With incorporation of these design features, related impacts would be reduced to less than significant.

The Dewey Avenue/11th Street and Berendo Street/11th Street intersections are unsignalized, all-way stop control intersections. All-way stop control provides for safe crossing points for pedestrians. **Figure 8, Pedestrian Routes for Berendo Middle School,** shows the City-generated pedestrian routes for Berendo Middle School**.**

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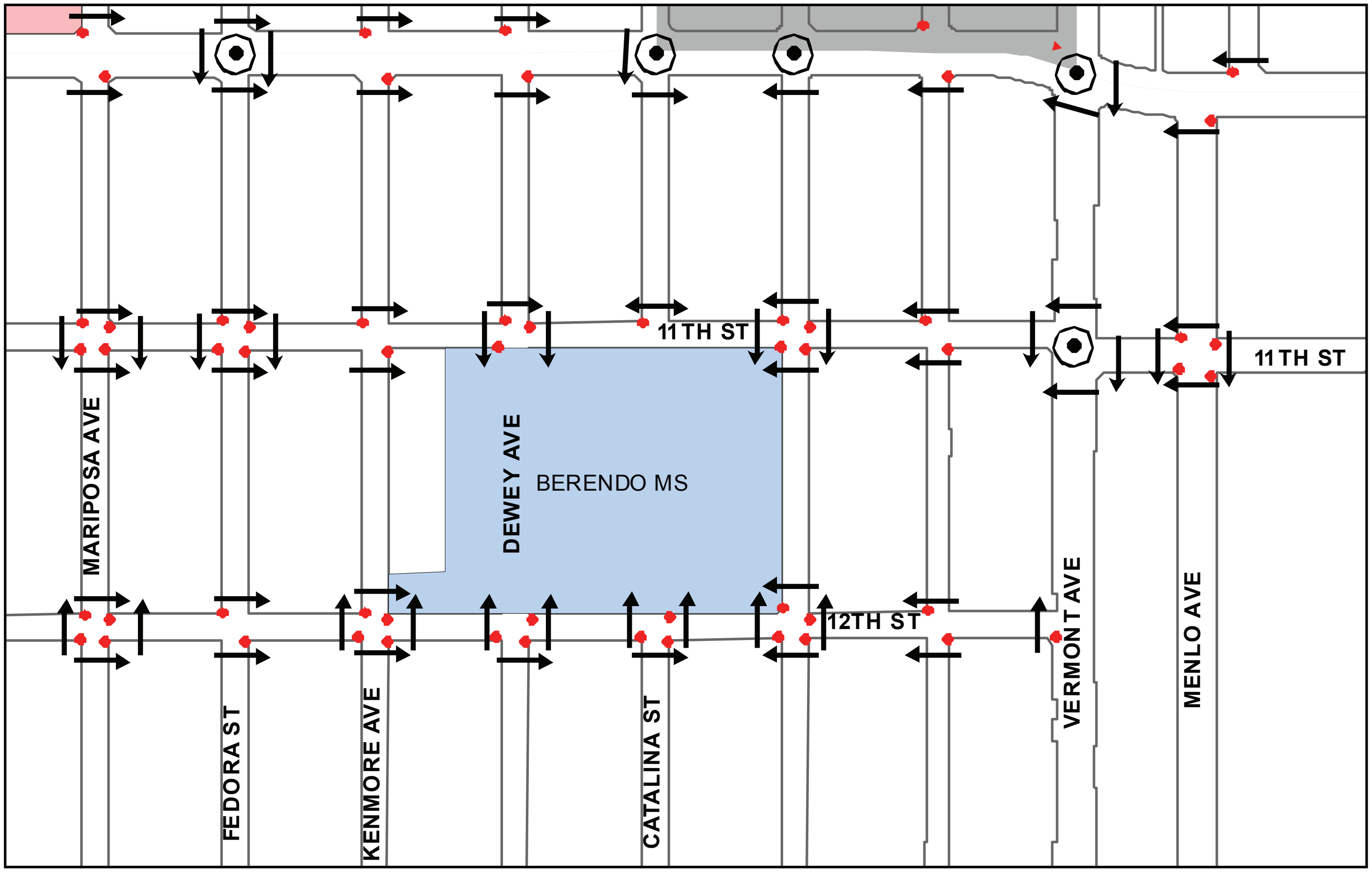
57 As described above the pick-up/drop-off area will be approximately 250 feet long and extend from the end of the red curb at the intersection of Berendo Street and 11th Street to the western end of the project site, terminating before the entrance to the underground parking garage.



Legend

- Recommended Crossing
- Stop Sign
- Traffic Signal
- Crossing Guard
- Flashing Warning Light
- Stairs or Walkway
- Pedestrian Bridge
- Pedestrian Tunnel
- Parks

N W E S

0 250 500
Feet

Parents:
This map shows the recommended crossings to be used from each block in your school attendance area. Following the arrows, select the best route from your home to the school and mark it with a colored pencil or crayon. This is the route your child should take. Instruct your child to use this route and to cross streets only at locations shown. You and your child should become familiar with the route by walking it together. Obey marked crosswalks, stop signs, traffic signals and other traffic controls. Crossing points have been located at these controls wherever possible, even though a longer walk may be necessary. Instruct your child to always look both ways before crossing the street. If no sidewalk exists, your child should walk facing traffic.

Estimados Padres:
Este mapa muestra los cruzados recomendados para los peatones de cada cuadra en la area de su escuela. Siguiendo las flechas en el mapa, selecione la ruta mas segura de su casa a la Escuela y marquelo con un lapis o tiza de color. Esta es la ruta que su hijo (a) debe de usar. Digale a su hijo (a) que use esta ruta y que cruce las calles solamente en los lugares indicados. Usted y su hijo (a) deberian de familiarizarce con esta ruta. Obedezcan los rotulos de peatones, de altos, semaforos y todos los señales de trafico. Puntos para cruzar estan localizados en areas controladas, aunque sea necesario de alargar el tiempo para cruzar. Instruye a su hijo (a) que siempre se fije de los dos lados antes de cruzar la calle. El estudiante debe de siempre caminar en la direccion opuesta del trafico si no existe una banqueta.

SOURCE: City of Los Angeles Department of Transportation and LAUSD OEHS, July 2013

FIGURE 8

Pedestrian Routes for Berendo Middle School

To accommodate the MORCS parking garage entrance on 11th Street, students attending Berendo Middle School and MORCS will be encouraged to walk on the north side of 11th Street and cross at Berendo Street as oppose to crossing at Kenmore Avenue or Dewey Avenue. This will ensure limited (if any) interaction between students walking to either school and faculty and administrative staff entering/exiting the parking garage. Thus impacts related to pedestrian safety would be less than significant.

The project will therefore not create new hazards due to design features or incompatible uses. Impacts would be less than significant and no additional analysis would be required.

e) **Less Than Significant Impact.** The project is not anticipated to interfere with an emergency response plan or evacuation plan. The proposed project would be developed in consultation with the Fire Department and will comply with all applicable access standards during construction and operation. Therefore, the impact would be less than significant and no further study is required.

Construction of the proposed project could result in temporary partial obstruction of adjacent roadways. As construction activities would be temporary and the applicant would comply with applicable LAFD, LAPD, Department of Public Works, and Department of Building and Safety regulations relating to access, impacts would be less than significant and no further analysis is required.

f) **Less Than Significant Impact.** The County of Los Angeles Metropolitan Transit Authority (Metro) Red Line Vermont/Beverly station and the Metro Red and Purple Lines Wilshire/Vermont station are located within approximately 2.0 miles and 1 mile north of the project site, respectively. Multiple bus lines, including local and rapid bus lines run along Vermont Avenue, Pico Boulevard, and Olympic Boulevard provide access and transfer opportunities to the surrounding neighborhoods. These routes could be used by school employees, visitors, and students. Construction and operation of the proposed project would not interfere with bus stops, bicycle facilities, or other alternative transportation. The proposed project will include bicycle racks located on the project site to encourage use of bicycles for transportation to and from the site. Therefore, the proposed project would encourage travel by alternative modes of transportation and would not conflict with the policies supporting alternative transportation or with existing transit routes. For these reasons, impacts related to alternative transportation would be less than significant, and no further analysis is necessary.

	Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII.	**UTILITIES AND SERVICE SYSTEMS. Would the project:**				
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 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? In making this determination, the City shall consider whether the project is subject to the water supply assessment requirements of Water Code Section 10910, et. seq. (SB 610), and the requirements of Government Code Section 664737 (SB 221).	☐	☐	☒	☐
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 sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g)	Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Responses:

a) Less Than Significant Impact. Wastewater from the City of Los Angeles is treated at the Hyperion Treatment Plan (HTP) in Playa del Rey. The wastewater treatment facility has been designed to treat typical wastewater effluent generated by educational uses. The LARWQCB regulates the treatment of wastewater at treatment plants and the discharge of the treated wastewater into receiving waters. The HTP is responsible for adhering to LARWQCB regulations as they apply to wastewater generated by the proposed project.

The wastewater treatment facility receives approximately 362 million gallons of wastewater per day (mgd), and maintains a 450 mgd design capacity.[58] The proposed project would generate wastewater effluent typical of educational uses. Therefore, the proposed project would not generate wastewater that would exceed the wastewater treatment requirements of the LARWQCB. The anticipated impact would be less than significant and no further study is needed.

b) Less Than Significant Impact.

Water

The City of Los Angeles Department of Water and Power (LADWP) provides water service to the project site. Water is conveyed to users in the project area along several circulating water mains of varying sizes. The applicant will be required to install a dedicated above ground reduced pressure principle assembly (backflow preventer)[59] and an underground detector check in vault at Berendo Street, as well as a 3-inch water meter. The applicant will be responsible for any modifications to the existing on-site water lines as necessary.

Implementation of the proposed project would result in an incremental increase to water demand at the project site as capacity would increase from 339 students to 405 students. One of the three existing water mains, including a 6-inch water main located along Berendo Street, a 6-inch water main located along 12th Street, or a 8-inch water main located along 11th Street would serve the proposed project for both domestic and fire service.[60] Water supply lines in the vicinity of the project site are sufficient to supply the anticipated water needs of the proposed project. Further, the LADWP can generally

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58 City of Los Angeles, LA Bureau of Sanitation, Wastewater Facts and Figures, http://lacitysan.org/wastewater/factsfigures.htm, April 23, 2014

59 LAUSD requires that new schools have dual domestic water backflow preventers so that maintenance can be performed on the backflow preventers without shutting down the schools water system.

60 LADWP, Business Arrangement Group of Water Distribution Engineering Services, verbal communication with Kathy Liaskowsky, April 8, 2014

supply water to development projects within its service area, except under extraordinary circumstances.

The LADWP has an ongoing program of facility replacement and upgrades to meet the anticipated water demands based upon the City's adopted General Plan Framework. The proposed project would modify the existing on-site water lines as necessary and would connect to existing lines described above. The project plans would be reviewed by the LADWP to determine if any additional infrastructure is needed on- or off-site. As discussed above, the project applicant would comply with all applicable LADWP regulations. Therefore, the project's impacts to the existing water distribution system would be less than significant and no further analysis is needed.

Wastewater

The City of Los Angeles Department of Public Works provides sewer service to the project site. An existing underground 8-inch sewer line runs from the southern to the northern portion of the existing middle school campus until reaching a main a sewer main at 11th Street. As the 8-inch local line runs directly in line with the proposed underground parking garage, a portion of the sewer line will need to be relocated to the west side of the parking garage. Installation of four sewer manholes and over 200 feet of 8-inch cast iron sewer pipe will also be installed, as well as 500 feet of new cast iron sewer pipe to accommodate the proposed project, including the parking garage. The applicant will be responsible for all costs associated with the installation of the proposed sewer lines.61

No new sewer connections into 11th Street or Berendo Street are anticipated, however to handle increased wastewater flow, some lines may need to be replaced with lines of greater capacity, or additional lines may need to be installed. Major wastewater facility upgrades are based on the City's General Plan Framework and SCAG regional projections. Therefore, any potential increases in wastewater flows from the project site following implementation of the proposed project implementation into local sewer lines and the treatment plant have already been incorporated into future expansion plans.

Implementation of the proposed project will require that the applicant coordinate with the City Department of Public Works regarding design, operation, and maintenance of proposed project components. No new sewer connections are anticipated, however, if new sewer connections are necessary, the applicant would be required to pay sewage connection fees and make any necessary upgrades to the wastewater collection and treatment system to provide relief for existing lines nearing capacity. The proposed project would be required to comply with the City's Water Conservation Ordinance Nos. 165,004, 165,615, 166,080, and subsequent ordinances. Buildout of the proposed project would not require or result in the construction of new wastewater facilities or

61 Monseñor Oscar Romero Charter School, Schematic Design, prepared by gkk works

expansion of existing facilities. Therefore, impacts to the existing wastewater treatment system would be less than significant.

c) Less Than Significant Impact. The storm drainage system in the Los Angeles basin is designed to reduce and prevent possible flooding from storm water on City streets. The existing site drains, via sheet flow, from south to north. Stormwater is impeded by going over the public sidewalk due to the existing retaining walls fronting 11th Street. The water is directed into multiple drain inlets along the retaining wall and continues into an existing underground concrete culvert where it drains into the City's stormwater collection and conveyance system.

Following project buildout, the project site would be covered almost entirely with impervious surfaces, with the exception of landscaped areas. The project would be designed with drainage systems, such as concrete culverts, an underground storm drain system, drain inlets, and roof drain downspouts that would direct storm water flows to the existing and proposed on-site catch basins and then to the municipal storm drains. Storm water drainage plans would be submitted to the City of Los Angeles Department of Public Works for review and approval prior to the development of any drainage improvements. These plans must meet all requirements for the City's municipal separate stormwater sewer system permit, so that no impact to water quality at downstream facilities would occur. In addition, the proposed project would comply with all applicable water quality standards and waste discharge requirements. Consequently, the construction or expansion of new or existing stormwater drainage facilities is not anticipated, and the impact of the proposed project on storm water drainage facilities would be less than significant. No further analysis is required.

d) Less Than Significant Impact. Senate Bill 221 and Senate Bill 610 amended existing California law regarding land use planning and water supply availability by requiring more information and assurance of supply than is currently required in an Urban Water Management Plan (UWMP). As of January 1, 2002, California law requires water retail providers, like the LADWP, to demonstrate that sufficient and reliable supplies are available to serve large-scale developments (i.e., 500 dwelling units or 500,000 square feet of commercial space) prior to completion of the environmental review process and approval of such large-scale projects.

Under SB 610, it is the responsibility of the water service provider to prepare a Water Supply Assessment requested by a City or County for any "project" defined by Section 10912 of the Water Code that is subject to CEQA.

Section 10912 of the Water Code defines a "project" as

- a proposed residential development of more than 500 dwelling units;
- a proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;

- a proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- a proposed hotel or motel, or both, having more than 500 rooms;
- a proposed industrial, manufacturing or processing plant, or industrial park, planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor space;
- a proposed mixed-use project that includes one or more of the previously listed projects; or
- a proposed project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling-unit project.

The proposed project would not meet any of the criteria resulting in the need for a water supply assessment; therefore, no Water Supply Assessment is needed.

The California Urban Management Planning Act requires every municipal water supplier who serves more than 3,000 customers or provides more than 3,000 acre-feet per year (afy) of water to prepare an Urban Water Management Plan (UWMP). The 2010 UWMP prepared by LADWP includes estimates of past, current, and projected probable and recycled water use, identifies conservation and reclamation measures currently in practice, describes alternative conservation measures, and provides an urban water shortage contingency plan. According to LADWP, there are adequate supplies available to serve City needs through 2035.[62]

Buildout of the proposed project would create an increase in demand for water supplies compared to existing uses on the project site. Based on the City of Los Angeles CEQA Thresholds Guide wastewater generation factor for education uses of 8 gallons per student per day,[63] the proposed project would result in the increase of 66 students on the site. This increase would result in an additional daily water demand of 528 (8 * 66) gallons and an annual demand of 192,720 gallons. As stated in the CEQA Thresholds Guide, wastewater generation is assumed to be 100 percent of water consumption for a given land use. This is a conservative estimate of the additional water demand that would be generated by the proposed project, as the proposed project would not generate peak water or wastewater demand 365 days a year, as demand would only be generated while school is in session. This increase in demand is not substantial and is not expected to significantly affect water supply.

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62 City of Los Angeles Department of Water and Power, 2010 Urban Water Management Plan, Exhibit ES-R

63 City of Los Angeles *CEQA Thresholds Guide*, Sewage Generation Factors, Exhibit M.2-12

The proposed project would comply with the following state laws requiring water-efficient plumbing fixtures and structures:

- California Health and Safety Code Section 17921.3, Installation of low-flush toilets and urinals.
- Title 20, California Administrative Code Section 1604(f) (Appliance Efficiency Standards) Compliance with efficiency standards for the maximum flow rate of all new showerhead, lavatory faucets, and sink faucets.
- Title 24, California Administrative Code Section 2-5307(b). California Energy Conservation Standards for New Buildings Installation only of fixtures certified to comply with the CEC flow rate standards.
- Title 24, California Administrative Code Section 2-5352 (i) and (f) Compliance with requirements for the installation of pipe that can reduce water used before hot water reaches equipment or fixtures. These requirements apply to steam and steam-condensate return piping and recirculating hot water piping in unheated spaces other than between floors or in interior walls. Insulation of water-heating systems is also required.

Thus, sufficient water supplies are expected to be available to serve the proposed project from existing entitlements and resources. For the reasons discussed above, implementation of the proposed project would have a less than significant impact associated with water demand. No further analysis is required.

e) Less Than Significant Impact. The Hyperion Treatment Plant (HTP) has a dry weather design capacity of 450 million gallons per day (mgd) for full secondary treatment.[64] The HTP is currently processing 362 million gallons per day, which is 88 mgd below capacity. As discussed above, the proposed project would generate a projected 528 gallons of wastewater per day, based on the assumption that wastewater equals 100 percent of water demand for a given land use. Because the HTP operates at 88 mgd under capacity, the additional 528 gallons per day of effluent generated by the proposed project could be accommodated without physical improvements or upgrades to the system capacity or its operation. This minimal increase in students is not expected to significantly impact the HTP. Therefore, impacts would be less than significant and no further analysis is required.

f) Less Than Significant Impact. In 1989, the State of California passed the California Integrated Waste Management Act (CIWMA) in response to reduced landfill capacity. This legislation (generally known by the name of the enacting bill AB 939) required cities and counties to reduce the amount of solid wastes entering existing

64 City of Los Angeles, LA Bureau of Sanitation, Wastewater Facts and Figures, http://lacitysan.org/wastewater/factsfigures.htm

landfills, through recycling, reuse and waste prevention efforts. AB 939 required every city and county in the state to prepare a Source Reduction and Recycling Element to its Solid Waste Management Plan that identified how each jurisdiction would meet the mandatory state waste diversion goals of 25 percent by the year 1995 and 50 percent by the year 2000. On June 30, 2008, the State Assembly amended Senate Bill 1252 to include further waste diversion goals of 60 percent by the year 2015 and 75 percent by the year 2025.[65] The purpose of AB 939 was to "reduce, recycle, and re-use solid waste generated in the state to the maximum extent feasible." In 2012, the City of Los Angeles diverted approximately 76.4 percent of waste generated within the City from landfills.[66]

Construction of the proposed project would generate minimal amounts of construction and demolition debris. Waste materials generated during construction are expected to be typical construction debris, including concrete, stucco, asphalt, rocks, building materials, wood, paper, glass, plastic, metals, cardboard, and other inert wastes (i.e., wastes that are not likely to produce leachates of environmental concern), as well as green wastes. Much of this debris would be recycled and salvaged to the greatest extent possible. Waste generated during demolition and construction that is not recycled would result in an incremental and intermittent increase in solid waste disposal at landfills and other waste disposal facilities generally within Los Angeles County, including the Sunshine Canyon Landfill. In October of 2012 the Sunshine Landfill had approximately 33 percent remaining capacity.[67] Given the available capacity at the Sunshine Landfill and the number of additional landfills which accept waste from the City, (including Chiquita Canyon Landfill, Simi Valley Landfill and Recycling Center, and Lancaster Landfill and Recycling Center) demolition and construction debris impacts to solid waste facilities would be less than significant. This additional solid waste represents a negligible fraction of the solid waste generated within the region and, therefore, would not significantly impact available landfill capacity. No further analysis is necessary.

Solid waste generated by the proposed project, which is not diverted would be disposed of at a Class III landfill. Solid waste service in the City of Los Angeles is provided by the Department of Public Works Bureau of Sanitation (BOS). A majority of the City's solid waste is disposed of in the Sunshine Canyon Landfill.[68]

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65 CWIMB, *Senate Bill 1252 Amendment*, June 30, 2008.

66 City of Los Angeles, 2013 Zero Waste Progress Report, http://www.forester.net/pdfs/City_of_LA_Zero_Waste_Progress_Report.pdf

67 Cal Recycle, Facility/Site Summary Details, Sunshine Canyon City/County Landfill, http://www.calrecycle.ca.gov/SWFacilities/Directory/19-AA-2000/Detail/

68 City of Los Angeles, 2013 Zero Waste Progress Report, http://www.forester.net/pdfs/City_of_LA_Zero_Waste_Progress_Report.pdf

The increase in student population would result in 63 pounds of refuse per day (66 * 0.6 lb/person/day), or approximately 7.23 tons per year (14,454 lb / 2,000). These quantities do not account for any diverted waste or recycling activities.

Project implementation would include a solid waste diversion program (e.g., adequate areas for collecting and loading recyclables) and would result in the project meeting at least the minimum recycling level established by Los Angeles County in accordance with AB 939. Meeting the City of Los Angeles' 2012 diversion levels (76.4. percent, the most current rate available) would result in the project sending approximately 1.77 tons of waste to local landfills annually. This increase in demand represents a negligible fraction of the solid waste generated within the region and, therefore, would not significantly impact available landfill capacity. No further analysis is necessary.

g) Less Than Significant Impact. During construction and operation of the project, the applicant would comply with all applicable City, County, and State solid waste diversion, reduction, and recycling mandates, including compliance with the City's Source Reduction and Recycling Element (SRRE), the City of Los Angeles Solid Waste Management Policy Plan (CiSWMPP), and the Los Angeles Municipal Code. Compliance with these regulations and mandates would assist in reducing the amount of waste deposited in local landfills. Therefore, impacts related to regulatory compliance would be less than significant, and no further analysis is necessary.

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE				
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, substantially 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 which are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that incremental effects of an individual 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 cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Responses:

a) Less Than Significant Impact with Mitigation Incorporated. As discussed in **Sections I. Aesthetics, IV. Biological Resources** and **V. Cultural Resources**, the project would neither degrade the quality of the environment nor affect any endangered fauna or flora. Because of the highly urbanized nature of the project site and the surrounding area, the project would not impact the habitat or population level of fish or wildlife species, nor would it threaten a plant or animal community, nor impact the range of a rare or endangered plant or animal. Potential impacts related to archaeological and paleontological resources would be reduced to less than significant levels with implementation of the required mitigation measures, and impacts related to historic resources would be less than significant.

b) Less Than Significant Impact with Mitigation Incorporated. Based on the preceding discussion in **Sections III Air Quality, XII Noise, and XVI Traffic**, with implementation of the required mitigation measures, the proposed project would not result in any unmitigated significant adverse impacts which could contribute to a cumulatively considerable impact.

c) Less Than Significant Impact with Mitigation Incorporated. As discussed in the above analyses in **Sections III Air Quality, VI Geology and Soils, VIII Hazards and Hazardous Materials,** and **XIV Public Services**, for the project, with implementation of the required mitigation measures, the proposed project would not result in any unmitigated significant adverse impacts. Thus, the project would not have the potential to result in substantial adverse effect on human beings.

MITIGATION MEASURES

Aesthetics

(*Required to reduce potential impacts to a less than significant level*.)

AES-1 Outdoor lighting shall be designed and installed with downcast shielding to reduce light impacts on adjacent properties. YPI/PCSD shall reduce the lighting intensity from the proposed project on adjacent residences to no more than 2 foot-candles, measured at the residential property line. To achieve this result, YPI/PCSD may use hoods, filtering louvers, glare shields, and/or landscaping as may be necessary to achieve the standard. Lamp enclosure and poles shall also be painted to reduce reflection.

AES-2 YPI/PCSD shall utilize non-reflective building materials in the construction of the proposed project.

Cultural Resources (Archaeological and Paleontological Resources)

(*Require adherence to existing regulations.*)

CR-1: In the event that archaeological resources are uncovered on the project site during grading or other construction activities, the construction contractor will notify the project applicant (YPI/PCSD) and LAUSD's Office of Environmental Health and Safety (OEHS) immediately and work must stop within a 100-foot radius until a qualified archeologist has evaluated the find. Construction activity may continue unimpeded on other portions of the project site. If the find is determined by the qualified archeologist to be a unique archeological resource, as defined by Section 2103.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of Section 21083.2 of the Public Resources Code. If the find is determined not to be a unique archeological resource, no further action is necessary and construction may continue.

CR-2: If paleontological resources are uncovered during excavation of the project site, the construction contractor will notify YPI/PCSD, LAUSD's OEHS, and the Natural History Museum of Los Angeles County Vertebrate Paleontology Section immediately and work must stop within 100 feet of the find to allow a qualified paleontologist to appropriately remove the find.

CR-3 If during excavation of the project site human remains are discovered, the construction contractor will notify LAUSD's OEHS immediately and the steps described in *State CEQA Guidelines* Section 15064.5(e) shall be followed.

(1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

(A) The coroner of the County in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and

(B) If the coroner determines the remains to be Native American:

1. The coroner shall contact the Native American Heritage Commission within 24 hours.

2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.

3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or

(2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance. The applicant shall bear the cost of implementing this mitigation.

(A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.

(B) The descendant identified fails to make a recommendation; or

(C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

Geology and Soils

(*Require adherence to existing regulations*.)

GEO-1 The project shall be designed and constructed in accordance with the requirements of Chapter 16 (Structural Design) of the 2013 California Code of

Regulations, Title 24, Part 2, Volume 2 (based on the International Building Code, Chapter 16, Section 1613 – Earthquake Loads), and accepted engineering practices.

GEO-2 Prior to start of soil-disturbing activities at the site, the project applicant shall obtain a General Permit for Discharges of Storm Water Associated with Construction Activity to comply with the National Pollution Discharge Elimination System (NPDES), to control erosion and pollution during construction of the project. The project applicant shall prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to be administered throughout project construction. The SWPPP must list Best Management Practice (BMP) features that the discharger (project applicant) will use to protect storm water runoff.

GEO-3 All unpaved demolition and construction areas shall be wetted during excavation, grading, and construction, and temporary dust covers shall be used to reduce dust emissions and meet South Coast Air Quality Management District Rule 403.

GEO-4 The project applicant or general contractor shall keep the construction area sufficiently damped to control dust caused by construction, hauling and at all times provide reasonable control of dust caused by wind.

GEO-5 All materials transported off-site shall either be sufficiently watered or securely covered to prevent excessive amounts of dust and spillage. Management of excavated soils are subject to oversight by OEHS; all testing shall be conducted in compliance with District Specification 01 4524.

GEO-6 All clearing, earthmoving, or excavation activities shall be suspended during period of high winds (i.e., greater than 25 miles per hour over a 30-minute period), so as to prevent excessive amounts of fugitive dust.

GEO-7 All earthwork and grading, structural foundations, on grade slabs, retaining walls, paving, temporary excavations and backfill, and surface drainage shall be designed and constructed consistent with the recommendations provided in the *Geoseismic/Geotechnical Study Report* prepared by Converse Consultants, August 2013. Specifically, design shall adhere to the recommendations in Section 8.0 Site Grading and Earthwork Recommendations.

GEO-8 The following procedures shall be followed if expansive soils are encountered on the project site:

- Pre-saturation of on-site compacted subgrade soils to an approximate 3 percent above optimum moisture content

- Removal of approximately 1 foot of underlying soils to be replaced with imported sandy material compact fill (with an Expansion Index of less than 20)
- All footing shall be reinforced and all concrete slabs shall include a moisture barrier

Hazards and Hazardous Materials

(*Require adherence to existing regulations*.)

HAZ-1 Asbestos and lead-based paint surveys shall be conducted on the buildings to be demolished prior to the start of construction. In the event that asbestos and lead-based paint are detected, they shall be abated in accordance with all applicable rules and regulations. Abatement activities shall be completed to the satisfaction of the appropriate regulatory agency(ies) prior to issuance of demolition permits for the proposed project. Abatement of asbestos shall be conducted in accordance with SCAQMD Rule 1403, Asbestos Emissions from Demolition/Renovation Activities.

Hydrology and Water Quality

(*Require adherence to existing regulations*.)

HYD-1 All construction waste shall be disposed properly. Use appropriately labeled recycling bins to recycle construction materials including: solvents, water-based paints, vehicle fluids, broken asphalt and concrete, wood, and vegetation. Nonrecyclable materials/wastes shall be taken to an appropriate landfill. Toxic wastes must be discarded at a licensed regulated disposal site.

HYD-2 During construction, leaks, drips, and spills shall be cleaned up immediately to prevent contaminated soil on paved surfaces that can be washed away into the storm drain.

HYD-3 During construction, where truck traffic is frequent, gravel approaches shall be used to reduce soil compaction and limit the tracking of sediment into streets.

HYD-4 All construction vehicle/equipment maintenance, repair, and washing shall be conducted away from storm drains. All major repairs shall be conducted off-site. Drip pans or drop cloths shall be used to catch drips and spills.

HYD-5 During construction, appropriate erosion control and drainage devices shall be incorporated such as interceptor terraces, berms, vee-channels, and inlet and outlet structures.

HYD-6 Following construction and during operation of the project, post development peak stormwater runoff discharge rates shall not exceed the estimated pre-development rate for developments where the increase peak stormwater discharge rate will result in increased potential for downstream erosion.

Noise

NOI-1 The project shall comply with the City of Los Angeles Building Regulations Ordinance No. 178048, which requires a construction site notice to be provided that includes the following information: job site address, permit number, name and phone number of the contractor and owner or owner's agent, hours of construction allowed by code or any discretionary approval for the site, and City telephone numbers where violations can be reported. The notice shall be posted and maintained at the construction site prior to the start of construction and displayed in a location that is readily visible to the public.

NOI-2 Construction and demolition activities shall be scheduled so as to avoid, to the extent feasible, simultaneously operating several pieces of equipment that cause high noise levels.

NOI-3 The use of those pieces of construction equipment or construction methods with the greatest peak noise generation potential shall be minimized. Examples include the use of drills, jackhammers, and pile drivers.

NOI-4 Noise and groundborne vibration construction activities whose specific location on the site may be flexible (e.g., operation of compressors and generators, cement mixing, general truck idling) shall be conducted as far as possible from the nearest noise- and vibration-sensitive land uses, and natural and/or manmade barriers (e.g., intervening construction trailers) shall be used to screen propagation of noise from such activities towards these land uses to the maximum extent possible.

NOI-5 Barriers such as plywood structures or flexible sound control curtains shall be erected between the proposed project and homes across Berendo and West 11th Street to minimize the amount of noise during construction. These temporary sound barriers shall be capable of achieving a sound attenuation of at least 13 dB(A) and block the line-of-sight between the project site and these adjacent land uses.

NOI-6 Barriers such as plywood structures or flexible sound control curtains shall be erected between the proposed project and the playgrounds to the south and west of the project site to minimize the amount of noise during all construction phases. These temporary sound barriers shall be capable of achieving a sound attenuation of at least 13 dB(A) and block the line-of-sight between the Project site and these adjacent land uses.

NOI-7 The project contractor shall use power construction equipment with state-of-the-art noise shielding and muffling devices capable of attenuating sound by 3 dB(A) or more.

NOI-8 Demolition of concrete asphalt shall not be done during school hours when children are playing in the adjacent playgrounds south and west of the project site.

NOI-9 All construction truck traffic shall be restricted to truck routes approved by the City of Los Angeles Department of Building and Safety, which shall avoid residential areas and other sensitive receptors to the extent feasible.

NOI-10 The construction staging area shall be as far from sensitive receptors as possible.

NOI-11 Two weeks prior to commencement of construction, notification shall be provided to the off-site residential, school, and church uses within 500 feet of the project site that discloses the construction schedule, including the types of activities and equipment that would be used throughout the duration of the construction period.

NOI-12 Any haul route for trucks disposing of demolished structures or concrete asphalt material shall avoid residential streets to the extent possible.

NOI-13 Grading and construction of the underground garage shall not be done during school hours when children are playing in the adjacent playgrounds south and west of the project site.

APPENDIX A

Air Quality Calculations

Summer Emissions Calculations

MORCS Charter School

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior High School	66.00	Student	1.84	34,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2017
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project is 3 buildings totalling 34,000 sqft on a 1.84 acre site. Allows the addition of 66 students to an existing school.

Construction Phase - Demo: 7/1/15-7/31/15
Grading: 8/1/15-8/30/15
Const: 9/1/15-11/1/16
Paving: 9/1/15-11/1/15
Coating: 10/1/16-11/1/16

Demolition - 4,000 sqft of structures demolished.

Grading - 8,700 cy of material removed.

Construction Off-road Equipment Mitigation - Assume area is watered 3x per day per SCAQMD guidelines.

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	200.00	306.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	4.00	20.00
tblConstructionPhase	NumDays	10.00	44.00
tblConstructionPhase	PhaseEndDate	12/1/2015	11/1/2016
tblConstructionPhase	PhaseEndDate	10/31/2016	11/1/2016
tblConstructionPhase	PhaseEndDate	8/28/2015	8/30/2015
tblConstructionPhase	PhaseEndDate	1/2/2017	11/1/2015
tblConstructionPhase	PhaseStartDate	11/2/2015	10/1/2016
tblConstructionPhase	PhaseStartDate	8/31/2015	9/1/2015
tblConstructionPhase	PhaseStartDate	11/2/2016	9/1/2015
tblGrading	AcresOfGrading	7.50	1.50
tblGrading	MaterialExported	0.00	8,700.00
tblLandUse	LandUseSquareFeet	7,759.07	34,000.00
tblLandUse	LotAcreage	0.18	1.84
tblProjectCharacteristics	OperationalYear	2014	2017

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					
2015	5.1856	38.9082	26.7613	0.0554	5.6824	2.3899	7.1749	2.7819	2.2677	4.1549	0.0000	5,666.8761	5,666.8761	0.8984	0.0000	5,685.7428
2016	39.5969	23.5251	18.2939	0.0286	0.2275	1.5724	1.7999	0.0611	1.5235	1.5846	0.0000	2,661.4166	2,661.4166	0.4944	0.0000	2,671.7989
Total	**44.7824**	**62.4332**	**45.0552**	**0.0840**	**5.9100**	**3.9623**	**8.9748**	**2.8430**	**3.7912**	**5.7395**	**0.0000**	**8,328.2927**	**8,328.2927**	**1.3928**	**0.0000**	**8,357.5417**

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					
2015	5.1856	38.9082	26.7613	0.0554	2.8488	2.3899	4.3413	1.2577	2.2677	2.6307	0.0000	5,666.8761	5,666.8761	0.8984	0.0000	5,685.7428
2016	39.5969	23.5251	18.2939	0.0286	0.2275	1.5724	1.7999	0.0611	1.5235	1.5846	0.0000	2,661.4166	2,661.4166	0.4944	0.0000	2,671.7989
Total	**44.7824**	**62.4332**	**45.0552**	**0.0840**	**3.0763**	**3.9623**	**6.1411**	**1.3188**	**3.7912**	**4.2153**	**0.0000**	**8,328.2927**	**8,328.2927**	**1.3928**	**0.0000**	**8,357.5417**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**47.95**	**0.00**	**31.57**	**53.61**	**0.00**	**26.56**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8897	7.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0144	0.0144	4.0000e-005		0.0153
Energy	0.0109	0.0995	0.0835	6.0000e-004		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003		119.3425	119.3425	2.2900e-003	2.1900e-003	120.0688
Mobile	0.3867	1.1626	4.6873	0.0122	0.8181	0.0172	0.8353	0.2186	0.0158	0.2344		1,040.2764	1,040.2764	0.0391		1,041.0964
Total	**1.2874**	**1.2621**	**4.7777**	**0.0128**	**0.8181**	**0.0248**	**0.8429**	**0.2186**	**0.0234**	**0.2420**		**1,159.6333**	**1,159.6333**	**0.0414**	**2.1900e-003**	**1,161.1804**

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	0.8897	7.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0144	0.0144	4.0000e-005		0.0153
Energy	0.0109	0.0995	0.0835	6.0000e-004		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003		119.3425	119.3425	2.2900e-003	2.1900e-003	120.0688
Mobile	0.3867	1.1626	4.6873	0.0122	0.8181	0.0172	0.8353	0.2186	0.0158	0.2344		1,040.2764	1,040.2764	0.0391		1,041.0964
Total	**1.2874**	**1.2621**	**4.7777**	**0.0128**	**0.8181**	**0.0248**	**0.8429**	**0.2186**	**0.0234**	**0.2420**		**1,159.6333**	**1,159.6333**	**0.0414**	**2.1900e-003**	**1,161.1804**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2015	7/31/2015	5	23	
2	Grading	Grading	8/1/2015	8/30/2015	5	20	
3	Building Construction	Building Construction	9/1/2015	11/1/2016	5	306	
4	Paving	Paving	9/1/2015	11/1/2015	5	44	
5	Architectural Coating	Architectural Coating	10/1/2016	11/1/2016	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 51,000; Non-Residential Outdoor: 17,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	6.00	174	0.41
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	18.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	1,088.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	14.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1712	0.0000	0.1712	0.0259	0.0000	0.0259			0.0000			0.0000
Off-Road	3.0666	29.6778	22.0566	0.0245		1.8651	1.8651		1.7469	1.7469		2,509.059 9	2,509.059 9	0.6357		2,522.410 4
Total	**3.0666**	**29.6778**	**22.0566**	**0.0245**	**0.1712**	**1.8651**	**2.0363**	**0.0259**	**1.7469**	**1.7729**		**2,509.059 9**	**2,509.059 9**	**0.6357**		**2,522.410 4**

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	0.0152	0.2434	0.1640	5.8000e-004	0.0136	4.2400e-003	0.0179	3.7300e-003	3.9000e-003	7.6400e-003		58.8183	58.8183	4.6000e-004		58.8280
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0753	0.9333	1.8400e-003	0.1453	1.2800e-003	0.1466	0.0385	1.1700e-003	0.0397		160.1468	160.1468	8.6200e-003		160.3279
Total	**0.0753**	**0.3187**	**1.0973**	**2.4200e-003**	**0.1589**	**5.5200e-003**	**0.1645**	**0.0423**	**5.0700e-003**	**0.0474**		**218.9651**	**218.9651**	**9.0800e-003**		**219.1559**

3.2 Demolition - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0668	0.0000	0.0668	0.0101	0.0000	0.0101			0.0000			0.0000
Off-Road	3.0666	29.6778	22.0566	0.0245		1.8651	1.8651		1.7469	1.7469	0.0000	2,509.059 9	2,509.059 9	0.6357		2,522.410 4
Total	**3.0666**	**29.6778**	**22.0566**	**0.0245**	**0.0668**	**1.8651**	**1.9319**	**0.0101**	**1.7469**	**1.7570**	**0.0000**	**2,509.059 9**	**2,509.059 9**	**0.6357**		**2,522.410 4**

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	0.0152	0.2434	0.1640	5.8000e-004	0.0136	4.2400e-003	0.0179	3.7300e-003	3.9000e-003	7.6400e-003		58.8183	58.8183	4.6000e-004		58.8280
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0753	0.9333	1.8400e-003	0.1453	1.2800e-003	0.1466	0.0385	1.1700e-003	0.0397		160.1468	160.1468	8.6200e-003		160.3279
Total	**0.0753**	**0.3187**	**1.0973**	**2.4200e-003**	**0.1589**	**5.5200e-003**	**0.1645**	**0.0423**	**5.0700e-003**	**0.0474**		**218.9651**	**218.9651**	**9.0800e-003**		**219.1559**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.6453	0.0000	4.6453	2.4987	0.0000	2.4987			0.0000			0.0000
Off-Road	2.0666	21.9443	14.0902	0.0141		1.1968	1.1968		1.1011	1.1011		1,479.800 0	1,479.800 0	0.4418		1,489.077 4
Total	**2.0666**	**21.9443**	**14.0902**	**0.0141**	**4.6453**	**1.1968**	**5.8421**	**2.4987**	**1.1011**	**3.5998**		**1,479.800 0**	**1,479.800 0**	**0.4418**		**1,489.077 4**

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	1.0540	16.9176	11.4006	0.0402	0.9477	0.2949	1.2426	0.2595	0.2712	0.5308		4,088.524 2	4,088.524 2	0.0320		4,089.196 5
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0370	0.0463	0.5744	1.1300e-003	0.0894	7.9000e-004	0.0902	0.0237	7.2000e-004	0.0244		98.5519	98.5519	5.3100e-003		98.6633
Total	**1.0911**	**16.9639**	**11.9749**	**0.0413**	**1.0371**	**0.2957**	**1.3328**	**0.2832**	**0.2720**	**0.5552**		**4,187.076 1**	**4,187.076 1**	**0.0373**		**4,187.859 8**

3.3 Grading - 2015

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					1.8117	0.0000	1.8117	0.9745	0.0000	0.9745			0.0000			0.0000
Off-Road	2.0666	21.9443	14.0902	0.0141		1.1968	1.1968		1.1011	1.1011	0.0000	1,479.8000	1,479.8000	0.4418		1,489.0774
Total	**2.0666**	**21.9443**	**14.0902**	**0.0141**	**1.8117**	**1.1968**	**3.0085**	**0.9745**	**1.1011**	**2.0756**	**0.0000**	**1,479.8000**	**1,479.8000**	**0.4418**		**1,489.0774**

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	1.0540	16.9176	11.4006	0.0402	0.9477	0.2949	1.2426	0.2595	0.2712	0.5308		4,088.5242	4,088.5242	0.0320		4,089.1965
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0370	0.0463	0.5744	1.1300e-003	0.0894	7.9000e-004	0.0902	0.0237	7.2000e-004	0.0244		98.5519	98.5519	5.3100e-003		98.6633
Total	**1.0911**	**16.9639**	**11.9749**	**0.0413**	**1.0371**	**0.2957**	**1.3328**	**0.2832**	**0.2720**	**0.5552**		**4,187.0761**	**4,187.0761**	**0.0373**		**4,187.8598**

3.4 Building Construction - 2015

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	3.6000	21.5642	15.0041	0.0220		1.4851	1.4851		1.4344	1.4344		2,055.6247	2,055.6247	0.4741		2,065.5812
Total	**3.6000**	**21.5642**	**15.0041**	**0.0220**		**1.4851**	**1.4851**		**1.4344**	**1.4344**		**2,055.6247**	**2,055.6247**	**0.4741**		**2,065.5812**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0565	0.5867	0.6493	1.3100e-003	0.0375	0.0103	0.0478	0.0107	9.4300e-003	0.0201		132.2743	132.2743	1.0300e-003		132.2960
Worker	0.0648	0.0811	1.0051	1.9800e-003	0.1565	1.3800e-003	0.1579	0.0415	1.2600e-003	0.0428		172.4658	172.4658	9.2900e-003		172.6608
Total	**0.1213**	**0.6678**	**1.6544**	**3.2900e-003**	**0.1940**	**0.0116**	**0.2056**	**0.0522**	**0.0107**	**0.0629**		**304.7402**	**304.7402**	**0.0103**		**304.9569**

3.4 Building Construction - 2015

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	3.6000	21.5642	15.0041	0.0220		1.4851	1.4851		1.4344	1.4344	0.0000	2,055.6247	2,055.6247	0.4741		2,065.5812
Total	**3.6000**	**21.5642**	**15.0041**	**0.0220**		**1.4851**	**1.4851**		**1.4344**	**1.4344**	**0.0000**	**2,055.6247**	**2,055.6247**	**0.4741**		**2,065.5812**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0565	0.5867	0.6493	1.3100e-003	0.0375	0.0103	0.0478	0.0107	9.4300e-003	0.0201		132.2743	132.2743	1.0300e-003		132.2960
Worker	0.0648	0.0811	1.0051	1.9800e-003	0.1565	1.3800e-003	0.1579	0.0415	1.2600e-003	0.0428		172.4658	172.4658	9.2900e-003		172.6608
Total	**0.1213**	**0.6678**	**1.6544**	**3.2900e-003**	**0.1940**	**0.0116**	**0.2056**	**0.0522**	**0.0107**	**0.0629**		**304.7402**	**304.7402**	**0.0103**		**304.9569**

3.4 Building Construction - 2016

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	3.2915	20.5459	14.7074	0.0220		1.3656	1.3656		1.3176	1.3176		2,046.943 2	2,046.943 2	0.4499		2,056.391 3
Total	**3.2915**	**20.5459**	**14.7074**	**0.0220**		**1.3656**	**1.3656**		**1.3176**	**1.3176**		**2,046.943 2**	**2,046.943 2**	**0.4499**		**2,056.391 3**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0500	0.5182	0.5976	1.3000e-003	0.0375	8.5300e-003	0.0460	0.0107	7.8500e-003	0.0185		130.8174	130.8174	9.3000e-004		130.8370
Worker	0.0585	0.0731	0.9100	1.9800e-003	0.1565	1.3100e-003	0.1578	0.0415	1.2000e-003	0.0427		166.5242	166.5242	8.5400e-003		166.7036
Total	**0.1085**	**0.5913**	**1.5076**	**3.2800e-003**	**0.1940**	**9.8400e-003**	**0.2038**	**0.0522**	**9.0500e-003**	**0.0612**		**297.3415**	**297.3415**	**9.4700e-003**		**297.5406**

3.4 Building Construction - 2016

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	3.2915	20.5459	14.7074	0.0220		1.3656	1.3656		1.3176	1.3176	0.0000	2,046.9432	2,046.9432	0.4499		2,056.3913
Total	**3.2915**	**20.5459**	**14.7074**	**0.0220**		**1.3656**	**1.3656**		**1.3176**	**1.3176**	**0.0000**	**2,046.9432**	**2,046.9432**	**0.4499**		**2,056.3913**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0500	0.5182	0.5976	1.3000e-003	0.0375	8.5300e-003	0.0460	0.0107	7.8500e-003	0.0185		130.8174	130.8174	9.3000e-004		130.8370
Worker	0.0585	0.0731	0.9100	1.9800e-003	0.1565	1.3100e-003	0.1578	0.0415	1.2000e-003	0.0427		166.5242	166.5242	8.5400e-003		166.7036
Total	**0.1085**	**0.5913**	**1.5076**	**3.2800e-003**	**0.1940**	**9.8400e-003**	**0.2038**	**0.0522**	**9.0500e-003**	**0.0612**		**297.3415**	**297.3415**	**9.4700e-003**		**297.5406**

3.5 Paving - 2015

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	1.4041	14.5959	9.1695	0.0133		0.8919	0.8919		0.8215	0.8215		1,382.4703	1,382.4703	0.4054		1,390.9826
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4041**	**14.5959**	**9.1695**	**0.0133**		**0.8919**	**0.8919**		**0.8215**	**0.8215**		**1,382.4703**	**1,382.4703**	**0.4054**		**1,390.9826**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0753	0.9333	1.8400e-003	0.1453	1.2800e-003	0.1466	0.0385	1.1700e-003	0.0397		160.1468	160.1468	8.6200e-003		160.3279
Total	**0.0602**	**0.0753**	**0.9333**	**1.8400e-003**	**0.1453**	**1.2800e-003**	**0.1466**	**0.0385**	**1.1700e-003**	**0.0397**		**160.1468**	**160.1468**	**8.6200e-003**		**160.3279**

3.5 Paving - 2015

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	1.4041	14.5959	9.1695	0.0133		0.8919	0.8919		0.8215	0.8215	0.0000	1,382.4703	1,382.4703	0.4054		1,390.9826
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4041**	**14.5959**	**9.1695**	**0.0133**		**0.8919**	**0.8919**		**0.8215**	**0.8215**	**0.0000**	**1,382.4703**	**1,382.4703**	**0.4054**		**1,390.9826**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0753	0.9333	1.8400e-003	0.1453	1.2800e-003	0.1466	0.0385	1.1700e-003	0.0397		160.1468	160.1468	8.6200e-003		160.3279
Total	**0.0602**	**0.0753**	**0.9333**	**1.8400e-003**	**0.1453**	**1.2800e-003**	**0.1466**	**0.0385**	**1.1700e-003**	**0.0397**		**160.1468**	**160.1468**	**8.6200e-003**		**160.3279**

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	35.8159					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**36.1844**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0125	0.0157	0.1950	4.2000e-004	0.0335	2.8000e-004	0.0338	8.8900e-003	2.6000e-004	9.1500e-003		35.6838	35.6838	1.8300e-003		35.7222
Total	**0.0125**	**0.0157**	**0.1950**	**4.2000e-004**	**0.0335**	**2.8000e-004**	**0.0338**	**8.8900e-003**	**2.6000e-004**	**9.1500e-003**		**35.6838**	**35.6838**	**1.8300e-003**		**35.7222**

3.6 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	35.8159					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**36.1844**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0125	0.0157	0.1950	4.2000e-004	0.0335	2.8000e-004	0.0338	8.8900e-003	2.6000e-004	9.1500e-003		35.6838	35.6838	1.8300e-003		35.7222
Total	**0.0125**	**0.0157**	**0.1950**	**4.2000e-004**	**0.0335**	**2.8000e-004**	**0.0338**	**8.8900e-003**	**2.6000e-004**	**9.1500e-003**		**35.6838**	**35.6838**	**1.8300e-003**		**35.7222**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3867	1.1626	4.6873	0.0122	0.8181	0.0172	0.8353	0.2186	0.0158	0.2344		1,040.2764	1,040.2764	0.0391		1,041.0964
Unmitigated	0.3867	1.1626	4.6873	0.0122	0.8181	0.0172	0.8353	0.2186	0.0158	0.2344		1,040.2764	1,040.2764	0.0391		1,041.0964

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior High School	106.92	0.00	0.00	275,518	275,518
Total	106.92	0.00	0.00	275,518	275,518

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Junior High School	16.60	8.40	6.90	72.80	22.20	5.00	63	25	12

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.512163	0.060173	0.180257	0.139094	0.042244	0.006664	0.016017	0.031880	0.001940	0.002497	0.004356	0.000592	0.002122

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

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	0.0109	0.0995	0.0835	6.0000e-004		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003		119.3425	119.3425	2.2900e-003	2.1900e-003	120.0688
NaturalGas Unmitigated	0.0109	0.0995	0.0835	6.0000e-004		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003		119.3425	119.3425	2.2900e-003	2.1900e-003	120.0688

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Junior High School	1014.41	0.0109	0.0995	0.0835	6.0000e-004		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003		119.3425	119.3425	2.2900e-003	2.1900e-003	120.0688
Total		**0.0109**	**0.0995**	**0.0835**	**6.0000e-004**		**7.5600e-003**	**7.5600e-003**		**7.5600e-003**	**7.5600e-003**		**119.3425**	**119.3425**	**2.2900e-003**	**2.1900e-003**	**120.0688**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Junior High School	1.01441	0.0109	0.0995	0.0835	6.0000e-004		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003		119.3425	119.3425	2.2900e-003	2.1900e-003	120.0688
Total		**0.0109**	**0.0995**	**0.0835**	**6.0000e-004**		**7.5600e-003**	**7.5600e-003**		**7.5600e-003**	**7.5600e-003**		**119.3425**	**119.3425**	**2.2900e-003**	**2.1900e-003**	**120.0688**

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	0.8897	7.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0144	0.0144	4.0000e-005		0.0153
Unmitigated	0.8897	7.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0144	0.0144	4.0000e-005		0.0153

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					
Consumer Products	0.6732					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.6000e-004	7.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0144	0.0144	4.0000e-005		0.0153
Architectural Coating	0.2159					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8897**	**7.0000e-005**	**6.8700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0144**	**0.0144**	**4.0000e-005**		**0.0153**

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					
Consumer Products	0.6732					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.6000e-004	7.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0144	0.0144	4.0000e-005		0.0153
Architectural Coating	0.2159					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8897**	**7.0000e-005**	**6.8700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0144**	**0.0144**	**4.0000e-005**		**0.0153**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

Winter Emissions Calculations

MORCS Charter School

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior High School	66.00	Student	1.84	34,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2017
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project is 3 buildings totalling 34,000 sqft on a 1.84 acre site. Allows the addition of 66 students to an existing school.

Construction Phase - Demo: 7/1/15-7/31/15
Grading: 8/1/15-8/30/15
Const: 9/1/15-11/1/16
Paving: 9/1/15-11/1/15
Coating: 10/1/16-11/1/16

Demolition - 4,000 sqft of structures demolished.

Grading - 8,700 cy of material removed.

Construction Off-road Equipment Mitigation - Assume area is watered 3x per day per SCAQMD guidelines.

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	200.00	306.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	4.00	20.00
tblConstructionPhase	NumDays	10.00	44.00
tblConstructionPhase	PhaseEndDate	12/1/2015	11/1/2016
tblConstructionPhase	PhaseEndDate	10/31/2016	11/1/2016
tblConstructionPhase	PhaseEndDate	8/28/2015	8/30/2015
tblConstructionPhase	PhaseEndDate	1/2/2017	11/1/2015
tblConstructionPhase	PhaseStartDate	11/2/2015	10/1/2016
tblConstructionPhase	PhaseStartDate	8/31/2015	9/1/2015
tblConstructionPhase	PhaseStartDate	11/2/2016	9/1/2015
tblGrading	AcresOfGrading	7.50	1.50
tblGrading	MaterialExported	0.00	8,700.00
tblLandUse	LandUseSquareFeet	7,759.07	34,000.00
tblLandUse	LotAcreage	0.18	1.84
tblProjectCharacteristics	OperationalYear	2014	2017

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					
2015	5.1940	39.5285	27.5587	0.0552	5.6824	2.3900	7.1759	2.7819	2.2678	4.1559	0.0000	5,651.0846	5,651.0846	0.8984	0.0000	5,669.9518
2016	39.6032	23.5468	18.3268	0.0285	0.2275	1.5725	1.8000	0.0611	1.5236	1.5846	0.0000	2,647.7831	2,647.7831	0.4944	0.0000	2,658.1660
Total	**44.7972**	**63.0753**	**45.8855**	**0.0837**	**5.9100**	**3.9625**	**8.9759**	**2.8430**	**3.7914**	**5.7405**	**0.0000**	**8,298.8677**	**8,298.8677**	**1.3929**	**0.0000**	**8,328.1179**

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					
2015	5.1940	39.5285	27.5587	0.0552	2.8488	2.3900	4.3423	1.2577	2.2678	2.6317	0.0000	5,651.0846	5,651.0846	0.8984	0.0000	5,669.9518
2016	39.6032	23.5468	18.3268	0.0285	0.2275	1.5725	1.8000	0.0611	1.5236	1.5846	0.0000	2,647.7831	2,647.7831	0.4944	0.0000	2,658.1660
Total	**44.7972**	**63.0753**	**45.8855**	**0.0837**	**3.0763**	**3.9625**	**6.1422**	**1.3188**	**3.7914**	**4.2163**	**0.0000**	**8,298.8677**	**8,298.8677**	**1.3929**	**0.0000**	**8,328.1179**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**47.95**	**0.00**	**31.57**	**53.61**	**0.00**	**26.55**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8897	7.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0144	0.0144	4.0000e-005		0.0153
Energy	0.0109	0.0995	0.0835	6.0000e-004		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003		119.3425	119.3425	2.2900e-003	2.1900e-003	120.0688
Mobile	0.3981	1.2229	4.5782	0.0116	0.8181	0.0173	0.8353	0.2186	0.0159	0.2345		990.2750	990.2750	0.0391		991.0956
Total	**1.2988**	**1.3224**	**4.6686**	**0.0122**	**0.8181**	**0.0249**	**0.8429**	**0.2186**	**0.0235**	**0.2421**		**1,109.6319**	**1,109.6319**	**0.0414**	**2.1900e-003**	**1,111.1796**

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	0.8897	7.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0144	0.0144	4.0000e-005		0.0153
Energy	0.0109	0.0995	0.0835	6.0000e-004		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003		119.3425	119.3425	2.2900e-003	2.1900e-003	120.0688
Mobile	0.3981	1.2229	4.5782	0.0116	0.8181	0.0173	0.8353	0.2186	0.0159	0.2345		990.2750	990.2750	0.0391		991.0956
Total	**1.2988**	**1.3224**	**4.6686**	**0.0122**	**0.8181**	**0.0249**	**0.8429**	**0.2186**	**0.0235**	**0.2421**		**1,109.6319**	**1,109.6319**	**0.0414**	**2.1900e-003**	**1,111.1796**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2015	7/31/2015	5	23	
2	Grading	Grading	8/1/2015	8/30/2015	5	20	
3	Building Construction	Building Construction	9/1/2015	11/1/2016	5	306	
4	Paving	Paving	9/1/2015	11/1/2015	5	44	
5	Architectural Coating	Architectural Coating	10/1/2016	11/1/2016	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 51,000; Non-Residential Outdoor: 17,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	6.00	174	0.41
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	18.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	1,088.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	14.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2015

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					0.1712	0.0000	0.1712	0.0259	0.0000	0.0259			0.0000			0.0000
Off-Road	3.0666	29.6778	22.0566	0.0245		1.8651	1.8651		1.7469	1.7469		2,509.0599	2,509.0599	0.6357		2,522.4104
Total	**3.0666**	**29.6778**	**22.0566**	**0.0245**	**0.1712**	**1.8651**	**2.0363**	**0.0259**	**1.7469**	**1.7729**		**2,509.0599**	**2,509.0599**	**0.6357**		**2,522.4104**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0161	0.2522	0.1861	5.8000e-004	0.0136	4.2600e-003	0.0179	3.7300e-003	3.9200e-003	7.6500e-003		58.6788	58.6788	4.7000e-004		58.6886
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0826	0.8627	1.7300e-003	0.1453	1.2800e-003	0.1466	0.0385	1.1700e-003	0.0397		150.2359	150.2359	8.6200e-003		150.4170
Total	**0.0776**	**0.3349**	**1.0488**	**2.3100e-003**	**0.1589**	**5.5400e-003**	**0.1645**	**0.0423**	**5.0900e-003**	**0.0474**		**208.9148**	**208.9148**	**9.0900e-003**		**209.1056**

3.2 Demolition - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0668	0.0000	0.0668	0.0101	0.0000	0.0101			0.0000			0.0000
Off-Road	3.0666	29.6778	22.0566	0.0245		1.8651	1.8651		1.7469	1.7469	0.0000	2,509.0599	2,509.0599	0.6357		2,522.4104
Total	**3.0666**	**29.6778**	**22.0566**	**0.0245**	**0.0668**	**1.8651**	**1.9319**	**0.0101**	**1.7469**	**1.7570**	**0.0000**	**2,509.0599**	**2,509.0599**	**0.6357**		**2,522.4104**

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	0.0161	0.2522	0.1861	5.8000e-004	0.0136	4.2600e-003	0.0179	3.7300e-003	3.9200e-003	7.6500e-003		58.6788	58.6788	4.7000e-004		58.6886
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0826	0.8627	1.7300e-003	0.1453	1.2800e-003	0.1466	0.0385	1.1700e-003	0.0397		150.2359	150.2359	8.6200e-003		150.4170
Total	**0.0776**	**0.3349**	**1.0488**	**2.3100e-003**	**0.1589**	**5.5400e-003**	**0.1645**	**0.0423**	**5.0900e-003**	**0.0474**		**208.9148**	**208.9148**	**9.0900e-003**		**209.1056**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.6453	0.0000	4.6453	2.4987	0.0000	2.4987			0.0000			0.0000
Off-Road	2.0666	21.9443	14.0902	0.0141		1.1968	1.1968		1.1011	1.1011		1,479.8000	1,479.8000	0.4418		1,489.0774
Total	**2.0666**	**21.9443**	**14.0902**	**0.0141**	**4.6453**	**1.1968**	**5.8421**	**2.4987**	**1.1011**	**3.5998**		**1,479.8000**	**1,479.8000**	**0.4418**		**1,489.0774**

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	1.1163	17.5334	12.9375	0.0401	0.9477	0.2959	1.2436	0.2595	0.2722	0.5317		4,078.8317	4,078.8317	0.0324		4,079.5124
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0379	0.0509	0.5309	1.0600e-003	0.0894	7.9000e-004	0.0902	0.0237	7.2000e-004	0.0244		92.4529	92.4529	5.3100e-003		92.5643
Total	**1.1542**	**17.5843**	**13.4684**	**0.0411**	**1.0371**	**0.2967**	**1.3338**	**0.2832**	**0.2729**	**0.5561**		**4,171.2846**	**4,171.2846**	**0.0377**		**4,172.0767**

3.3 Grading - 2015

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					1.8117	0.0000	1.8117	0.9745	0.0000	0.9745			0.0000			0.0000
Off-Road	2.0666	21.9443	14.0902	0.0141		1.1968	1.1968		1.1011	1.1011	0.0000	1,479.8000	1,479.8000	0.4418		1,489.0774
Total	**2.0666**	**21.9443**	**14.0902**	**0.0141**	**1.8117**	**1.1968**	**3.0085**	**0.9745**	**1.1011**	**2.0756**	**0.0000**	**1,479.8000**	**1,479.8000**	**0.4418**		**1,489.0774**

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	1.1163	17.5334	12.9375	0.0401	0.9477	0.2959	1.2436	0.2595	0.2722	0.5317		4,078.8317	4,078.8317	0.0324		4,079.5124
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0379	0.0509	0.5309	1.0600e-003	0.0894	7.9000e-004	0.0902	0.0237	7.2000e-004	0.0244		92.4529	92.4529	5.3100e-003		92.5643
Total	**1.1542**	**17.5843**	**13.4684**	**0.0411**	**1.0371**	**0.2967**	**1.3338**	**0.2832**	**0.2729**	**0.5561**		**4,171.2846**	**4,171.2846**	**0.0377**		**4,172.0767**

3.4 Building Construction - 2015

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	3.6000	21.5642	15.0041	0.0220		1.4851	1.4851		1.4344	1.4344		2,055.6247	2,055.6247	0.4741		2,065.5812
Total	**3.6000**	**21.5642**	**15.0041**	**0.0220**		**1.4851**	**1.4851**		**1.4344**	**1.4344**		**2,055.6247**	**2,055.6247**	**0.4741**		**2,065.5812**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0621	0.6020	0.7703	1.3000e-003	0.0375	0.0104	0.0479	0.0107	9.5500e-003	0.0202		131.1701	131.1701	1.0600e-003		131.1925
Worker	0.0663	0.0890	0.9291	1.8600e-003	0.1565	1.3800e-003	0.1579	0.0415	1.2600e-003	0.0428		161.7925	161.7925	9.2900e-003		161.9875
Total	**0.1284**	**0.6910**	**1.6993**	**3.1600e-003**	**0.1940**	**0.0118**	**0.2057**	**0.0522**	**0.0108**	**0.0630**		**292.9627**	**292.9627**	**0.0104**		**293.1800**

3.4 Building Construction - 2015

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	3.6000	21.5642	15.0041	0.0220		1.4851	1.4851		1.4344	1.4344	0.0000	2,055.6247	2,055.6247	0.4741		2,065.5812
Total	**3.6000**	**21.5642**	**15.0041**	**0.0220**		**1.4851**	**1.4851**		**1.4344**	**1.4344**	**0.0000**	**2,055.6247**	**2,055.6247**	**0.4741**		**2,065.5812**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0621	0.6020	0.7703	1.3000e-003	0.0375	0.0104	0.0479	0.0107	9.5500e-003	0.0202		131.1701	131.1701	1.0600e-003		131.1925
Worker	0.0663	0.0890	0.9291	1.8600e-003	0.1565	1.3800e-003	0.1579	0.0415	1.2600e-003	0.0428		161.7925	161.7925	9.2900e-003		161.9875
Total	**0.1284**	**0.6910**	**1.6993**	**3.1600e-003**	**0.1940**	**0.0118**	**0.2057**	**0.0522**	**0.0108**	**0.0630**		**292.9627**	**292.9627**	**0.0104**		**293.1800**

3.4 Building Construction - 2016

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	3.2915	20.5459	14.7074	0.0220		1.3656	1.3656		1.3176	1.3176		2,046.9432	2,046.9432	0.4499		2,056.3913
Total	**3.2915**	**20.5459**	**14.7074**	**0.0220**		**1.3656**	**1.3656**		**1.3176**	**1.3176**		**2,046.9432**	**2,046.9432**	**0.4499**		**2,056.3913**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0548	0.5313	0.7174	1.3000e-003	0.0375	8.6200e-003	0.0461	0.0107	7.9300e-003	0.0186		129.7203	129.7203	9.6000e-004		129.7404
Worker	0.0597	0.0803	0.8385	1.8600e-003	0.1565	1.3100e-003	0.1578	0.0415	1.2000e-003	0.0427		156.2001	156.2001	8.5400e-003		156.3796
Total	**0.1145**	**0.6115**	**1.5558**	**3.1600e-003**	**0.1940**	**9.9300e-003**	**0.2039**	**0.0522**	**9.1300e-003**	**0.0613**		**285.9204**	**285.9204**	**9.5000e-003**		**286.1200**

3.4 Building Construction - 2016

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	3.2915	20.5459	14.7074	0.0220		1.3656	1.3656		1.3176	1.3176	0.0000	2,046.9432	2,046.9432	0.4499		2,056.3913
Total	**3.2915**	**20.5459**	**14.7074**	**0.0220**		**1.3656**	**1.3656**		**1.3176**	**1.3176**	**0.0000**	**2,046.9432**	**2,046.9432**	**0.4499**		**2,056.3913**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0548	0.5313	0.7174	1.3000e-003	0.0375	8.6200e-003	0.0461	0.0107	7.9300e-003	0.0186		129.7203	129.7203	9.6000e-004		129.7404
Worker	0.0597	0.0803	0.8385	1.8600e-003	0.1565	1.3100e-003	0.1578	0.0415	1.2000e-003	0.0427		156.2001	156.2001	8.5400e-003		156.3796
Total	**0.1145**	**0.6115**	**1.5558**	**3.1600e-003**	**0.1940**	**9.9300e-003**	**0.2039**	**0.0522**	**9.1300e-003**	**0.0613**		**285.9204**	**285.9204**	**9.5000e-003**		**286.1200**

3.5 Paving - 2015

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	1.4041	14.5959	9.1695	0.0133		0.8919	0.8919		0.8215	0.8215		1,382.4703	1,382.4703	0.4054		1,390.9826
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4041**	**14.5959**	**9.1695**	**0.0133**		**0.8919**	**0.8919**		**0.8215**	**0.8215**		**1,382.4703**	**1,382.4703**	**0.4054**		**1,390.9826**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0826	0.8627	1.7300e-003	0.1453	1.2800e-003	0.1466	0.0385	1.1700e-003	0.0397		150.2359	150.2359	8.6200e-003		150.4170
Total	**0.0616**	**0.0826**	**0.8627**	**1.7300e-003**	**0.1453**	**1.2800e-003**	**0.1466**	**0.0385**	**1.1700e-003**	**0.0397**		**150.2359**	**150.2359**	**8.6200e-003**		**150.4170**

3.5 Paving - 2015

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	1.4041	14.5959	9.1695	0.0133		0.8919	0.8919		0.8215	0.8215	0.0000	1,382.4703	1,382.4703	0.4054		1,390.9826
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4041**	**14.5959**	**9.1695**	**0.0133**		**0.8919**	**0.8919**		**0.8215**	**0.8215**	**0.0000**	**1,382.4703**	**1,382.4703**	**0.4054**		**1,390.9826**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0616	0.0826	0.8627	1.7300e-003	0.1453	1.2800e-003	0.1466	0.0385	1.1700e-003	0.0397		150.2359	150.2359	8.6200e-003		150.4170
Total	**0.0616**	**0.0826**	**0.8627**	**1.7300e-003**	**0.1453**	**1.2800e-003**	**0.1466**	**0.0385**	**1.1700e-003**	**0.0397**		**150.2359**	**150.2359**	**8.6200e-003**		**150.4170**

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	35.8159					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**36.1844**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0128	0.0172	0.1797	4.0000e-004	0.0335	2.8000e-004	0.0338	8.8900e-003	2.6000e-004	9.1500e-003		33.4715	33.4715	1.8300e-003		33.5099
Total	**0.0128**	**0.0172**	**0.1797**	**4.0000e-004**	**0.0335**	**2.8000e-004**	**0.0338**	**8.8900e-003**	**2.6000e-004**	**9.1500e-003**		**33.4715**	**33.4715**	**1.8300e-003**		**33.5099**

3.6 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	35.8159					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**36.1844**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0128	0.0172	0.1797	4.0000e-004	0.0335	2.8000e-004	0.0338	8.8900e-003	2.6000e-004	9.1500e-003		33.4715	33.4715	1.8300e-003		33.5099
Total	**0.0128**	**0.0172**	**0.1797**	**4.0000e-004**	**0.0335**	**2.8000e-004**	**0.0338**	**8.8900e-003**	**2.6000e-004**	**9.1500e-003**		**33.4715**	**33.4715**	**1.8300e-003**		**33.5099**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3981	1.2229	4.5782	0.0116	0.8181	0.0173	0.8353	0.2186	0.0159	0.2345		990.2750	990.2750	0.0391		991.0956
Unmitigated	0.3981	1.2229	4.5782	0.0116	0.8181	0.0173	0.8353	0.2186	0.0159	0.2345		990.2750	990.2750	0.0391		991.0956

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior High School	106.92	0.00	0.00	275,518	275,518
Total	106.92	0.00	0.00	275,518	275,518

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Junior High School	16.60	8.40	6.90	72.80	22.20	5.00	63	25	12

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.512163	0.060173	0.180257	0.139094	0.042244	0.006664	0.016017	0.031880	0.001940	0.002497	0.004356	0.000592	0.002122

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

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	0.0109	0.0995	0.0835	6.0000e-004		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003		119.3425	119.3425	2.2900e-003	2.1900e-003	120.0688
NaturalGas Unmitigated	0.0109	0.0995	0.0835	6.0000e-004		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003		119.3425	119.3425	2.2900e-003	2.1900e-003	120.0688

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Junior High School	1014.41	0.0109	0.0995	0.0835	6.0000e-004		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003		119.3425	119.3425	2.2900e-003	2.1900e-003	120.0688
Total		**0.0109**	**0.0995**	**0.0835**	**6.0000e-004**		**7.5600e-003**	**7.5600e-003**		**7.5600e-003**	**7.5600e-003**		**119.3425**	**119.3425**	**2.2900e-003**	**2.1900e-003**	**120.0688**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Junior High School	1.01441	0.0109	0.0995	0.0835	6.0000e-004		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003		119.3425	119.3425	2.2900e-003	2.1900e-003	120.0688
Total		**0.0109**	**0.0995**	**0.0835**	**6.0000e-004**		**7.5600e-003**	**7.5600e-003**		**7.5600e-003**	**7.5600e-003**		**119.3425**	**119.3425**	**2.2900e-003**	**2.1900e-003**	**120.0688**

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	0.8897	7.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0144	0.0144	4.0000e-005		0.0153
Unmitigated	0.8897	7.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0144	0.0144	4.0000e-005		0.0153

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					
Consumer Products	0.6732					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.6000e-004	7.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0144	0.0144	4.0000e-005		0.0153
Architectural Coating	0.2159					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8897**	**7.0000e-005**	**6.8700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0144**	**0.0144**	**4.0000e-005**		**0.0153**

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					
Consumer Products	0.6732					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.6000e-004	7.0000e-005	6.8700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0144	0.0144	4.0000e-005		0.0153
Architectural Coating	0.2159					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8897**	**7.0000e-005**	**6.8700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0144**	**0.0144**	**4.0000e-005**		**0.0153**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

Annual Emissions Calculations

MORCS Charter School

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior High School	66.00	Student	1.84	34,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2017
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	1227.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project is 3 buildings totalling 34,000 sqft on a 1.84 acre site. Allows the addition of 66 students to an existing school.

Construction Phase - Demo: 7/1/15-7/31/15
Grading: 8/1/15-8/30/15
Const: 9/1/15-11/1/16
Paving: 9/1/15-11/1/15
Coating: 10/1/16-11/1/16

Demolition - 4,000 sqft of structures demolished.

Grading - 8,700 cy of material removed.

Construction Off-road Equipment Mitigation - Assume area is watered 3x per day per SCAQMD guidelines.

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	200.00	306.00
tblConstructionPhase	NumDays	20.00	23.00
tblConstructionPhase	NumDays	4.00	20.00
tblConstructionPhase	NumDays	10.00	44.00
tblConstructionPhase	PhaseEndDate	12/1/2015	11/1/2016
tblConstructionPhase	PhaseEndDate	10/31/2016	11/1/2016
tblConstructionPhase	PhaseEndDate	8/28/2015	8/30/2015
tblConstructionPhase	PhaseEndDate	1/2/2017	11/1/2015
tblConstructionPhase	PhaseStartDate	11/2/2015	10/1/2016
tblConstructionPhase	PhaseStartDate	8/31/2015	9/1/2015
tblConstructionPhase	PhaseStartDate	11/2/2016	9/1/2015
tblGrading	AcresOfGrading	7.50	1.50
tblGrading	MaterialExported	0.00	8,700.00
tblLandUse	LandUseSquareFeet	7,759.07	34,000.00
tblLandUse	LotAcreage	0.18	1.84
tblProjectCharacteristics	OperationalYear	2014	2017

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					
2015	0.2641	2.0464	1.4958	2.3000e-003	0.0719	0.1220	0.1939	0.0317	0.1156	0.1472	0.0000	204.2192	204.2192	0.0387	0.0000	205.0314
2016	0.7689	2.3338	1.7956	2.7800e-003	0.0211	0.1521	0.1732	5.6900e-003	0.1468	0.1525	0.0000	234.1314	234.1314	0.0458	0.0000	235.0927
Total	**1.0330**	**4.3802**	**3.2914**	**5.0800e-003**	**0.0931**	**0.2741**	**0.3671**	**0.0373**	**0.2623**	**0.2997**	**0.0000**	**438.3506**	**438.3506**	**0.0845**	**0.0000**	**440.1240**

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					
2015	0.2641	2.0464	1.4958	2.3000e-003	0.0424	0.1220	0.1644	0.0162	0.1156	0.1318	0.0000	204.2190	204.2190	0.0387	0.0000	205.0312
2016	0.7689	2.3338	1.7956	2.7800e-003	0.0211	0.1521	0.1732	5.6900e-003	0.1468	0.1525	0.0000	234.1311	234.1311	0.0458	0.0000	235.0924
Total	**1.0330**	**4.3802**	**3.2914**	**5.0800e-003**	**0.0635**	**0.2741**	**0.3376**	**0.0219**	**0.2623**	**0.2843**	**0.0000**	**438.3502**	**438.3502**	**0.0845**	**0.0000**	**440.1236**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**31.74**	**0.00**	**8.05**	**41.32**	**0.00**	**5.15**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1623	1.0000e-005	8.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6400e-003	1.6400e-003	0.0000	0.0000	1.7300e-003
Energy	2.0000e-003	0.0182	0.0153	1.1000e-004		1.3800e-003	1.3800e-003		1.3800e-003	1.3800e-003	0.0000	146.6343	146.6343	3.3800e-003	9.8000e-004	147.0097
Mobile	0.0493	0.1621	0.6020	1.5300e-003	0.1044	2.2400e-003	0.1067	0.0279	2.0600e-003	0.0300	0.0000	118.0658	118.0658	4.6000e-003	0.0000	118.1624
Waste						0.0000	0.0000		0.0000	0.0000	2.4440	0.0000	2.4440	0.1444	0.0000	5.4772
Water						0.0000	0.0000		0.0000	0.0000	0.0508	3.7062	3.7570	5.3000e-003	1.4000e-004	3.9121
Total	**0.2137**	**0.1803**	**0.6181**	**1.6400e-003**	**0.1044**	**3.6200e-003**	**0.1080**	**0.0279**	**3.4400e-003**	**0.0314**	**2.4948**	**268.4079**	**270.9027**	**0.1577**	**1.1200e-003**	**274.5631**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1623	1.0000e-005	8.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6400e-003	1.6400e-003	0.0000	0.0000	1.7300e-003
Energy	2.0000e-003	0.0182	0.0153	1.1000e-004		1.3800e-003	1.3800e-003		1.3800e-003	1.3800e-003	0.0000	146.6343	146.6343	3.3800e-003	9.8000e-004	147.0097
Mobile	0.0493	0.1621	0.6020	1.5300e-003	0.1044	2.2400e-003	0.1067	0.0279	2.0600e-003	0.0300	0.0000	118.0658	118.0658	4.6000e-003	0.0000	118.1624
Waste						0.0000	0.0000		0.0000	0.0000	2.4440	0.0000	2.4440	0.1444	0.0000	5.4772
Water						0.0000	0.0000		0.0000	0.0000	0.0508	3.7062	3.7570	5.3000e-003	1.4000e-004	3.9120
Total	**0.2137**	**0.1803**	**0.6181**	**1.6400e-003**	**0.1044**	**3.6200e-003**	**0.1080**	**0.0279**	**3.4400e-003**	**0.0314**	**2.4948**	**268.4079**	**270.9027**	**0.1577**	**1.1200e-003**	**274.5630**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2015	7/31/2015	5	23	
2	Grading	Grading	8/1/2015	8/30/2015	5	20	
3	Building Construction	Building Construction	9/1/2015	11/1/2016	5	306	
4	Paving	Paving	9/1/2015	11/1/2015	5	44	
5	Architectural Coating	Architectural Coating	10/1/2016	11/1/2016	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 51,000; Non-Residential Outdoor: 17,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	6.00	174	0.41
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	18.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	1,088.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	14.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2015

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					1.9700e-003	0.0000	1.9700e-003	3.0000e-004	0.0000	3.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0353	0.3413	0.2537	2.8000e-004		0.0215	0.0215		0.0201	0.0201	0.0000	26.1761	26.1761	6.6300e-003	0.0000	26.3154
Total	**0.0353**	**0.3413**	**0.2537**	**2.8000e-004**	**1.9700e-003**	**0.0215**	**0.0234**	**3.0000e-004**	**0.0201**	**0.0204**	**0.0000**	**26.1761**	**26.1761**	**6.6300e-003**	**0.0000**	**26.3154**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.8000e-004	2.9500e-003	2.1100e-003	1.0000e-005	1.5000e-004	5.0000e-005	2.0000e-004	4.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.6130	0.6130	0.0000	0.0000	0.6131
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	9.8000e-004	0.0102	2.0000e-005	1.6400e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5917	1.5917	9.0000e-005	0.0000	1.5936
Total	**8.5000e-004**	**3.9300e-003**	**0.0123**	**3.0000e-005**	**1.7900e-003**	**6.0000e-005**	**1.8500e-003**	**4.8000e-004**	**5.0000e-005**	**5.4000e-004**	**0.0000**	**2.2047**	**2.2047**	**9.0000e-005**	**0.0000**	**2.2067**

3.2 Demolition - 2015

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					7.7000e-004	0.0000	7.7000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0353	0.3413	0.2537	2.8000e-004		0.0215	0.0215		0.0201	0.0201	0.0000	26.1761	26.1761	6.6300e-003	0.0000	26.3153
Total	**0.0353**	**0.3413**	**0.2537**	**2.8000e-004**	**7.7000e-004**	**0.0215**	**0.0222**	**1.2000e-004**	**0.0201**	**0.0202**	**0.0000**	**26.1761**	**26.1761**	**6.6300e-003**	**0.0000**	**26.3153**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.8000e-004	2.9500e-003	2.1100e-003	1.0000e-005	1.5000e-004	5.0000e-005	2.0000e-004	4.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.6130	0.6130	0.0000	0.0000	0.6131
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	9.8000e-004	0.0102	2.0000e-005	1.6400e-003	1.0000e-005	1.6500e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5917	1.5917	9.0000e-005	0.0000	1.5936
Total	**8.5000e-004**	**3.9300e-003**	**0.0123**	**3.0000e-005**	**1.7900e-003**	**6.0000e-005**	**1.8500e-003**	**4.8000e-004**	**5.0000e-005**	**5.4000e-004**	**0.0000**	**2.2047**	**2.2047**	**9.0000e-005**	**0.0000**	**2.2067**

3.3 Grading - 2015

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					0.0465	0.0000	0.0465	0.0250	0.0000	0.0250	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0207	0.2194	0.1409	1.4000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	13.4245	13.4245	4.0100e-003	0.0000	13.5087
Total	**0.0207**	**0.2194**	**0.1409**	**1.4000e-004**	**0.0465**	**0.0120**	**0.0584**	**0.0250**	**0.0110**	**0.0360**	**0.0000**	**13.4245**	**13.4245**	**4.0100e-003**	**0.0000**	**13.5087**

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	0.0110	0.1783	0.1273	4.0000e-004	9.3200e-003	2.9500e-003	0.0123	2.5600e-003	2.7200e-003	5.2700e-003	0.0000	37.0535	37.0535	2.9000e-004	0.0000	37.0597
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	5.2000e-004	5.4400e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.8517	0.8517	5.0000e-005	0.0000	0.8527
Total	**0.0113**	**0.1789**	**0.1327**	**4.1000e-004**	**0.0102**	**2.9600e-003**	**0.0132**	**2.7900e-003**	**2.7300e-003**	**5.5100e-003**	**0.0000**	**37.9053**	**37.9053**	**3.4000e-004**	**0.0000**	**37.9124**

3.3 Grading - 2015

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					0.0181	0.0000	0.0181	9.7400e-003	0.0000	9.7400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0207	0.2194	0.1409	1.4000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	13.4245	13.4245	4.0100e-003	0.0000	13.5087
Total	**0.0207**	**0.2194**	**0.1409**	**1.4000e-004**	**0.0181**	**0.0120**	**0.0301**	**9.7400e-003**	**0.0110**	**0.0208**	**0.0000**	**13.4245**	**13.4245**	**4.0100e-003**	**0.0000**	**13.5087**

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	0.0110	0.1783	0.1273	4.0000e-004	9.3200e-003	2.9500e-003	0.0123	2.5600e-003	2.7200e-003	5.2700e-003	0.0000	37.0535	37.0535	2.9000e-004	0.0000	37.0597
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	5.2000e-004	5.4400e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.8517	0.8517	5.0000e-005	0.0000	0.8527
Total	**0.0113**	**0.1789**	**0.1327**	**4.1000e-004**	**0.0102**	**2.9600e-003**	**0.0132**	**2.7900e-003**	**2.7300e-003**	**5.5100e-003**	**0.0000**	**37.9053**	**37.9053**	**3.4000e-004**	**0.0000**	**37.9124**

3.4 Building Construction - 2015

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	0.1584	0.9488	0.6602	9.7000e-004		0.0653	0.0653		0.0631	0.0631	0.0000	82.0526	82.0526	0.0189	0.0000	82.4500
Total	**0.1584**	**0.9488**	**0.6602**	**9.7000e-004**		**0.0653**	**0.0653**		**0.0631**	**0.0631**	**0.0000**	**82.0526**	**82.0526**	**0.0189**	**0.0000**	**82.4500**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6500e-003	0.0270	0.0331	6.0000e-005	1.6200e-003	4.5000e-004	2.0800e-003	4.6000e-004	4.2000e-004	8.8000e-004	0.0000	5.2614	5.2614	4.0000e-005	0.0000	5.2622
Worker	2.7500e-003	4.0300e-003	0.0419	8.0000e-005	6.7600e-003	6.0000e-005	6.8200e-003	1.7900e-003	6.0000e-005	1.8500e-003	0.0000	6.5583	6.5583	3.7000e-004	0.0000	6.5661
Total	**5.4000e-003**	**0.0310**	**0.0749**	**1.4000e-004**	**8.3800e-003**	**5.1000e-004**	**8.9000e-003**	**2.2500e-003**	**4.8000e-004**	**2.7300e-003**	**0.0000**	**11.8197**	**11.8197**	**4.1000e-004**	**0.0000**	**11.8284**

3.4 Building Construction - 2015

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	0.1584	0.9488	0.6602	9.7000e-004		0.0653	0.0653		0.0631	0.0631	0.0000	82.0525	82.0525	0.0189	0.0000	82.4499
Total	**0.1584**	**0.9488**	**0.6602**	**9.7000e-004**		**0.0653**	**0.0653**		**0.0631**	**0.0631**	**0.0000**	**82.0525**	**82.0525**	**0.0189**	**0.0000**	**82.4499**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6500e-003	0.0270	0.0331	6.0000e-005	1.6200e-003	4.5000e-004	2.0800e-003	4.6000e-004	4.2000e-004	8.8000e-004	0.0000	5.2614	5.2614	4.0000e-005	0.0000	5.2622
Worker	2.7500e-003	4.0300e-003	0.0419	8.0000e-005	6.7600e-003	6.0000e-005	6.8200e-003	1.7900e-003	6.0000e-005	1.8500e-003	0.0000	6.5583	6.5583	3.7000e-004	0.0000	6.5661
Total	**5.4000e-003**	**0.0310**	**0.0749**	**1.4000e-004**	**8.3800e-003**	**5.1000e-004**	**8.9000e-003**	**2.2500e-003**	**4.8000e-004**	**2.7300e-003**	**0.0000**	**11.8197**	**11.8197**	**4.1000e-004**	**0.0000**	**11.8284**

3.4 Building Construction - 2016

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	0.3588	2.2395	1.6031	2.3900e-003		0.1489	0.1489		0.1436	0.1436	0.0000	202.4082	202.4082	0.0445	0.0000	203.3424
Total	**0.3588**	**2.2395**	**1.6031**	**2.3900e-003**		**0.1489**	**0.1489**		**0.1436**	**0.1436**	**0.0000**	**202.4082**	**202.4082**	**0.0445**	**0.0000**	**203.3424**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.8000e-003	0.0591	0.0761	1.4000e-004	4.0200e-003	9.3000e-004	4.9600e-003	1.1500e-003	8.6000e-004	2.0100e-003	0.0000	12.8901	12.8901	9.0000e-005	0.0000	12.8920
Worker	6.1300e-003	9.0100e-003	0.0936	2.1000e-004	0.0167	1.4000e-004	0.0169	4.4500e-003	1.3000e-004	4.5800e-003	0.0000	15.6854	15.6854	8.4000e-004	0.0000	15.7031
Total	**0.0119**	**0.0681**	**0.1697**	**3.5000e-004**	**0.0208**	**1.0700e-003**	**0.0218**	**5.6000e-003**	**9.9000e-004**	**6.5900e-003**	**0.0000**	**28.5754**	**28.5754**	**9.3000e-004**	**0.0000**	**28.5951**

3.4 Building Construction - 2016

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	0.3588	2.2395	1.6031	2.3900e-003		0.1489	0.1489		0.1436	0.1436	0.0000	202.4079	202.4079	0.0445	0.0000	203.3422
Total	**0.3588**	**2.2395**	**1.6031**	**2.3900e-003**		**0.1489**	**0.1489**		**0.1436**	**0.1436**	**0.0000**	**202.4079**	**202.4079**	**0.0445**	**0.0000**	**203.3422**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.8000e-003	0.0591	0.0761	1.4000e-004	4.0200e-003	9.3000e-004	4.9600e-003	1.1500e-003	8.6000e-004	2.0100e-003	0.0000	12.8901	12.8901	9.0000e-005	0.0000	12.8920
Worker	6.1300e-003	9.0100e-003	0.0936	2.1000e-004	0.0167	1.4000e-004	0.0169	4.4500e-003	1.3000e-004	4.5800e-003	0.0000	15.6854	15.6854	8.4000e-004	0.0000	15.7031
Total	**0.0119**	**0.0681**	**0.1697**	**3.5000e-004**	**0.0208**	**1.0700e-003**	**0.0218**	**5.6000e-003**	**9.9000e-004**	**6.5900e-003**	**0.0000**	**28.5754**	**28.5754**	**9.3000e-004**	**0.0000**	**28.5951**

3.5 Paving - 2015

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	0.0309	0.3211	0.2017	2.9000e-004		0.0196	0.0196		0.0181	0.0181	0.0000	27.5914	27.5914	8.0900e-003	0.0000	27.7613
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0309**	**0.3211**	**0.2017**	**2.9000e-004**		**0.0196**	**0.0196**		**0.0181**	**0.0181**	**0.0000**	**27.5914**	**27.5914**	**8.0900e-003**	**0.0000**	**27.7613**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2800e-003	1.8700e-003	0.0194	4.0000e-005	3.1400e-003	3.0000e-005	3.1700e-003	8.3000e-004	3.0000e-005	8.6000e-004	0.0000	3.0449	3.0449	1.7000e-004	0.0000	3.0486
Total	**1.2800e-003**	**1.8700e-003**	**0.0194**	**4.0000e-005**	**3.1400e-003**	**3.0000e-005**	**3.1700e-003**	**8.3000e-004**	**3.0000e-005**	**8.6000e-004**	**0.0000**	**3.0449**	**3.0449**	**1.7000e-004**	**0.0000**	**3.0486**

3.5 Paving - 2015

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	0.0309	0.3211	0.2017	2.9000e-004		0.0196	0.0196		0.0181	0.0181	0.0000	27.5914	27.5914	8.0900e-003	0.0000	27.7613
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0309**	**0.3211**	**0.2017**	**2.9000e-004**		**0.0196**	**0.0196**		**0.0181**	**0.0181**	**0.0000**	**27.5914**	**27.5914**	**8.0900e-003**	**0.0000**	**27.7613**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2800e-003	1.8700e-003	0.0194	4.0000e-005	3.1400e-003	3.0000e-005	3.1700e-003	8.3000e-004	3.0000e-005	8.6000e-004	0.0000	3.0449	3.0449	1.7000e-004	0.0000	3.0486
Total	**1.2800e-003**	**1.8700e-003**	**0.0194**	**4.0000e-005**	**3.1400e-003**	**3.0000e-005**	**3.1700e-003**	**8.3000e-004**	**3.0000e-005**	**8.6000e-004**	**0.0000**	**3.0449**	**3.0449**	**1.7000e-004**	**0.0000**	**3.0486**

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3940					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0500e-003	0.0261	0.0207	3.0000e-005		2.1600e-003	2.1600e-003		2.1600e-003	2.1600e-003	0.0000	2.8086	2.8086	3.3000e-004	0.0000	2.8155
Total	**0.3980**	**0.0261**	**0.0207**	**3.0000e-005**		**2.1600e-003**	**2.1600e-003**		**2.1600e-003**	**2.1600e-003**	**0.0000**	**2.8086**	**2.8086**	**3.3000e-004**	**0.0000**	**2.8155**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	1.9000e-004	2.0200e-003	0.0000	3.6000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3392	0.3392	2.0000e-005	0.0000	0.3396
Total	**1.3000e-004**	**1.9000e-004**	**2.0200e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.7000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3392**	**0.3392**	**2.0000e-005**	**0.0000**	**0.3396**

3.6 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3940					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0500e-003	0.0261	0.0207	3.0000e-005		2.1600e-003	2.1600e-003		2.1600e-003	2.1600e-003	0.0000	2.8086	2.8086	3.3000e-004	0.0000	2.8155
Total	**0.3980**	**0.0261**	**0.0207**	**3.0000e-005**		**2.1600e-003**	**2.1600e-003**		**2.1600e-003**	**2.1600e-003**	**0.0000**	**2.8086**	**2.8086**	**3.3000e-004**	**0.0000**	**2.8155**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	1.9000e-004	2.0200e-003	0.0000	3.6000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3392	0.3392	2.0000e-005	0.0000	0.3396
Total	**1.3000e-004**	**1.9000e-004**	**2.0200e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.7000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3392**	**0.3392**	**2.0000e-005**	**0.0000**	**0.3396**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0493	0.1621	0.6020	1.5300e-003	0.1044	2.2400e-003	0.1067	0.0279	2.0600e-003	0.0300	0.0000	118.0658	118.0658	4.6000e-003	0.0000	118.1624
Unmitigated	0.0493	0.1621	0.6020	1.5300e-003	0.1044	2.2400e-003	0.1067	0.0279	2.0600e-003	0.0300	0.0000	118.0658	118.0658	4.6000e-003	0.0000	118.1624

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior High School	106.92	0.00	0.00	275,518	275,518
Total	106.92	0.00	0.00	275,518	275,518

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Junior High School	16.60	8.40	6.90	72.80	22.20	5.00	63	25	12

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.512163	0.060173	0.180257	0.139094	0.042244	0.006664	0.016017	0.031880	0.001940	0.002497	0.004356	0.000592	0.002122

5.0 Energy Detail

Historical Energy Use: N

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						0.0000	0.0000		0.0000	0.0000	0.0000	126.8758	126.8758	3.0000e-003	6.2000e-004	127.1310
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	126.8758	126.8758	3.0000e-003	6.2000e-004	127.1310
NaturalGas Mitigated	2.0000e-003	0.0182	0.0153	1.1000e-004		1.3800e-003	1.3800e-003		1.3800e-003	1.3800e-003	0.0000	19.7585	19.7585	3.8000e-004	3.6000e-004	19.8787
NaturalGas Unmitigated	2.0000e-003	0.0182	0.0153	1.1000e-004		1.3800e-003	1.3800e-003		1.3800e-003	1.3800e-003	0.0000	19.7585	19.7585	3.8000e-004	3.6000e-004	19.8787

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Junior High School	370260	2.0000e-003	0.0182	0.0153	1.1000e-004		1.3800e-003	1.3800e-003		1.3800e-003	1.3800e-003	0.0000	19.7585	19.7585	3.8000e-004	3.6000e-004	19.8787
Total		**2.0000e-003**	**0.0182**	**0.0153**	**1.1000e-004**		**1.3800e-003**	**1.3800e-003**		**1.3800e-003**	**1.3800e-003**	**0.0000**	**19.7585**	**19.7585**	**3.8000e-004**	**3.6000e-004**	**19.8787**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Junior High School	370260	2.0000e-003	0.0182	0.0153	1.1000e-004		1.3800e-003	1.3800e-003		1.3800e-003	1.3800e-003	0.0000	19.7585	19.7585	3.8000e-004	3.6000e-004	19.8787
Total		**2.0000e-003**	**0.0182**	**0.0153**	**1.1000e-004**		**1.3800e-003**	**1.3800e-003**		**1.3800e-003**	**1.3800e-003**	**0.0000**	**19.7585**	**19.7585**	**3.8000e-004**	**3.6000e-004**	**19.8787**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Junior High School	227800	126.8758	3.0000e-003	6.2000e-004	127.1310
Total		**126.8758**	**3.0000e-003**	**6.2000e-004**	**127.1310**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Junior High School	227800	126.8758	3.0000e-003	6.2000e-004	127.1310
Total		**126.8758**	**3.0000e-003**	**6.2000e-004**	**127.1310**

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	0.1623	1.0000e-005	8.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6400e-003	1.6400e-003	0.0000	0.0000	1.7300e-003
Unmitigated	0.1623	1.0000e-005	8.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6400e-003	1.6400e-003	0.0000	0.0000	1.7300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0394					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1229					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6400e-003	1.6400e-003	0.0000	0.0000	1.7300e-003
Total	**0.1623**	**1.0000e-005**	**8.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.6400e-003**	**1.6400e-003**	**0.0000**	**0.0000**	**1.7300e-003**

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					
Consumer Products	0.1229					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6400e-003	1.6400e-003	0.0000	0.0000	1.7300e-003
Architectural Coating	0.0394					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1623**	**1.0000e-005**	**8.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.6400e-003**	**1.6400e-003**	**0.0000**	**0.0000**	**1.7300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.7570	5.3000e-003	1.4000e-004	3.9120
Unmitigated	3.7570	5.3000e-003	1.4000e-004	3.9121

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Junior High School	0.16 / 0.411428	3.7570	5.3000e-003	1.4000e-004	3.9121
Total		**3.7570**	**5.3000e-003**	**1.4000e-004**	**3.9121**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Junior High School	0.16 / 0.411428	3.7570	5.3000e-003	1.4000e-004	3.9120
Total		**3.7570**	**5.3000e-003**	**1.4000e-004**	**3.9120**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.4440	0.1444	0.0000	5.4772
Unmitigated	2.4440	0.1444	0.0000	5.4772

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Junior High School	12.04	2.4440	0.1444	0.0000	5.4772
Total		**2.4440**	**0.1444**	**0.0000**	**5.4772**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Junior High School	12.04	2.4440	0.1444	0.0000	5.4772
Total		**2.4440**	**0.1444**	**0.0000**	**5.4772**

9.0 Operational Offroad

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

10.0 Vegetation

BAY AREA AQMD SIMPLIFIED CALINE4 ANALYSIS; UPDATED WITH EMFAC2007

Project Title:	MORCS Charter School
Intersection:	1577 South Berendo Street, Los Angeles
Analysis Condition:	Future w/Project
Nearest Air Monitoring Station measuring CO:	Wilshire Blvd at Sawtelle Blvd, Los Angeles, CA
Background 1-hour CO Concentration (ppm):	2.0
Background 8-hour CO Concentration (ppm):	1.4
Persistence Factor:	0.7
Analysis Year:	2015

				Approach/Departure Speed	
		Roadway Type	No. of Lanes	A.M.	P.M.
North-South Roadway:	Vermont Ave	AT GRADE	4	5	5
East-West Roadway:	Olympic Blvd	AT GRADE	4	5	5

EMFAC2007 COMPOSITE EMISSION FACTORS FOR CO

Air Basin: South Coast County: LosAngeles
Assumes lowest mean wintertime temperature of 47 degrees F and 52% humidity.

	Average Speed (miles per hour)									
Year	5	8	11	14	17	20	23	26	29	32
2010	6.419	5.647	5.034	4.542	4.142	3.818	3.553	3.333	3.15	3
2011	5.798	5.116	4.572	4.134	3.777	3.487	3.249	3.051	2.886	2.749
2012	5.251	4.645	4.161	3.77	3.451	3.19	2.976	2.797	2.647	2.522
2013	4.757	4.22	3.79	3.44	3.154	2.92	2.728	2.566	2.43	2.316
2014	4.323	3.844	3.46	3.146	2.889	2.679	2.505	2.359	2.235	2.13
2015	3.937	3.51	3.165	2.883	2.651	2.461	2.305	2.172	2.059	1.963
2020	2.646	2.387	2.174	1.997	1.85	1.728	1.627	1.539	1.464	1.398
2025	1.949	1.77	1.621	1.496	1.392	1.306	1.233	1.17	1.115	1.067
2030	1.615	1.471	1.35	1.248	1.163	1.093	1.034	0.983	0.937	0.898
2035	1.403	1.276	1.17	1.081	1.007	0.946	0.896	0.852	0.813	0.779
2040	1.283	1.164	1.065	0.982	0.913	0.858	0.813	0.773	0.738	0.706

PEAK HOUR TURNING VOLUMES

AM Peak

		N			
		136	1,231	138	
W		<	v	>	E
107 ^				^	62
1,617 >				<	1,398
132 v				v	64
		<	^	>	
		132	1,317	69	
		S			

PM Peak

		N			
		145	1,030	133	
W		<	v	>	E
200 ^				^	124
1,775 >				<	1,339
112 v				v	83
		<	^	>	
		157	1,237	87	
		S			

Representative Traffic Volumes (Vehicles per Hour)

	AM		PM
N-S Road	2,991	N-S Road	2,869
E-W Road	3,522	E-W Road	3,728
Primary Road =	E-W Road	Primary Road =	E-W Road

ROADWAY CO CONTRIBUTIONS

	Reference CO Concentrations				Traffic		Emission		
Roadway	0 Feet	25 Feet	50 Feet		Volume		Factor		
A.M. Peak Hour									
N-S Road	3.3	2.6	2.2	*	2,991	*	3.94	÷	100,000
E-W Road	11.9	7.0	5.4	*	3,522	*	3.94	÷	100,000
P.M. Peak Hour									
N-S Road	3.3	2.6	2.2	*	2,869	*	3.94	÷	100,000
E-W Road	11.9	7.0	5.4	*	3,728	*	3.94	÷	100,000

TOTAL CO CONCENTRATIONS (ppm)

	AM Peak Hour	PM Peak Hour	8-Hour
0 Feet from Roadway Edge	4.0	4.1	2.9
25 Feet from Roadway Edge	3.3	3.3	2.3
50 Feet from Roadway Edge	3.0	3.0	2.1

APPENDIX B

Geotechnical Study

Converse Consultants

Geotechnical Engineering, Environmental & Groundwater Science, Inspection & Testing Services

GEOSEISMIC/GEOTECHNICAL STUDY REPORT
Proposed Two-Story School Facilities Project
Monsenor Oscar Romero Charter School

1157 South Berendo Street
Los Angeles, California

Converse Project No. 13-31-194-01

February 21, 2014

PREPARED FOR

Pacific Charter School Development, Inc.
316 West 2nd Street, Suite 900
Los Angeles, CA 90012

222 East Huntington Drive, Suite 211, Monrovia, California 91016-3500
Telephone: (626) 930-1200 ♦ Facsimile: (626) 930-1212 ♦ e-mail: converse@converseconsultants.com

February 21, 2014

Ms. Hope Fang
Pacific Charter School Development, Inc.
316 West 2nd Street, Suite 900
Los Angeles, CA 90012

Subject: **GEOSEISMIC/GEOTECHNICAL STUDY REPORT**
Proposed Two-Story Facilities Project
Monsenor Oscar Romero Charter School (MORCS)
1157 South Berendo Street
Youth Policy Institute (YPI) Charter Schools and Pacific Charter School Development (PCSD)
Los Angeles, California
Converse Project No. 13-31-194-01

Dear Ms. Fang,

Converse Consultants (Converse) is pleased to present this Geoseismic/Geotechnical Study Report for the Proposed New Two-Story School Facilities Project in Monsenor Oscar Romero Charter School (MORCS) located at 1157 South Berendo Street in Los Angeles, California. The purpose of the study will be to generate a report for a school construction, consistent with the current edition of California Building Code (CBC), Title 24, Chapter 16; Structural Design, Chapter 18A, Soils and Foundations; Appendix Chapter 33, Excavation and Grading; Part 1; Section 4-317 (e), California Administrative Code (CAC) and the California Department of Education (CDE), and California Geological Survey (CGS) Note 48-Checklist for the review of Geologic/Seismic Reports for California Public Schools, Hospitals and Essential Services Buildings. Our services were performed in accordance with our proposal dated June 12, 2013.

Based on our field exploration, laboratory testing, geologic evaluation and geotechnical analysis, the site is suitable from a geotechnical standpoint for the proposed project, provided our conclusions and recommendations are implemented during design and construction.

We appreciate the opportunity to be of service to Pacific Charter School Development, Inc. If you should have any questions, please do not hesitate to contact us at (626) 930-1200.

CONVERSE CONSULTANTS

William H. Chu, P.E., G.E.
Senior Vice President/Principal Engineer

Dist: 4/Addressee

MDR/SCL/WHC/amm

PROFESSIONAL CERTIFICATION

This report for the Proposed Two-Story School Facilities Project in Monsenor Oscar Romero Charter School (MORCS) located at 1157 South Berendo Street in Los Angeles, California has been prepared by the staff of Converse under the professional supervision of the individuals whose seals and signatures appear hereon.

The findings, recommendations, specifications or professional opinions contained in this report were prepared in accordance with generally accepted professional engineering and engineering geologic principles and practice in this area of Southern California. There is no warranty, either expressed or implied.

In the event that changes to the property occur, or additional, relevant information about the property is brought to our attention, the conclusions contained in this report may not be valid unless these changes and additional relevant information are reviewed and the recommendations of this report are modified or verified in writing.

Mark B. Schluter, P.G., C.E.G.
Senior Geologist

PROFESSIONAL GEOLOGIST
MARK B. SCHLUTER
No. 1415
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

William H. Chu, G.E.
Principal Engineer, Senior Vice President

REGISTERED PROFESSIONAL ENGINEER
CHU HSUEH-HSIN WILLIAM
No. 2482
Exp. 6/30/14
GEOTECHNICAL
STATE OF CALIFORNIA

EXECUTIVE SUMMARY

The following is the summary of our geotechnical study, findings, conclusions, and recommendations, as presented in the body of this report. Please refer to the appropriate sections of the report for complete conclusions and recommendations. In the event of a conflict between this summary and the report, or an omission in the summary, the report shall prevail.

- The project site is located on the northeastern portion of the the existing Berendo Middle School. The proposed development consists of construction of a new two-story school facility with about 32,000 square feet on an existing 85,000 square feet site with two-story classrooms, administration, subterranean parking garage, lunch shelter, multipurpose room and playfield.
- Ten (10) exploratory borings (BH-1 through BH-10) were drilled within the project site on July 30 and August 2, 2013. The borings were advanced using a truck mounted 8-inch diameter hollow stem auger drill rig to depths ranging from 11.5 to 51.5 feet below the existing ground surface (bgs).
- The earth materials encountered during our investigation consist of existing fill soils placed during previous site grading and/or demolition operations and native alluvial soils. The fill soils encountered are described as clayey sand, sandy clay, and sand with silt. Thicker fill may be encountered in the other areas of the site. Alluvial soils below the fill consist of clayey sand, sandy clay, silty sand and sandy silt.
- Groundwater was not encountered in our exploratory borings to a maximum depth of 51.5 feet. Groundwater is not anticipated during construction and will not need to be considered in design.
- The project site is not located within a currently designated State of California Earthquake Fault Zone (formerly Alquist-Priolo Special Studies Zones) for surface fault rupture. No surface faults are known to project through or towards the site.
- Based on the results of our liquefaction analyses, the site is not considered susceptible to liquefaction.
- The proposed at-grade buildings should be supported on conventional spread footings bearing into compacted fill. The proposed building with subterranean garage should be supported on native soils.
- The on-site soil is not considered corrosive to concrete.
- The on-site soil is considered corrosive to ferrous metal. Protections of underground metal pipe should be considered.

- Undocumented fills were encountered up to 2 to 10 feet in depth across the site. These fills and disturbed soils are not suitable for foundation support and require remedial grading.
- Soil can be excavated with conventional heavy-duty earthmoving equipments.
- The onsite soils have “Medium” expansive potential which requires mitigation.

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TABLES

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DRAWINGS

Following Page No.

APPENDICES

1.0 INTRODUCTION

This report contains the findings and recommendations of our geoseismic/geotechnical study performed for the proposed two-story school facility project in Monsenor Oscar Romero Charter School (MORCS) located at 1157 South Berendo Street in Los Angeles, California. The project site is shown on Drawing No. 1, *Site Location Map*. The purpose of this study was to evaluate the subsurface soil conditions and provide geotechnical recommendations and design recommendations for the design and construction of the proposed project, including current standard of practice seismic and geotechnical engineering interpretations.

This report for geologic and geotechnical design parameters for the project described herein and is intended for use solely by the Pacific Charter School Development, Inc. and their design team. This report should not be used as a bidding document but may be made available to the potential contractors for information on faculty data only. For bidding purposes, the contractors should be responsible for making their own interpretation of the data contained in this report.

2.0 SITE AND PROJECT DESCRIPTION

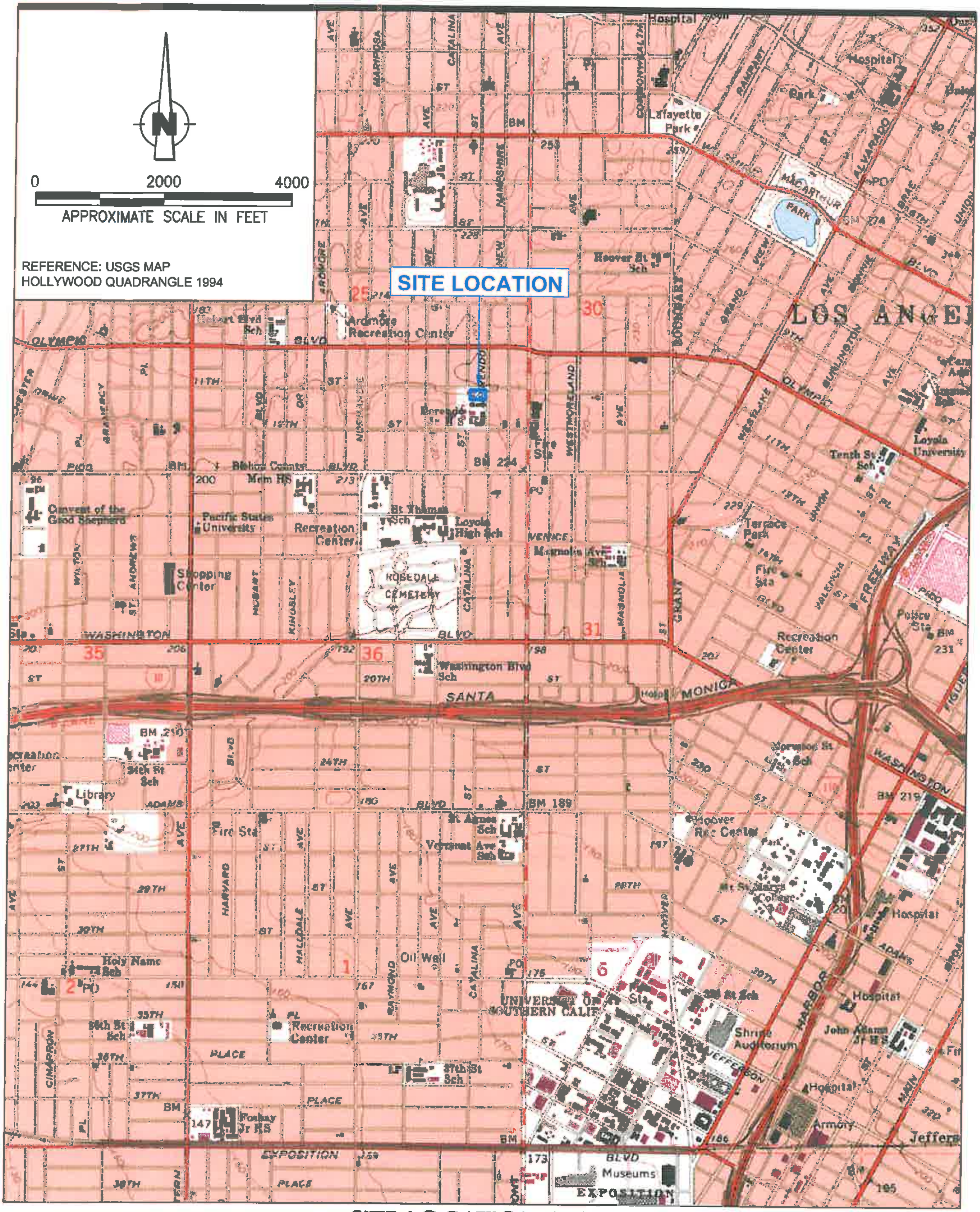
2.1 Site Description

The project site is located on the northeastern portion of the the existing Berendo Middle School. The ground surface is relatively flat and the ground elevation is approximate 210 feet above Mean Sea Level (MSL). The coordinates for the project site are: North latitude: 34.0505 degrees and West longitude: 118.2942 degrees. The project site is depicted on Drawing No. 2, *Site Plan and Boring Locations*.

The proposed development consists of construction of a new two-story school facility with about 32,000 square feet on an 85,000 square feet site with two-story classrooms, administration, subterranean parking garage, lunch shelter, multipurpose room and playfield. The subterranean parking garage will be about 10 feet below the existing ground surface.

3.0 SCOPE OF WORK

The scope of our present study includes site reconnaissance, subsurface exploration, soil sampling, laboratory testing, engineering analysis, and preparation of this report. Details of the tasks are addressed in the following sections:

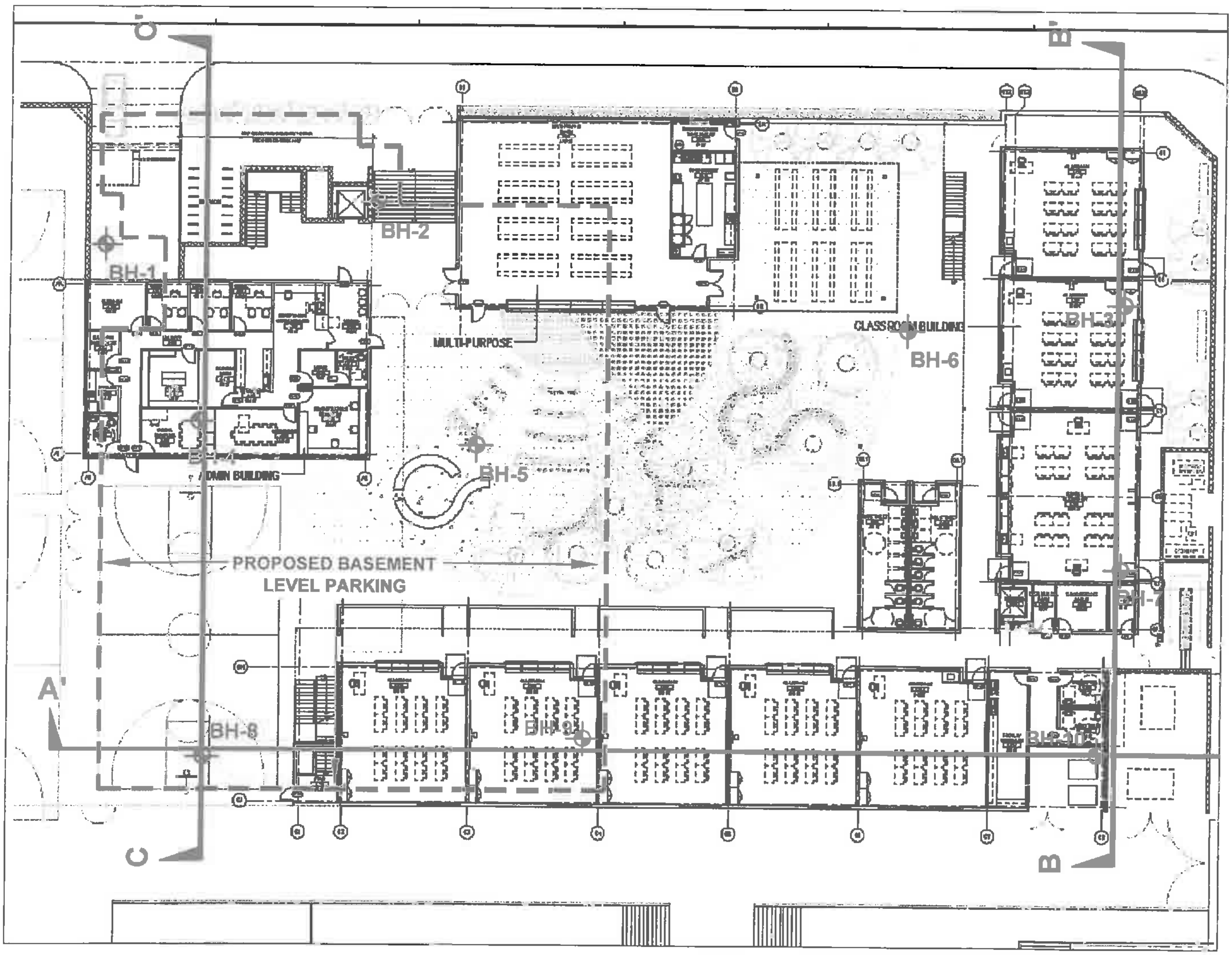


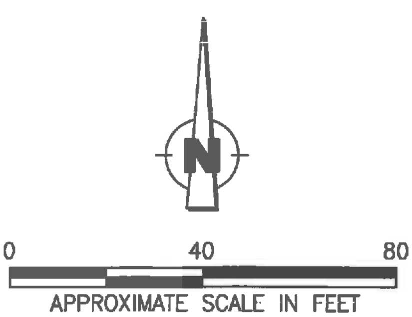
SITE LOCATION MAP

Converse Consultants

PROPOSED NEW TWO-STORY FACILITIES
MONSENOR OSCAR ROMERO CHARTER SCHOOL (MORCS)
1157 SOUTH BERENDO STREET, LOS ANGELES, CALIFORNIA
FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No.	Drawing No.
13-31-194-01	1





LEGEND

APPROXIMATE LOCATION OF BORING

GEOLOGIC CROSS SECTION

SITE PLAN AND BORING LOCATIONS

Converse Consultants	PROPOSED NEW TWO-STORY FACILITIES MONSENOR OSCAR ROMERO CHARTER SCHOOL (MORCS) 1157 SOUTH BERENDO STREET, LOS ANGELES, CALIFORNIA FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.	Project No. 13-31-194-01	Drawing No. 2

3.1 Site Reconnaissance

A Converse engineer conducted a site reconnaissance on July 24, 2013. The purpose of the reconnaissance was to evaluate site conditions with respect to the location of the borings and drill rig accessibility.

3.2 Subsurface Exploration and Percolation Testing

Ten (10) exploratory borings (BH-1 through BH-10) were drilled within the project site on July 30 and August 2, 2013. The borings were advanced using a truck mounted 8-inch diameter hollow stem auger drill rig to depths ranging from 11.5 to 51.5 feet below the existing ground surface (bgs). Every boring was visually logged by a Converse engineer and sampled at regular intervals and at changes in subsurface soils. The Boring locations are shown on Drawing No. 2, *Site Plan and Boring Locations*. Detailed descriptions of the field exploration and sampling program are presented in Appendix A, *Field Exploration*.

California Modified Sampler (Ring samples), Standard Penetration Test samples, and bulk soil samples were obtained for laboratory testing. Standard Penetration Tests (SPTs) were performed in selected borings at selected intervals using a standard (1.4 inches inside diameter and 2.0 inches outside diameter) split-barrel sampler. The bore holes were backfilled and compacted with soil cuttings by reverse spinning of the auger following the completion of drilling and patched with asphalt.

Borings BH-6 and BH-8 were utilized for percolation tests prior to backfill. Percolation test procedures and test results are further discussed in Appendix C, *Percolation Testing*.

3.3 Laboratory Testing

Representative samples of the site soils were tested in the laboratory to aid in the classification and to evaluate relevant engineering properties. The tests performed included:

- *In situ* moisture contents and dry densities (ASTM Standard D2216)
- Grain-Size Analysis (ASTM D422)
- Maximum dry density and optimum-moisture content relationship (ASTM Standard D1557)
- Passing sieve no.200 (ASTM D1140)
- Direct shear (ASTM Standard D3080)
- Consolidation (ASTM Standard D2435)
- Expansion Index (ASTM D4829)
- R-value (ASTM D2844)
- Soil corrosivity tests (Caltrans 643, 422, 417 and 532)

Detailed description of the laboratory test methods and test results are presented in Appendix B, *Laboratory Testing Program*.

3.4 Analyses and Report

Data obtained from the exploratory fieldwork and laboratory-testing program were analyzed and evaluated with respect to the planned construction. This report was prepared to provide the findings, conclusions and recommendations developed during our study and evaluation.

4.0 SUBSURFACE CONDITIONS

4.1 Regional Geologic Settings

The project site is located within the central portion of the Los Angeles Basin and underlain by alluvial soils. Drawing No. 3, *Regional Geologic Map*, based on the Seismic Hazard Zone Report for the Hollywood 7.5 Minute Quadrangles (CDMG, 1998), has been prepared to show the location of the project site with respect to the regional geology.

4.2 Subsurface Soil Profile of Project Site

The earth materials encountered during our investigation consist of existing fill soils placed during previous site grading and/or demolition operations and native alluvial soils. Based on our field exploration, approximate two (2) to ten (10) feet of undocumented fill or disturbed soils were encountered in our borings across the site. Thicker undocumented fill soils may be encountered on the site and should be anticipated during grading. The fill soils encountered are described as clayey sand, sandy clay, and sand with silt. Thicker fill may be encountered in the other areas of the site. Alluvial soils below the fill consist of clayey sand, sandy clay, silty sand and sandy silt to a maximum depth of 51.5 feet below ground surface (bgs). The alluvial soils are generally medium dense to dense.

Drawing No. 4a, 4b and 4c Geologic Cross Sections A-A', B-B' and C-C' are prepared to illustrate the subsurface soil profiles at the site. Detailed description of the materials encountered in each boring is presented in Appendix A, *Field Exploration*.

4.3 Groundwater

Groundwater was not encountered in our exploratory borings to a maximum depth of 51.5 feet. In accordance with the Seismic Hazard Zone Report for the Hollywood 7.5-Minute Quadrangle, Los Angeles County, California (CDMG, 1998), the historically highest

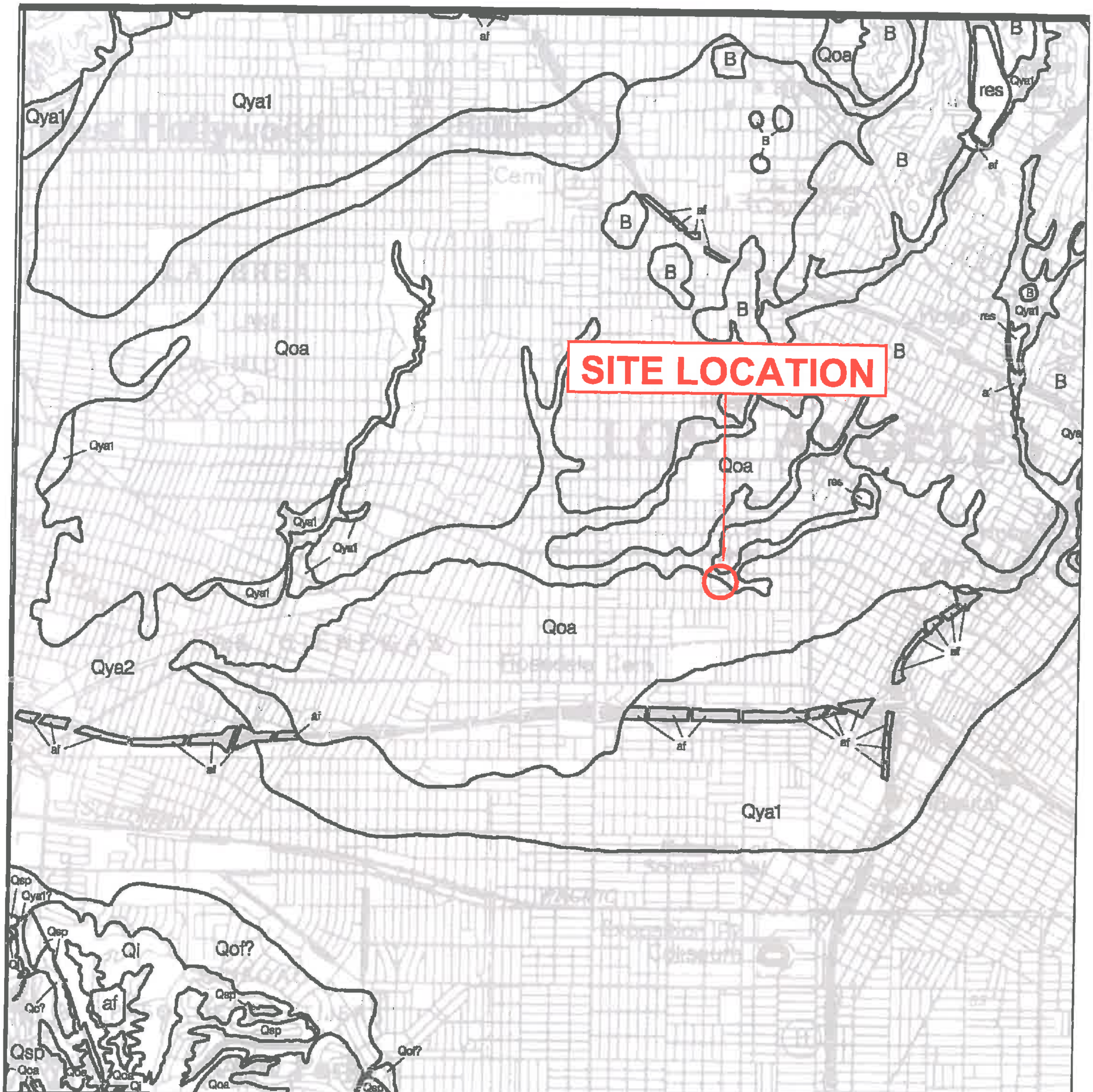


Plate 1.1 Quaternary Geologic Map of the Hollywood Quadrangle.
See Geologic Conditions section in report for descriptions of the units.
B = Pre-Quaternary bedrock. res = Reservoir

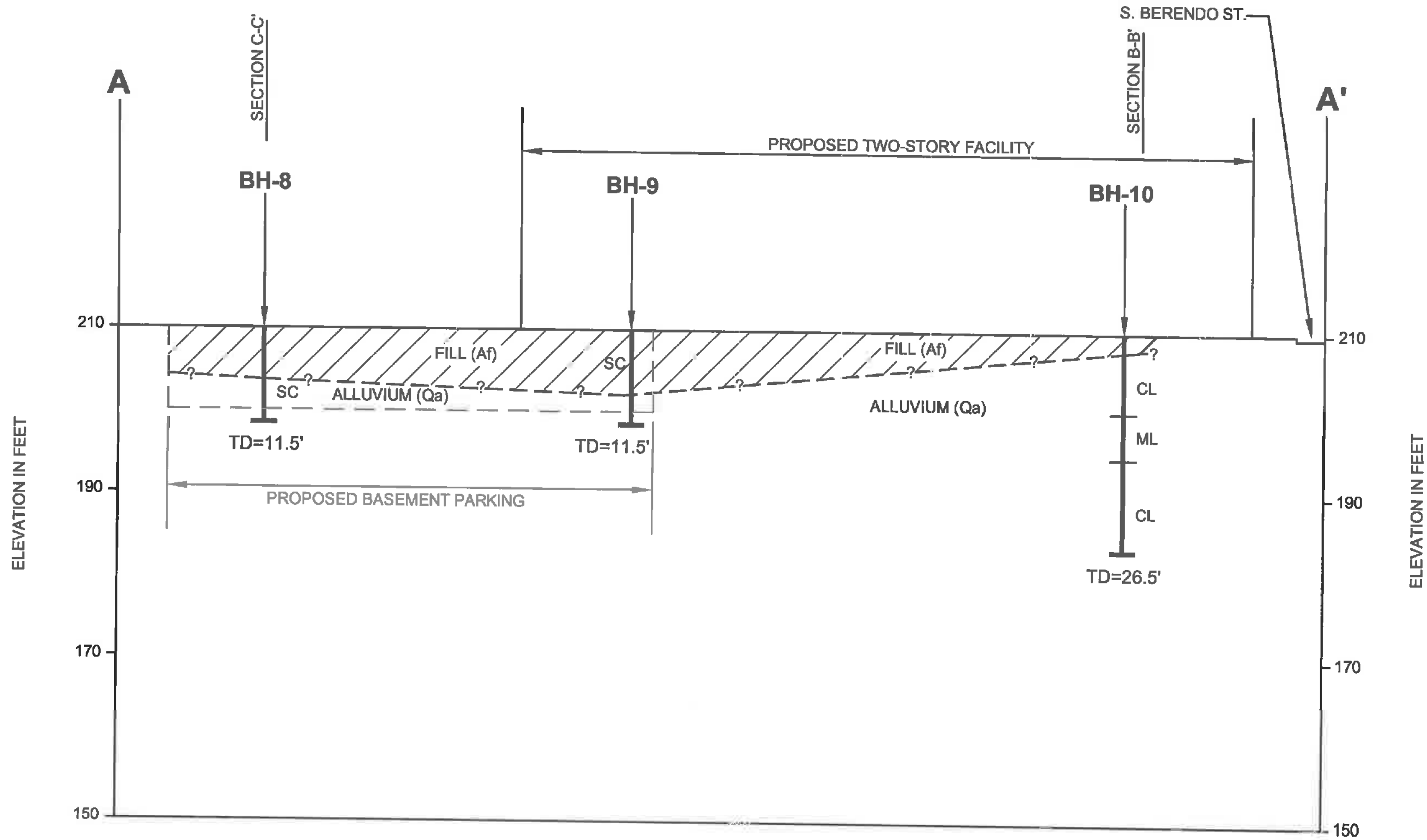
ONE MILE
SCALE

REGIONAL GEOLOGIC MAP

Converse Consultants

PROPOSED NEW TWO-STORY FACILITIES
MONSENOR OSCAR ROMERO CHARTER SCHOOL (MORCS)
1157 SOUTH BERENDO STREET, LOS ANGELES, CALIFORNIA
FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No.	Drawing No.
13-31-194-01	3



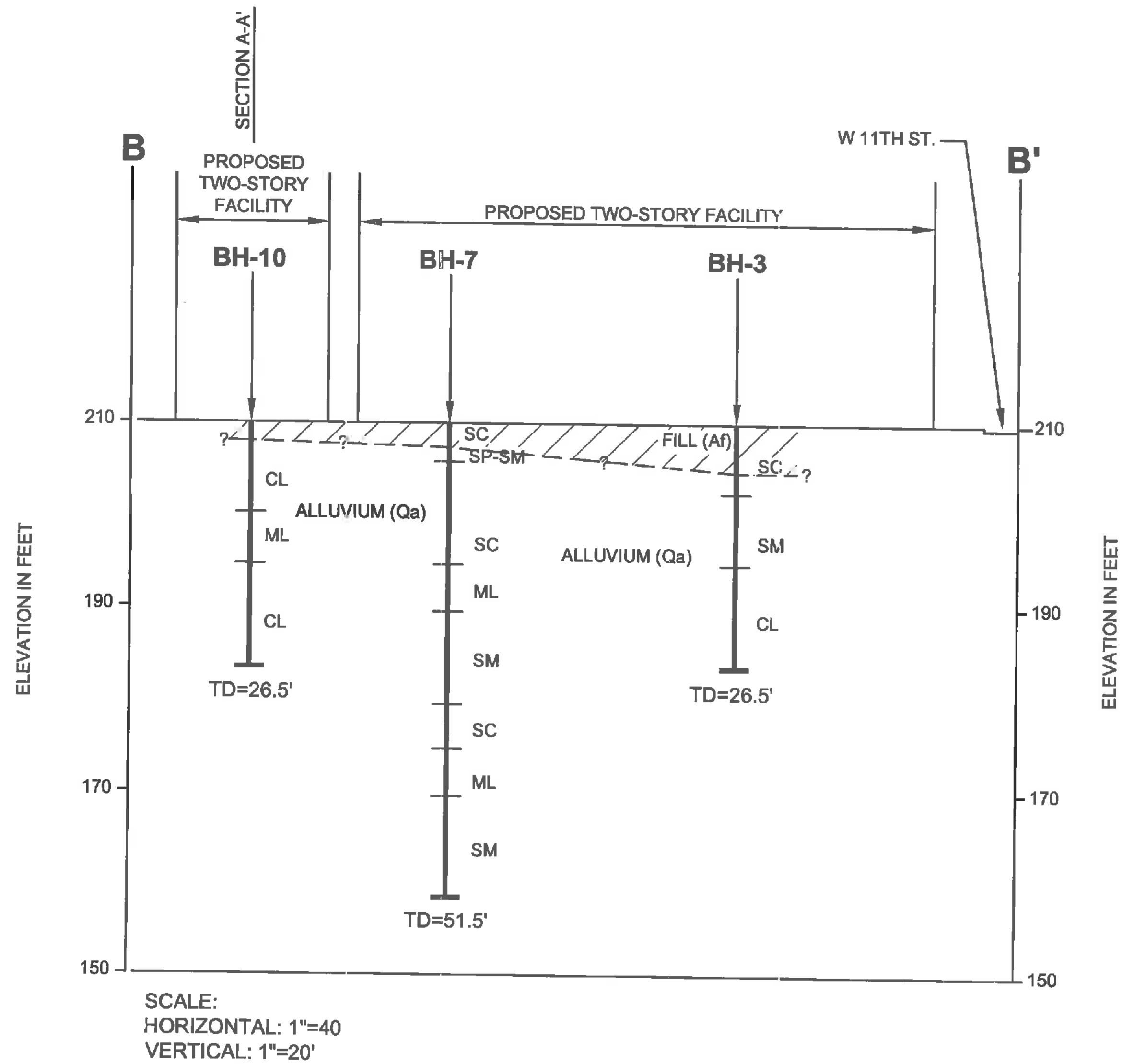
SCALE:
HORIZONTAL: 1"=40
VERTICAL: 1"=20'

GEOLOGIC CROSS SECTION A-A'

Converse Consultants

PROPOSED NEW TWO-STORY FACILITIES
MONSENOR OSCAR ROMERO CHARTER SCHOOL (MORCS)
1157 SOUTH BERENDO STREET, LOS ANGELES, CALIFORNIA
FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No.	Drawing No.
13-31-194-01	4a

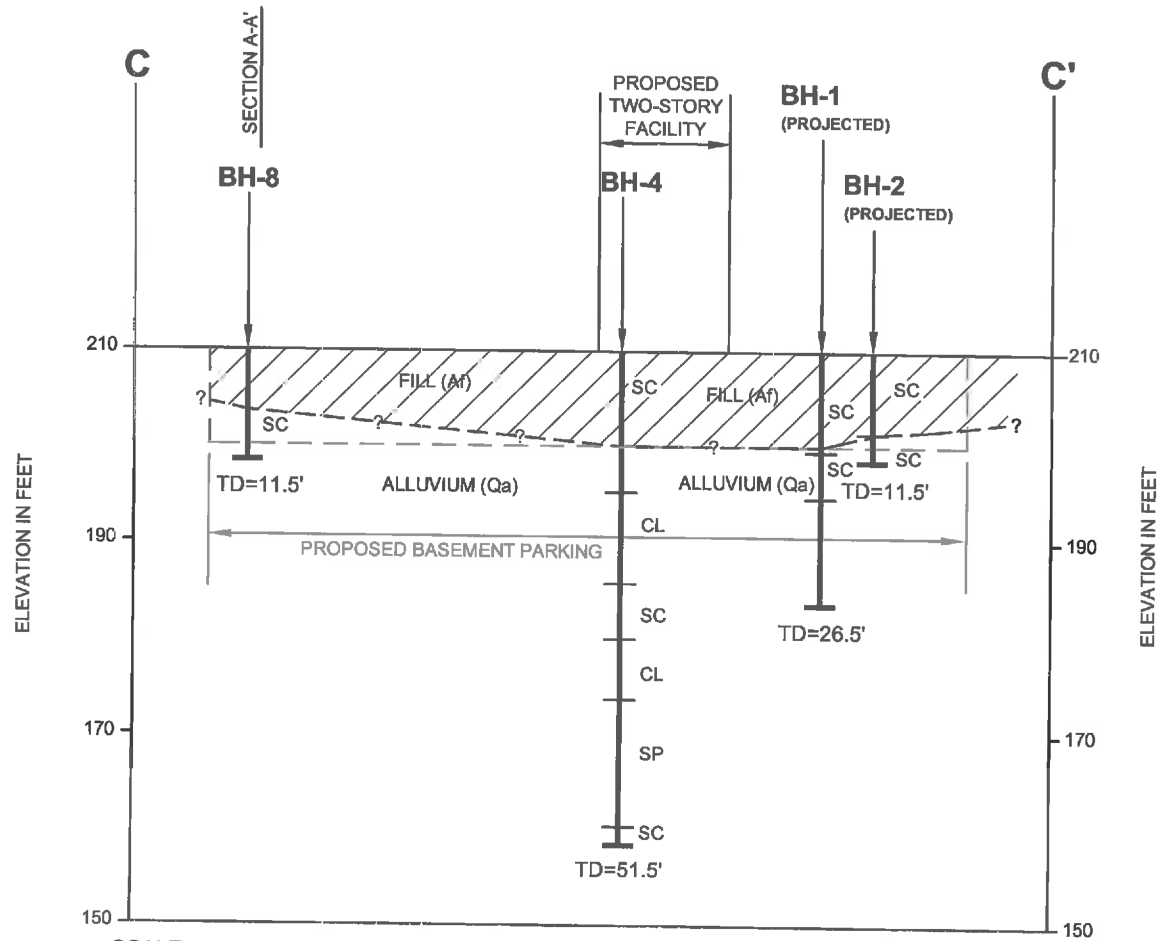


GEOLOGIC CROSS SECTION B-B′

Converse Consultants

PROPOSED NEW TWO-STORY FACILITIES
MONSENOR OSCAR ROMERO CHARTER SCHOOL (MORCS)
1157 SOUTH BERENDO STREET, LOS ANGELES, CALIFORNIA
FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No.	Drawing No.
13-31-194-01	4b



SCALE:
HORIZONTAL: 1"=40
VERTICAL: 1"=20'

GEOLOGIC CROSS SECTION C-C'

Converse Consultants

PROPOSED NEW TWO-STORY FACILITIES
MONSENOR OSCAR ROMERO CHARTER SCHOOL (MORCS)
1157 SOUTH BERENDO STREET, LOS ANGELES, CALIFORNIA
FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No. 13-31-194-01

Drawing No. 4c

groundwater level is reportedly deeper than 50 feet. Groundwater is not anticipated during construction and will not need to be considered in design.

4.4 Subsurface Variations

Based on results of the subsurface exploration and our experience, some variations in the continuity and nature of subsurface conditions within the project site should be anticipated. Because of the uncertainties involved in the nature and geologic characteristics of the earth material at the site, care should be exercised in interpolating or extrapolating subsurface conditions between or beyond the boring locations. If during construction, subsurface conditions differ significantly from those presented in this report; this office should be notified immediately so that recommendations can be modified, if necessary.

5.0 FAULTING AND GEOLOGIC HAZARDS

Geologic hazards are defined as geologically related conditions that may present a potential danger to life and property. Typical geologic hazards in Southern California include earthquake ground shaking, fault surface rupture, landslides, and liquefaction.

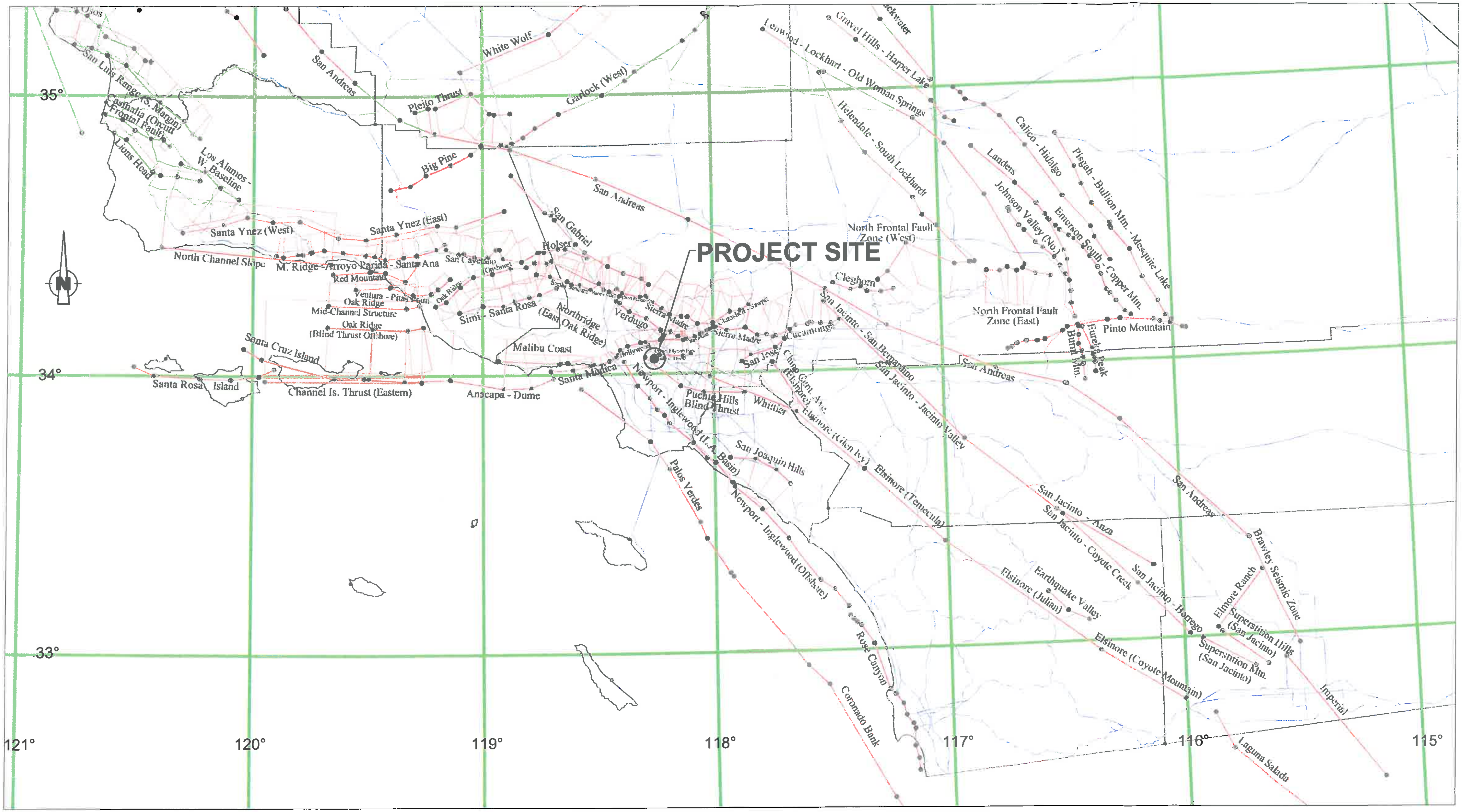
5.1 Fault Surface Rupture and Active Faults

The project site is not located within a currently designated State of California Earthquake Fault Zone (formerly Alquist-Priolo Special Studies Zones) for surface fault rupture. No surface faults are known to project through or towards the site. The nearest capable fault with a mappable surface trace is the Hollywood fault system located approximately 6.2 km (3.8 miles) away from the site to the north. The approximate locations of regional faults with respect to the project site are shown on Drawing No. 5, *Southern California Regional Fault Map*.

5.2 Historical Seismicity

We have reviewed California Geologic Survey Map Sheet 49, *Epicenters and Areas Damaged by M ≥ 5 California Earthquakes,* 1800-1999, (CGS, Toppozada et al., 2000). The mapped epicenters of earthquake with magnitude 5.0 or greater in Southern California during the past 200 years are shown on Drawing No. 6, *Epicenters Map of Southern California Earthquakes (1800-1999).*

An assessment of the recent seismic events in proximity to the project was performed using data provided in the Southern California Earthquake Center (SCEC) and the Consortium of Organizations for Strong-Motion Observation Systems (COSMOS) databases. Strong-motion stations within 5 km of the project site with similar subsurface



REFERENCE: PORTION OF CGS 2002 CALIFORNIA FAULT MODEL MODIFIED FOR USE WITH FRISKSP AND EQFAULT BY THOMAS F. BLAKE, AUGUST 2004

FAULT SOURCES

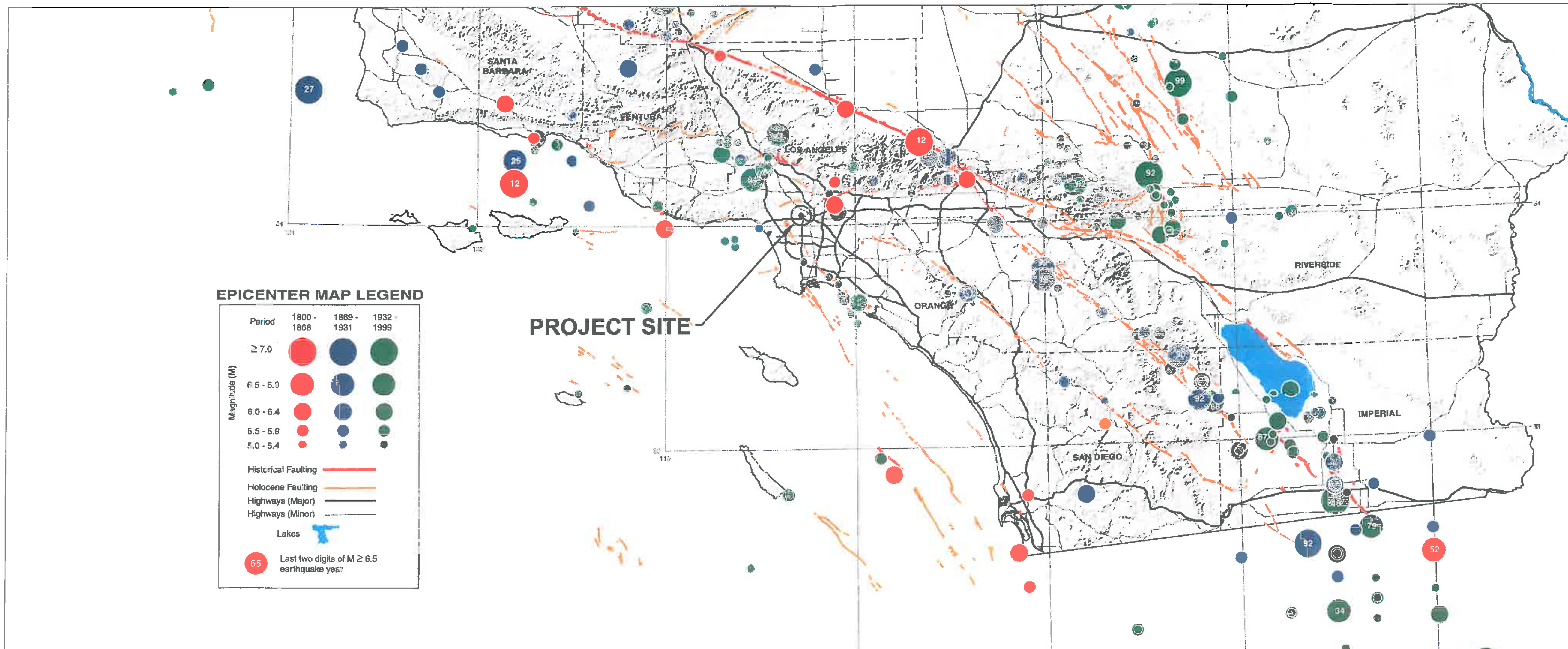
BLIND THRUST FAULT, POLYGONS INDICATE RUPTURE PLANES AND DIP DIRECTION

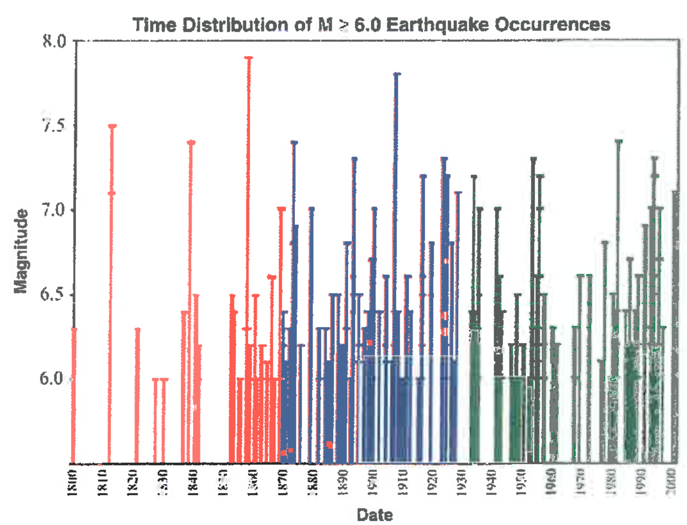
SOUTHERN CALIFORNIA REGIONAL FAULT MAP

Converse Consultants

PROPOSED NEW TWO-STORY FACILITIES
MONSENOR OSCAR ROMERO CHARTER SCHOOL (MORCS)
1157 SOUTH BERENDO STREET, LOS ANGELES, CALIFORNIA
FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No.	Drawing No.
13-31-194-01	5





Main Sources of Information

Bolt, B.A. and Miller, R.D. (1975). Catalogue of earthquakes in northern California and adjoining areas, 1 January 1910 - 31 December 1972: Seismographic Stations, University of California, Berkeley, California, 567 p.

Caltech/USGS earthquake catalog, http://www.scecdc.scec.org/catalog-search.html. Southern California earthquake catalog and phase data, Southern California Seismic Network, U.S. Geological Survey, Pasadena; Caltech Seismological Laboratory, California Institute of Technology, Pasadena.

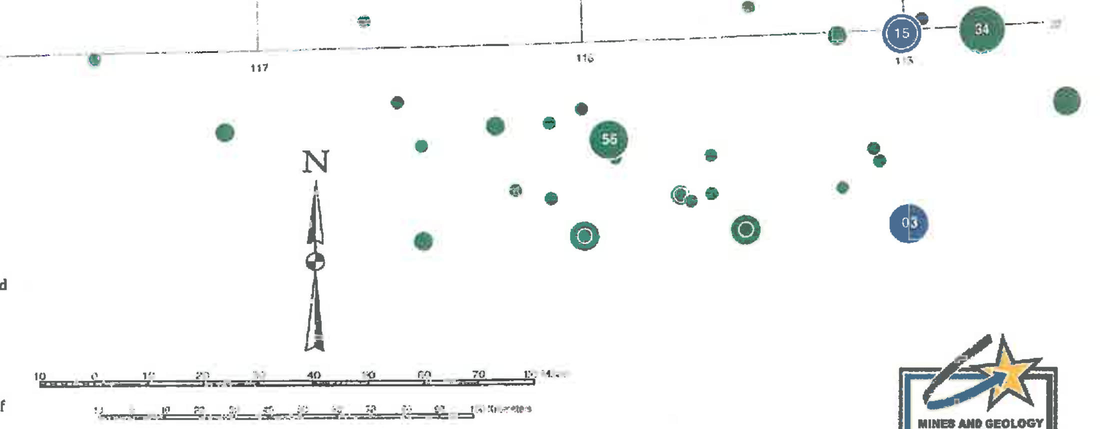
Toppozada, T.R. and Branum, D.M. (in press). California M ≥ 5.5 earthquakes, history and areas damaged, *in* Lee, W.H., Kanamori, H. and Jennings, P., International Handbook of Earthquake and Engineering Seismology, International Association of Seismology and Physics of the Earth's Interior.

Toppozada, T.R. and Parke, D.L. (1982). Areas damaged by California earthquakes, 1900-1949, California Division of Mines and Geology Open-File Report 82-17, 65 p.

Toppozada, T.R., Parke, D.L. and Higgins, C.T. (1978). Seismicity of California 1900-1931, California Division of Mines and Geology Open-File Report 135.

Toppozada, T.R., Real, C.R. and Parke, D.L. (1981). Preparation of isoseismal maps and summaries of reported effects for pre-1900 California earthquakes, California Division of Mines and Geology Open-File Report 81-11 SAC, 182 p.

UC Berkeley/USGS earthquake catalog, http://quake.geo.berkeley.edu/ncedc/catalog-search.html. Northern California earthquake catalog and phase data, Northern California Seismic Network, U.S. Geological Survey, Menlo Park; Berkeley Seismological Laboratory, University of California, Berkeley, California.



MINES AND GEOLOGY
CALIFORNIA CONSERVATION

REFERENCE: PORTION OF EPICENTERS AND AREAS DAMAGED BY M≥5 CALIFORNIA EARTHQUAKES, 1800-1999 CALIFORNIA DEPARTMENT OF CONSERVATION, MAP SHEET 49 DATED 2000.

EPICENTER MAP OF SOUTHERN CALIFORNIA EARTHQUAKES (1800-1999)

Converse Consultants

PROPOSED NEW TWO-STORY FACILITIES
MONSENOR OSCAR ROMERO CHARTER SCHOOL (MORCS)
1157 SOUTH BERENDO STREET, LOS ANGELES, CALIFORNIA
FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No.	Drawing No.
13-31-194-01	6

geology experienced peak horizontal ground accelerations below 0.20g during the 1994 Northridge earthquake.

5.3 Liquefaction and Seismic Settlement

Liquefaction is the sudden decrease in the strength of cohesionless soils due to dynamic or cyclic shaking. Saturated soils behave temporarily as a viscous fluid (liquefaction) and, consequently, lose their capacity to support the structures founded on them. The potential for liquefaction decreases with increasing clay and gravel content, but increases as the ground acceleration and duration of shaking increase. Liquefaction potential has been found to be the greatest where the groundwater level and loose sands occur within 50 feet of the ground surface. The site is not located within a mapped Seismic Hazard Zone for liquefaction (CDMG, 1998) as shown in Drawing No. 7, *Seismic Hazard Zones Map*.

Based on the results of our liquefaction analyses, the site is not considered susceptible to liquefaction. Based on our seismic settlement analyses presented in Appendix D, the estimated seismic dry-sand settlement is approximately 0.3 inches with differential settlement of 0.2 inch.

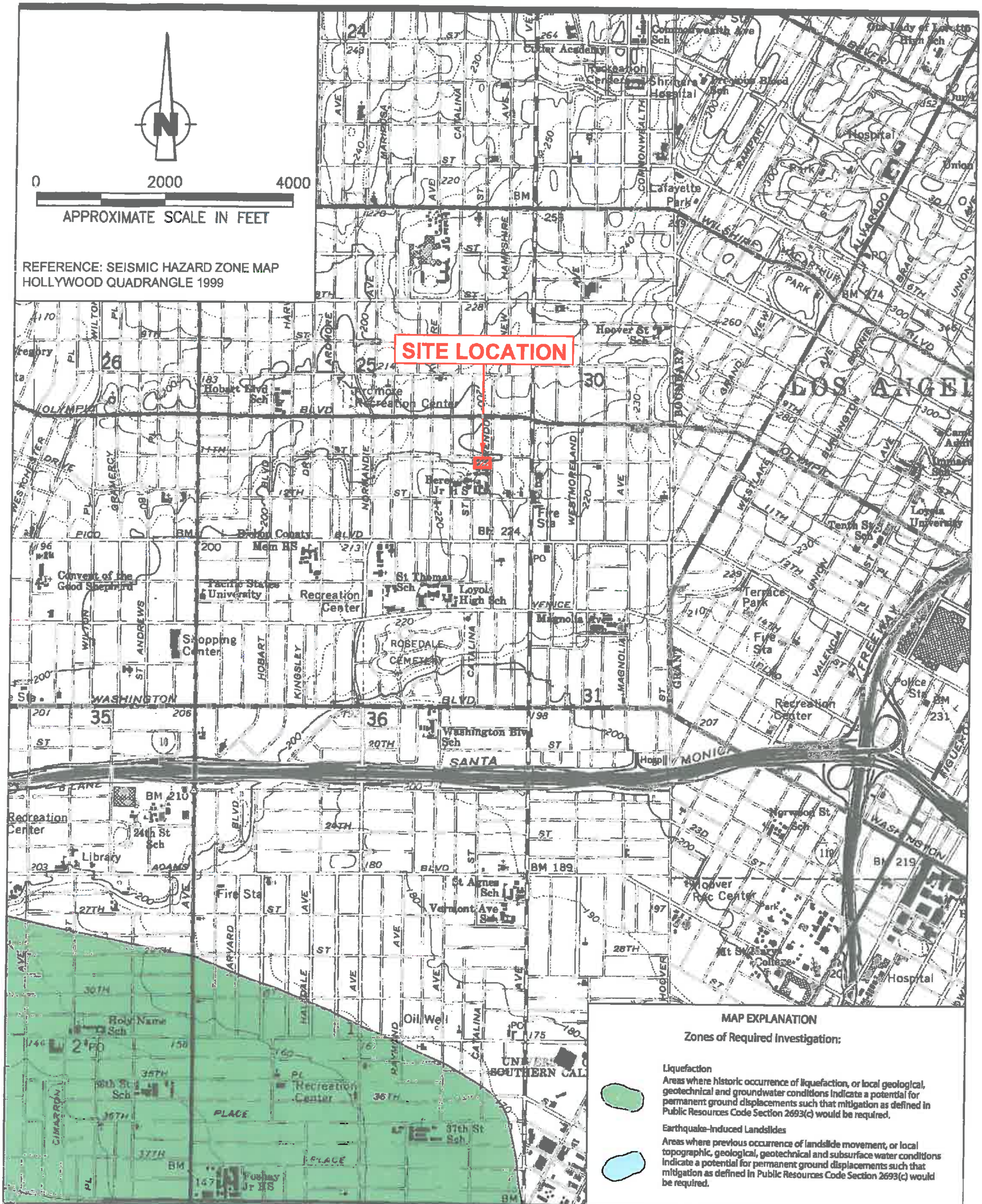
Lateral Spreading: Seismically induced lateral spreading involves primarily lateral movement of earth materials due to ground shaking. It differs from the slope failure in that complete ground failure involving large movement does not occur due to the relatively smaller gradient of the initial ground surface. Lateral spreading is demonstrated by near-vertical cracks with predominantly horizontal movement of the soil mass involved. The topography at the project site and in the immediate vicinity of the site is relatively flat, with no nearby descending slopes or embankments. Under these circumstances, the potential for lateral spreading at the subject site is considered negligible.

5.4 Landslides

The site is not located within a Seismic Hazard Zone for required investigation for earthquake-induced land sliding (CDMG, 1999). The project site is relatively flat and not located near any hillside terrain. In the absence of significant ground slopes, the potential for seismically induced landslides to affect the proposed site is considered to be nil.

5.5 Flooding and Inundation

***Flooding*:** Review of the FEMA Flood Insurance Rate Map (FIRM), Los Angeles County Map Number 06037C1620F, effective date September 26, 2008, indicates that the site is located within an area designated as Zone X, Other Flood Areas (described as area with a 0.2% annual chance flood; areas of 1% annual chance flood with



SEISMIC HAZARD ZONES MAP

Converse Consultants	PROPOSED NEW TWO-STORY FACILITIES MONSENOR OSCAR ROMERO CHARTER SCHOOL (MORCS) 1157 SOUTH BERENDO STREET, LOS ANGELES, CALIFORNIA FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.	Project No. 13-31-194-01	Drawing No. 7

average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood).

Tsunamis: Tsunamis are seismic sea waves generated by fault displacement or major ground movement. The site is located approximately 22 miles distant from the ocean. Review of the California Emergency management Agency – Tsunami Inundation Map for Emergency Planning (2009), indicates the site is not located within or adjacent to a tsunamis influence area. Tsunamis do not pose a hazard to the project.

Seiches: Seiches are large waves generated in enclosed bodies of water in response to ground shaking. Based on site location away from lakes and reservoirs, seiches do not appear to pose a hazard.

5.6 Methane Hazard

Based on review of available maps, the project site is not located within a methane hazard zone defined by the City of Los Angeles. Mitigation is not necessary.

6.0 SEISMIC ANALYSIS

6.1 CBC Seismic Design Parameters

Seismic parameters based on the 2010 California Building Code are calculated using the United States Geological Survey computer program *Seismic Hazards Curves, Response Parameters and Design Parameters, Version 5.1.0a.* In addition, we have calculated the seismic design parameter based on 2013 CBC utilizing the USGS on-line Seismic Design Maps. The seismic parameters are presented below.

Table No. 1, CBC Seismic Parameters

Seismic Parameters	2010 CBC	2013 CBC
Site Class	E	E
Mapped Short period (0.2-sec) Spectral Response Acceleration, S_S	1.994g	2.258g
Mapped 1-second Spectral Response Acceleration, S_1	0.677g	0.795g
Site Coefficient (from Table 1613.5.3(1)), F_a	0.9	0.9
Site Coefficient (from Table 1613.5.3(2)), F_v	2.4	2.4
MCE 0.2-sec period Spectral Response Acceleration, S_{MS}	1.795g	2.032g
MCE 1-second period Spectral Response Acceleration, S_{M1}	1.626g	1.908g
Design Spectral Response Acceleration for short period, S_{DS}	1.196g	1.355g
Design Spectral Response Acceleration for 1-second period, S_{D1}	1.084g	1.272g
Seismic Design Category	D	E

6.2 Site-Specific Ground Motion Response Spectrum

The project site is not located within a currently designated State of California Earthquake Fault Zones (formerly Alquist-Priolo Special Studies Zones) or fault zones designated in the Safety Element of a Local General Plan. However, based on 2013 CBC Section 1616A.1.3, a site-specific ground motion analysis is required. A site-specific response spectrum was developed for the project for a Maximum Considered Earthquake (MCE), defined as a horizontal peak ground acceleration that has a 2 percent probability of being exceeded in 50 years (return period of approximately 2,475 years).

In accordance with ASCE 7-10, Section 21.2 and Code Application Notice (CAN 2-1802A.6.2) the site-specific response spectra can be taken as the lesser of the probabilistic maximum rotated component of MCE ground motion and the 84th percentile of deterministic maximum rotated component of MCE ground motion response spectra. The design response spectra can be taken as 2/3 of site-specific MCE response spectra, but should not be lower than 80 percent of CBC general response spectra. The risk coefficient C_R has been incorporated at each spectral response period for which the acceleration was computed in accordance with ASCE 7-10, Section 21.2.1.1.

The 2013 CBC mapped acceleration parameters are provided in the following table. These parameters were determined using the United States Geological Survey *U.S. Seismic Design Maps* website application, and in accordance with ASCE 7-10 Sections 11.4, 11.6, 11.8 and 21.2.

Table No. 2, 2013 CBC Mapped Acceleration Parameters

Site Class	E	Seismic Design Category	E
S_s	2.258	C_{RS}	0.965
S_1	0.795	C_{R1}	0.981
F_a	0.9	$0.08\ F_v/F_a$	0.213
F_v	2.4	$0.4\ F_v/F_a$	1.067
S_{MS}	2.032	T_0	0.188
S_{M1}	1.908	T_S	0.939
S_{DS}	1.355	T_L	8
S_{D1}	1.272		

A Site-Specific response analysis, using faults within 100 kilometers of the site, was developed using the computer program EZ-FRISK by Risk Engineering (v. 7.62) and the 2008 USGS Fault Model database. Attenuation relationships proposed by Boore and Atkinson (2008), Campbell and Bozorgnia (2008), Chiou and Youngs (2008) were used in the analysis. These attenuation relationships are based on Next Generation Attenuation (NGA) project model. Maximum rotated components were determined using Huang (2008) method. An average shear wave velocity at upper 30 meters of soil profile (V_{s30}) of 180 meters per second, depth to bedrock of with a shear wave velocity 1,000 meters per second at 150 meters below grade, and depth of bedrock where the shear wave velocity is 2,500 meters per second at 3,000 meters below grade were selected for EZ-Frisk Analysis.

Applicable response spectra data are presented in the table below and on Drawing No. 8, *Site-Specific Design Response Spectrum.* These curves correspond to response values obtained from above attenuation relations for horizontal elastic single-degree-of-freedom systems with equivalent viscous damping of 5 percent of critical damping.

Table No. 3, Site-Specific Response Spectrum Data

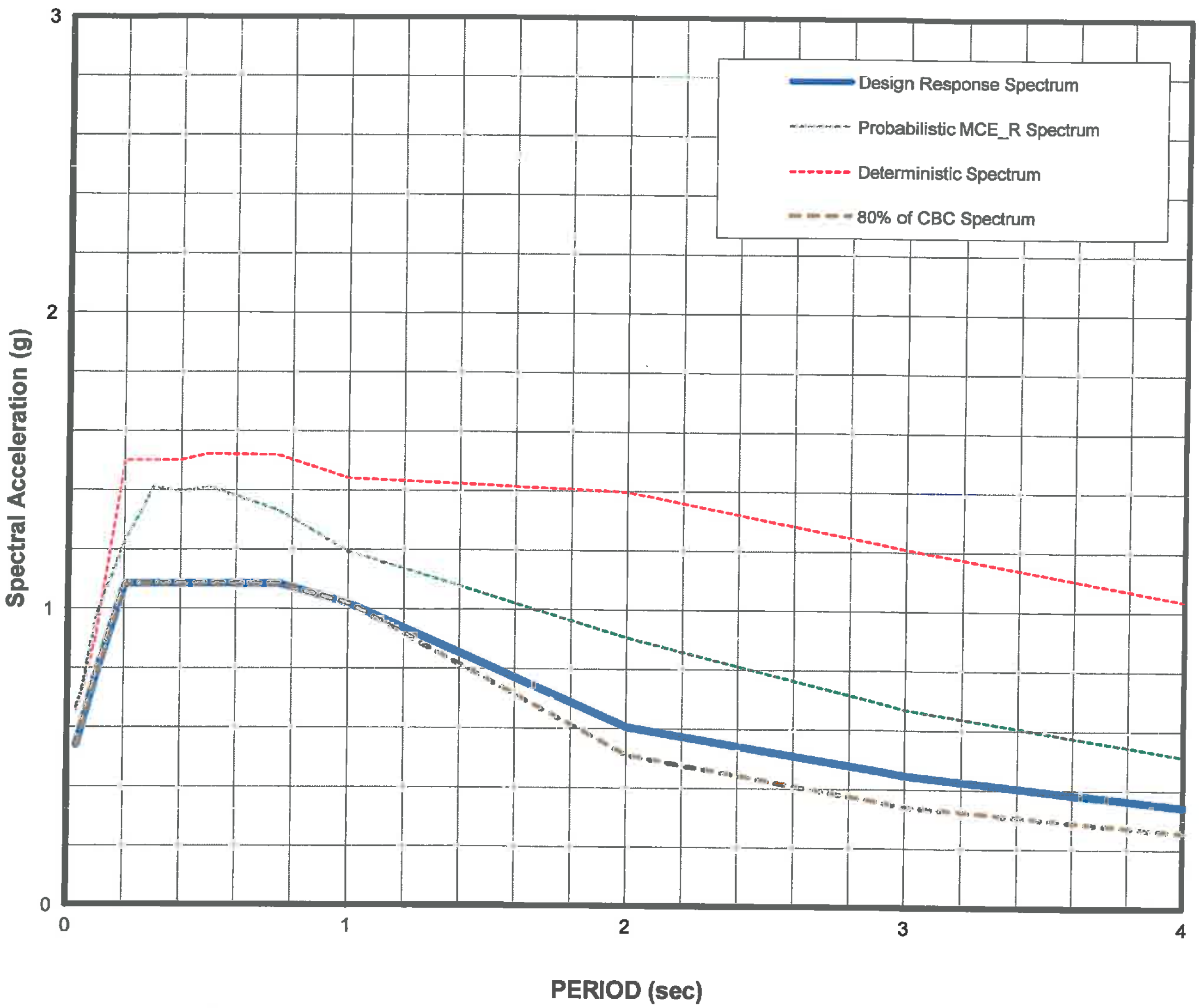
Period (sec)	2% in 50yr Probabilistic Spectral Acceleration (g)	Risk Coefficient C_R	Probabilistic MCE_R Spectral Acceleration (g)	84th Percentile Deterministic MCE Response Spectra, (g)	Deterministic CBC Lower Level, (g)	Site Specific MCE_R Spectral Acceleration (g)	80% CBC Design Response Spectrum	Site Specific Design Spectral Acceleration (g)
0.03	0.691	0.965	0.667	0.656	0.127	*0.656*	*0.537*	***0.537***
0.05	0.750	0.965	0.724	0.705	0.211	*0.705*	*0.607*	***0.607***
0.10	1.010	0.965	0.975	0.908	0.422	*0.908*	*0.780*	***0.780***
0.20	1.274	0.965	1.229	1.201	1.500	*1.229*	*1.084*	***1.084***
0.30	1.459	0.967	1.411	1.437	1.500	*1.411*	*1.084*	***1.084***
0.40	1.438	0.969	1.393	1.471	1.500	*1.393*	*1.084*	***1.084***
0.50	1.452	0.971	1.410	1.521	1.500	*1.410*	*1.084*	***1.084***
0.75	1.363	0.976	1.330	1.517	1.920	*1.330*	*1.084*	***1.084***
1.00	1.215	0.981	1.192	1.424	1.440	*1.192*	*1.018*	***1.018***
2.00	0.922	0.981	0.904	1.396	0.720	*0.904*	*0.509*	***0.603***
3.00	0.680	0.981	0.667	1.208	0.480	*0.667*	*0.339*	***0.445***
4.00	0.522	0.981	0.512	1.036	0.360	*0.512*	*0.254*	***0.341***

Vertical acceleration at the site may be calculated using the ASCE 7-10, Section 12.4.

The site-specific design response parameters are provided in the following table. These parameters were determined from Design Response Spectra presented in table above, and following guidelines of ASCE Section 21.4.

Table No. 4, Site-Specific Seismic Design Parameters

	Design Parameters (5% Damping)	Lower Limit, 80% of CBC Design Spectra
Site-Specific 0.2-second period Spectral Response Acceleration, S_{MS}	1.626	1.626
Site-Specific1-second period Spectral Response Acceleration, S_{M1}	1.808	1.526



Note: Calculated using EZFRISK program Risk Engineering, version 7.62
and USGS 2008 fault model database.

SITE SPECIFIC DESIGN RESPONSE SPECTRUM

Monsenor Oscar Romero Charter School (MORCS) 1157 South Berendo Street Los Angeles, California For : Youth Policy Institute (YPI) Charter Schools	Project Number: 13-31-194-01
Converse Consultants	Drawing No. 8

Site-Specific Design Spectral Response Acceleration for short period S_{DS}	1.084	1.084
Site-Specific Design Spectral Response Acceleration for 1-second period, S_{D1}	1.206	1.018

6.3 Deaggregated Seismic Source Parameters

Based on our analyses utilizing the USGS 2008 NSHMP PSHA Interactive Deaggregation web site, the mean and modal earthquake magnitudes for a return time of 2475 years is calculated to be 6.71 and 6.61, respectively. The earthquake magnitude of 6.71 is assumed for our seismic analyses at the project site.

7.0 DESIGN RECOMMENDATIONS

7.1 General Evaluation

Based on the results of our literature review, subsurface exploration, laboratory testing, geotechnical analyses, and understanding of the planned site improvements, it is our opinion that the proposed project is feasible from a geotechnical standpoint, provided the following conclusions and recommendations are incorporated into the project plans, specifications, and are followed during site construction. The following geotechnical findings should be considered for the planned projects:

- Undocumented fills were encountered ranging from 2 to 10 feet in depth across the site. These fills and disturbed soils are not suitable for foundation support and require remedial grading.
- The onsite soils have “Medium” expansive potential which requires mitigation.
- Groundwater was not encountered in our exploratory borings to a maximum depth of 51.5 feet. Groundwater is not anticipated during construction and will not need to be considered in design.
- The proposed at grade buildings should be supported on spread footings bearing into compacted fill.
- The proposed building with subterranean garage should be supported on native soils.
- Soil can be excavated with conventional heavy-duty earthmoving equipments.
- The on-site soil is not considered corrosive to concrete. However, the minimum saturated resistivity testing result indicates the onsite soil is considered moderate corrosive to ferrous metal. Protections of underground metal pipe should be considered.

7.2 Shallow Foundations

7.2.1 Vertical Capacity

The proposed buildings can be supported by conventional shallow footings. Isolated pad footing should be at least 24 inches square, and continuous footing should be at least 15 inches wide. Footings should be embedded at least 18 inches below lowest adjacent grade into compacted fill for at-grade structures, and into native soil for subterranean garage. The footing reinforcement should be based on the structural design. Conventional spread footings founded on compacted fill and competent native soils may be designed for a net bearing pressure of 2,500 pounds per square foot (psf) for dead-plus-live-loads.

The net allowable bearing pressure can be increased by 350 psf for each additional foot of excavation depth and by 200 psf for each additional foot of excavation width up to a maximum value of 4,500 psf.

The net allowable bearing values indicated above are for the dead loads and frequently applied live loads and are obtained by applying a factor of safety of 3.0 to the net ultimate bearing capacity.

It is understood some buildings are founded partly on the existing grade and partly on the underground structure. In such case, we recommend the at grade building footings located within the horizontal distance same as the height of retaining wall should be deepened. The deepened footing should be at least 18 inches below a 1H:1V plane projected upward from the base of the retaining wall. As an alternative, drilled piers with grade beam with minimum 4 feet below 1H:1V planes can be used and be designed for an allowable skin friction of 250 psf.

7.2.2 Lateral Capacity

Resistance to lateral loads can be provided by friction acting at the base of the foundation and by passive earth pressure. A coefficient of friction of 0.3 may be assumed with normal dead load forces. An allowable passive earth pressure of 250 psf per foot of depth up to a maximum of 4,000 psf may be used for footings poured against properly compacted fill. The values of coefficient of friction and allowable passive earth pressure include a factor of safety of 1.5.

7.2.3 Settlement

The static settlement of structures supported on continuous and/or spread footings founded on compacted fill and native soil will depend on the actual footing dimensions and the imposed vertical loads. Most of the footing settlement at the project site is expected to occur immediately after the application of the load. Based on the maximum allowable net bearing pressures presented above, static settlement is anticipated to be less than 0.5 inch. Differential settlement is expected to be up to one-half of the total settlement over a 30-foot span.

7.2.4 Dynamic Increases

Bearing values indicated above are for total dead load and frequently applied live loads. The above vertical bearing may be increased by 33% for short durations of loading which will include the effect of wind or seismic forces. The allowable passive pressure may be increased by 33% for lateral loading due to wind or seismic forces.

7.3 Pole Foundations

Pole type structures such as light poles, flag poles, signs and fence poles may be supported on a Cast-In-Drilled-Hole (CIDH) pile foundation provided the following recommendations incorporated into design and construction.

7.3.1 Vertical Capacity

CIDH Piles should be at least 18-inch in diameter extending to at least 3 feet into undisturbed native soils or compacted fill, and can be designed for an allowable skin friction of 200 psf against the perimeter of pile. The diameter and length of CIDH pile shall be determined by the Structural Engineer based on design loads. The piles can be connected to a grade beam system determined by the project structural engineer to control the deflections of structure under the design tolerance. The Uplift capacities can be taken as one-half of compressive capacities for pile design.

7.3.2 Lateral Capacity

Resistance to lateral loads can be provided by friction acting at the base of the foundation and by passive earth pressure. A coefficient of friction of 0.3 may be assumed with normal dead load forces. An allowable passive earth pressure of 250 psf per foot of depth up to a maximum of 4,000 psf may be used for footings poured against compacted fill or competent native alluvium. The values of coefficient of friction and allowable passive earth pressure include a factor of safety of 1.5.

For ground surface restrained by concrete slab, the passive resistance may be calculated from the ground surface. For unrestrained ground condition, the passive resistance of the upper one (1) foot earth material should be neglected in design.

7.3.3 Dynamic Increases

Bearing values indicated above are for total dead load and frequently applied live loads. The above vertical bearing may be increased by 33% for short durations of loading which will include the effect of wind or seismic forces. The allowable passive pressure may be increased by 33% for lateral loading due to wind or seismic forces.

7.3.4 Settlement

Based on the maximum allowable net bearing pressures presented above, static settlement is anticipated to be less than 0.5 inch, and the differential settlement may be taken as equal to about one half of the total settlement over a horizontal distance of 30 feet.

7.3.5 Dynamic Increases

Bearing values indicated above are for total dead load and frequently applied live loads. The above vertical bearing may be increased by 33% for short durations of loading which will include the effect of wind or seismic forces. The allowable passive pressure may be increased by 33% for lateral loading due to wind or seismic forces.

7.4 Slabs-on-grade

Slabs-on-grade should have a minimum thickness of four inches nominal for support of normal ground-floor live loads. Minimum reinforcement for slabs-on-grade should be No. 3 reinforcing bars, spaced at 18 inches on-center each way. The thickness and reinforcement of more heavily loaded slabs will be dependent upon the anticipated loads and should be designed by a structural engineer. A static modulus of subgrade reaction equal to 150 pounds per square inch per inch may be used in structural design of concrete slabs-on-grade.

It is critical that the exposed subgrade soils should not be allowed to desiccate prior to the slab pour. Care should be taken during concrete placement to avoid slab curling. Slabs should be designed and constructed as promulgated by the ACI and Portland Cement Association (PCA). Prior to the slab pour, all utility trenches should be properly backfilled and compacted.

In areas where a moisture-sensitive floor covering (such as vinyl tile or carpet) is used, a 10-mil-thick moisture retarder/barrier between the bottom of slab and subgrade that meets the performance criteria of ASTM E 1745 Class A material. Retarder/barrier sheets should be overlapped a minimum of six inches, and should be taped or otherwise sealed per the product specifications.

7.5 Earth Pressures for Retaining Structures

If retaining wall(s) is proposed, the following design values can be used for the design of the retaining wall less than 12 feet in height. The earth pressure behind any buried wall depends primarily on the allowable wall movement, type of soil behind the wall, backfill slopes, wall inclination, surcharges, and any hydrostatic pressure. The following earth pressures are recommended for vertical walls with no hydrostatic pressure.

Table No. 5, Lateral Earth Pressures for Retaining Wall Design

Backfill Slope (H:V)	Cantilever Wall Equivalent Fluid Pressure (pcf)	Restrained Wall (psf)
Level	40 (triangular pressure distribution)	35H (uniform pressure distribution)

The recommended lateral pressures assume that the walls are fully back-drained to prevent build-up of hydrostatic pressure. Adequate drainage could be provided by means of permeable drainage materials wrapped in filter fabric installed behind the walls. The drainage system should consist of perforated pipe surrounded by a minimum one (1) square feet per lineal feet of free draining, uniformly graded, ¾ -inch washed, crushed aggregate, and wrapped in filter fabric such as Mirafi 140N or equivalent. The filter fabric should overlap approximately 12 inches or more at the joints. The subdrain pipe should consist of perforated, four-inch diameter, rigid ABS (SDR-35) or PVC A-2000, or equivalent, with perforations placed down. Alternatively, a prefabricated drainage composite system such as the Miradrain G100N or equivalent can be used. The subdrain should be connected to solid pipe outlets, with a maximum outlet spacing of 100 feet. A drainage collection vault and sump pump will be necessary to collect and discharge water seepage from the basement level subdrain systems. Waterproofing membranes should be added to the subterranean wall levels for moisture sensitive areas to mitigate moisture migration through the walls. Basement levels walls should be backfilled with granular non-expansive fill soils.

Walls subjected to surcharge loads located within a distance equal to the height of the wall should be designed for an additional uniform lateral pressure equal to 30% or 45% of the anticipated surcharge load for unrestrained or restrained walls, respectively. These values are applicable for backfill placed between the wall stem and an imaginary plane rising 45 degrees from below the edge (heel) of the wall footings.

Retaining walls taller than 6 feet should be designed to resist additional earth pressure caused by seismic ground shaking based on Section 1615A.1.6 of CBC 2010. A seismic earth pressure of 16H (psf), based on an inverted triangular distribution, can be used for design of wall.

7.6 Soil Corrosivity Evaluation

Based on our review of soil corrosivity test results (see Appendix B), the pH and chloride content are not in the corrosive range to ferrous metal. However, the minimum saturated resistivity of soil is in the corrosive range to ferrous metal. Protections of underground metal pipe should be considered. The soluble sulfate concentration is not in the corrosive range to concrete. Type I or II Portland cement can be used for concrete design.

A corrosion engineer may be consulted for appropriate mitigation procedures and construction design, if needed. General considerations for corrosion mitigation measures may include the following:

- Steel and wire concrete reinforcement should have at least three inches of concrete cover where cast against soil, unformed.
- Below-grade ferrous metals should be given a high-quality protective coating, such as 18-mil plastic tape, extruded polyethylene, coal-tar enamel, or Portland cement mortar.
- Below-grade metals should be electrically insulated (isolated) from above-grade metals by means of dielectric fittings in ferrous utilities and/or exposed metal structures breaking grade.

7.7 Site Drainage

Adequate positive drainage should be provided away from the structure foundations to prevent ponding and to reduce percolation of water into the foundation soils. We recommend that any landscape areas immediately adjacent to the foundation shall be designed sloped away from the foundation with a minimum 2 percent slope gradient for at least 10 feet measured perpendicular to the face of the foundation. Impervious surfaces within 10 feet of the structure foundation shall be sloped a minimum of 1 percent away from the structure.

7.8 Percolation Rates for Stormwater Infiltration System

Percolation testing was performed utilizing exploratory Borings BH-6 and BH-8 on August 2, 2013. Tests were performed using the falling head test method in accordance with Los Angeles County “Low Impact Development Best Management Practice Guideline for Design, Investigation, and Reporting”. The results of the percolation tests are tabulated below and in Appendix C, *Percolation Testing Data*.

Table No. 6, Percolation Test Results

Boring No.	Depth of Boring (feet)	Predominant Soil Types (USCS)	Depth of Soil Column Tested (feet)	Average Percolation Rate (inches/hour)	Lowest Percolation Rate (inches/hour)
BH-6	10	Clayey Sand (SC)	5 – 10	0.27	0.23
BH-8	10	Clayey Sand (SC)	0 – 10	0.20	0.20

The percolation rates were determined in general accordance with Los Angeles County “Low Impact Development Best Management Practice Guideline for Design, Investigation, and Reporting”. In accordance with County of Los Angeles requirements, the minimum percolation rate for design of infiltration system for storm water management is 0.5 inch per hour. Based on the percolation rate, it is our opinion that the site is not suitable for infiltration drainage system.

7.9 Flexible Pavement Recommendations

The flexible pavement structural section design recommendations were performed in accordance with the method contained in the *CALTRANS Highway Design Manual*, Chapter 630 without the factor of safety. No specific traffic study was performed to determine the Traffic Index (TI) for the proposed project. The recommended flexible pavement structural sections for various TI conditions are presented in the following table:

Table No. 7, Flexible Pavement Structural Sections

Design Subgrade R-value	Design TI	PAVEMENT STRUCTURAL SECTIONS		FULL AC STRUCTURAL SECTION
		AC (inches)	AB (inches)	AC (inches)
14	4	3.0	4.0	4.0
	5	4.0	6.0	6.0
	6	5.0	7.0	7.5
	7	6.0	9.0	9.0

Actual traffic index and traffic load should be determined by either Civil Engineer or Traffic Engineer. The above pavement sections are recommended as a guideline for basic usage of the indicated TI values. It is our understanding the pavement must be designed to carry the weight of a 70,000 lb fire truck. In such a case, the minimum pavement structural section should be 5 inch asphalt concrete (AC) over 7 inches aggregate base (AB).

Base material shall conform to requirements for a Class 2 Crushed Aggregate Base (CAB) or equivalent (such as crushed miscellaneous base - CMB) and should be placed in accordance with the requirements of the Standard Specifications for Public Works Construction (SSPWC, Latest Edition). Asphaltic materials should conform to Section 203-1, "*Paving Asphalt*," and should be placed in accordance with Section 302-5, "*Asphalt Concrete Pavement*," of the SSPWC.

7.10 Rigid Pavement Recommendations

The rigid pavement structural section design recommendations were performed in accordance with *“Portland Cement Concrete Pavement (PCCP) Design Nomograph for Cities and Counties Roads.”* presented by the Portland Cement Association’s (PCA’s) Southwest Region Publication P-14, *“Portland Cement Concrete Pavement (PCCP) for Light, Medium, and Heavy Traffic.”* The recommended rigid pavement structural sections for various TI conditions are presented in the following table:

Table No. 8, Rigid Pavement Structural Sections

Design R-Value	Design Traffic Index (TI)	PCCP Pavement Section (inches)
14	4	7.00
	5	7.25
	6	7.50
	7	7.75

The above pavement section is based on a minimum 28-day Modulus of Rupture (M-R) of 550 psi and a compressive strength of 3,750 psi. The third point method of testing beams should be used to evaluate modulus of rupture. The concrete mix design should contain a minimum cement content of 5.5 sacks per cubic yard. Recommended maximum and minimum values of slump for pavement concrete are three inches to one inch, respectively.

Transverse contraction joints should not be spaced more than 15 feet and should be cut to a depth of ¼ the thickness of the slab. Longitudinal joints should not be spaced more than 12 feet apart. A longitudinal joint is not necessary in the pavement adjacent to the curb and gutter section.

Prior to placement of concrete, at least the upper 12 inches of subgrade soils below rigid pavement sections should be compacted to at least 95 percent relative compaction as defined by the ASTM D 1557 standard test method.

Positive drainage should be provided away from all pavement areas to prevent seepage of surface and/or subsurface water into pavement base and/or subgrade.

8.0 SITE GRADING AND EARTHWORK RECOMMENDATIONS

8.1 General

Based on our field exploration at the site, the undocumented fills and disturbed soils underneath the planned buildings and new parking lot should be removed and recompacted to provide a relatively uniform soil condition and sufficient lateral resistance for the footings and slab. To help reduce the potential for differential settlement, variations in the soil type, degree of compaction, and thickness of the compacted fill placed underneath slab and/or footings should be kept uniform. Site grading recommendations provided in this report are based on our experience with similar projects in the area and our site-specific geotechnical evaluation.

The existing soils removed during over-excavation can be placed as compacted fill in structural areas after proper processing (free of vegetation, shrubs, roots and debris). Earthwork should be performed with suitable equipment and techniques to selectively screen/remove debris from soils placed as engineered fill. General earthwork specifications are presented in *Appendix E, Earthwork Specifications*. Following remedial grading, compacted fill soils are anticipated to have similar engineering characteristics with the underlying dense alluvial soils.

8.2 Over-Excavation/Removal

Due to the undocumented fills encountered underneath the planned buildings, we recommend over-excavation be to the depth of fill or at least 5 feet below existing grade, whichever is deeper. Deeper removals will be needed if firm and natural soil conditions are not exposed on the excavation bottoms. The lateral limits of the over-excavation should extend at least 5 feet beyond the footing and slab areas, where space is available.

For pavement and concrete flatwork, we recommend over-excavation be at least 2 feet below finished subgrade and 2 feet laterally beyond the footprints, where space is available.

The exposed bottom of the over-excavation area should be scarified at least 6 inches, moisture conditioned as needed to near-optimum moisture content, and compacted to 90 percent relative compaction. Over-excavation should not undermine adjacent off-site improvements. Remedial grading should not extend within a projected 1:1 (horizontal to vertical) plane projected down from the outer edge of adjacent off-site improvements.

If loose, yielding soil conditions are encountered at the excavation bottom, the following options can be considered:

a. Over-excavate until reach firm bottom.
b. Scarify or over-excavate additional 18 inches deep, and then place at least 18-inch-thick compacted base material (CAB or equivalent) to bridge the soft bottom. Base should be compacted to 90% relative compaction.
c. Over-excavate additional 18 inches deep, and then place a layer of geofabric (i.e. Marifi HP570, X600 or equivalent), place 18-inch-thick compacted base material (CAB or equivalent) to bridge the soft bottom. Base should be compacted to 90% relative compaction. An additional layer of geofabric may be needed on top of base depending on the actual site conditions.

8.3 Engineered Fill

All engineered fill should be placed on competent, scarified and compacted bottom as evaluated by the geotechnical engineer and in accordance with the recommendations presented in this section. Excavated site soils, free of deleterious materials and rock particles larger than three (3) inches in the largest dimension, should be suitable for placement as compacted fill. Any proposed import fill should be evaluated and approved by Converse prior to import to the site. Import fill material should have an expansion index less than 20.

Due to expansive soils encountered at the site, we recommend at least 12 inches of imported non-expansive sandy soil or crushed aggregate base (CAB) be placed and compacted underneath the floor slabs of buildings. For other non-building structures, mitigation recommendations are presented in Section 8.5 – Expansive Soil.

Prior to compaction, fill materials should be thoroughly mixed and moisture conditioned within two (2) percent above the optimum moisture content. Fill soils shall be evenly spread in maximum 8-inch lifts, watered or dried as necessary, mixed and compacted to at least the density specified below. The fill shall be placed and compacted on a horizontal plane, unless otherwise approved by the Geotechnical Engineer. All fill, if not specified otherwise elsewhere in this report, should be compacted to at least 90 percent of the laboratory dry density in accordance with the ASTM Standard D1557 test method. The upper 12 inches of subgrade below pavement areas should be compacted to 95 percent relative compaction.

8.4 Excavatability

Based on our field exploration, the earth materials at the site may be excavated with conventional heavy-duty earth moving and trenching equipment. The onsite materials may contain demolition debris and gravel and/or cobbles. Earthwork should be performed with suitable equipment and methods for removal of debris from the engineered fill.

8.5 Expansive Soil

Based on soil classifications and laboratory test results, the recommendations contained in this report are based upon anticipated medium expansion soil conditions. The soil materials with Expansion Index higher than 20 should be mitigated. There are several mitigation measures that can be utilized to improve expansive soils at the site. Some mitigation measures include:

- Pre-saturation of on-site compacted subgrade soils to at approximate three (3) percent above optimum moisture content.

- Removing about 1 foot of the underlying soils, and replacing with imported sandy material compacted fill (Expansion Index less than 20).

- Reinforce footing and place thicker concrete slab with moisture barrier.

It is very important to keep the site soils moisture content around or under the edge of foundation, concrete slab, and asphalt concrete pavement at approximately the same moisture content before, during and after construction. This will reduce greatly the expansion potential of the site soils.

8.6 Shrinkage and Subsidence

Soil shrinkage and/or bulking as a result of remedial grading depends on several factors including the depth of over-excavation, and the grading method and equipment utilized, and average relative compaction. For preliminary estimation, bulking and shrinkage factors for various units of earth material at the site may be taken as presented below:

- The approximate shrinkage factor for the undocumented fill soils is estimated to range from ten (10) to fifteen (15) percent.
- The approximate shrinkage factor for the native alluvial soils is estimated to range from five (5) to ten (10) percent.
- For estimation purposes, ground subsidence may be taken as 0.1 feet as a result of remedial grading.

Although these values are only approximate, they represent our best estimates of the factors to be used to calculate lost volume that may occur during grading. If more accurate shrinkage and subsidence factors are needed, it is recommended that field-testing using the actual equipment and grading techniques be conducted.

9.0 CONSTRUCTION CONSIDERATIONS

9.1 Temporary Excavations

Based on the materials encountered in the exploratory borings, sloped temporary excavations may be constructed according to the slope ratios presented in the following table:

Table No. 9, Slope Ratios for Temporary Excavation

Maximum Depth of Cut (feet)	Maximum Slope Ratio* (horizontal: vertical)
0 – 4	vertical
4 – 8	1:1
>8	1.5:1

*Slope ratio assumed to be uniform from top to toe of slope.

Any loose utility trench backfill or other fill encountered in excavations will be less stable than the native soils. Temporary cuts encountering loose fill or loose dry sand should be constructed at a flatter gradient than presented in the table above. Surfaces exposed in slope excavations should be kept moist but not saturated to minimize raveling and sloughing during construction. Adequate provisions should be made to protect the slopes from erosion during periods of rainfall. Surcharge loads, including construction, should not be placed within five (5) feet of the unsupported excavation edge.

All applicable requirements of the California Construction and General Industry Safety Orders, the Occupational Safety and Health Act of 1987 and current amendments, and the Construction Safety Act should be met. The soils exposed in cuts should be observed during excavation by the project's geotechnical consultant. If potentially unstable soil conditions are encountered, modifications of slope ratios for temporary cuts may be required.

9.2 Shoring Design

Temporary shoring is required for support of construction excavations. A soldier-pile shoring system may be used to maintain temporary support of vertical walled excavations. Shoring design must consider the support of adjacent underground utilities and/or structures, and should consider the effects of shoring deflection on supported improvements.

Temporary cantilever shoring should be designed to resist a lateral earth pressure equivalent to a fluid density of 35 pounds-per-cubic-foot (pcf). This equivalent fluid pressure is valid only for shoring retaining level ground. Surcharge pressures should be added to the above earth pressures for surcharges within a distance from the top of the shoring less than or equal to the shoring height. A surcharge coefficient of 30 percent of any uniform vertical surcharge should be added as a horizontal shoring pressure for cantilever shoring.

Lateral resistance for soldier piles may be assumed to be provided by passive pressure below the bottom of excavations. The soldier piles should be designed using an allowable passive resistance in terms of equivalent fluid pressure of 250 pcf to a maximum of 4,000 psf. If the pile spacing is greater than 3 times pile diameter, the passive resistance can be doubled. Shoring piles may be designed per 2013 CBC Section 1807A.3.2. The horizontal deflection at top of shoring wall should be limited to less than 0.5 inch.

Caving soils should be anticipated between the piles. To limit local sloughing, caving soils in fill areas can be supported by continuous lagging or guniting. The need for lagging between soldier piles in bedrock should be determined by the Geotechnical Engineer during construction based upon the condition of the bedrock exposed and the mount (if any) of seepage encountered. All lumber to be left in the ground should be treated in accordance with Section 204-2 of the "Standard Specifications for Public Works Construction" (Green Book).

It is recommended that Converse review plans and specifications for proposed shoring and that a Converse representative observe the installation of shoring. A licensed surveyor should be retained to establish monuments on shoring and the surrounding ground prior to excavation. Such monuments should be monitored for horizontal and vertical movement during construction. Results of the monitoring program should be provided immediately to the project Structural (shoring) Engineer and Converse for review and evaluation. Adjacent buildings should be photo-documented prior to construction.

9.3 Geotechnical Services During Construction

This report has been prepared to aid in the foundation plans and specifications, and to assist the architect, civil and structural engineers in the design of the proposed structures

It is recommended that this office be provided an opportunity to review final design drawings and specifications to verify that the recommendations of this report have been properly implemented.

Recommendations presented herein are based upon the assumption that adequate earthwork monitoring will be provided by Converse. Footing excavations should be observed by Converse prior to placement of steel and concrete so that footings are founded on satisfactory materials and excavations are free of loose and disturbed materials. Trench backfill should be placed and compacted with observation and field density testing provided by this office.

During construction, the geotechnical engineer and/or their authorized representatives should be present at the site to provide a source of advice to the client regarding the geotechnical aspects of the project and to observe and test the earthwork performed. Their presence should not be construed as an acceptance of responsibility for the performance of the completed work, since it is the sole responsibility of the contractor performing the work to ensure that it complies with all applicable plans, specifications, ordinances, etc.

This firm does not practice or consult in the field of safety engineering. We do not direct the contractor's operations, and cannot be responsible for other than our own personnel on the site; therefore, the safety of others is the responsibility of the contractor. The contractor should notify the owner if he considers any recommended actions presented herein to be unsafe.

10.0 CLOSURE

The findings and recommendations of this report were prepared in accordance with generally accepted professional engineering and engineering geologic principles and practice. We make no other warranty, either expressed or implied. Our conclusions and recommendations are based on the results of the field and laboratory studies, combined with an interpolation and extrapolation of soil conditions between and beyond boring locations. If conditions encountered during construction appear to be different from those shown by the borings, this office should be notified.

Design recommendations given in this report are based on the assumption that the earthwork and site grading recommendations contained in this report are implemented. Additional consultation may be prudent to interpret Converse's findings for contractors, or to possibly refine these recommendations based upon the review of the final site grading and actual site conditions encountered during construction. If the scope of the project changes, if project completion is to be delayed, or if the report is to be used for another purpose, this office should be consulted.

11.0 REFERENCES

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APPENDIX A

FIELD EXPLORATION

APPENDIX A

FIELD EXPLORATION

Field exploration included a site reconnaissance and subsurface exploration program. During the site reconnaissance, the surface conditions were noted, and the approximate locations of the boring were determined. The exploratory borings were approximately located using existing boundary and other features as a guide and should be considered accurate only to the degree implied by the method used. The various field study methods performed are discussed below.

Exploratory Borings

Ten (10) exploratory borings (BH-1 through BH-10) were drilled within the project site on July 30 and August 2, 2013. The borings were advanced using a truck mounted 8-inch diameter hollow stem auger drill rig to depths ranging from 11.5 to 51.5 feet below the existing ground surface (bgs). Every boring was visually logged by a Converse engineer and sampled at regular intervals and at changes in subsurface soils. The Boring locations are shown on Drawing No. 2, *Site Plan and Boring Locations*. Detailed descriptions of the field exploration and sampling program are presented in Appendix A, *Field Exploration*.

California Modified Sampler (Ring samples), Standard Penetration Test samples, and bulk soil samples were obtained for laboratory testing. Standard Penetration Tests (SPTs) were performed in selected borings at selected intervals using a standard (1.4 inches inside diameter and 2.0 inches outside diameter) split-barrel sampler. The bore holes were backfilled and compacted with soil cuttings by reverse spinning of the auger following the completion of drilling and patched with asphalt.

Borings BH-6 and BH-8 were utilized for percolation tests prior to backfill. Percolation test procedures and test results are further discussed in Appendix C, *Percolation Testing*.

It should be noted that the exact depths at which material changes occur cannot always be established accurately. Changes in material conditions that occur between driven samples are indicated in the logs at the top of the next drive sample. A key to soil symbols and terms is presented as Drawing No. A-1, *Soil Classification Chart*. The log of the exploratory boring is presented in Drawing Nos. A-2 through A-11, *Log of Borings*.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

BORING LOG SYMBOLS

SAMPLE TYPE

- STANDARD PENETRATION TEST
  Split barrel sampler in accordance with ASTM D-1586-84 Standard Test Method
- DRIVE SAMPLE 2.42" I.D. sampler.
- DRIVE SAMPLE No recovery
- BULK SAMPLE
- GROUNDWATER WHILE DRILLING
- GROUNDWATER AFTER DRILLING

LABORATORY TESTING ABBREVIATIONS

TEST TYPE
(Results shown in Appendix B)

CLASSIFICATION	
Plasticity	pi
Grain Size Analysis	ma
Passing No. 200 Sieve	wa
Sand Equivalent	se
Expansion Index	ei
Compaction Curve	max
Hydrometer	h

STRENGTH	
Pocket Penetrometer	p
Direct Shear	ds
Direct Shear (single point)	ds*
Unconfined Compression	uc
Triaxial Compression	tx
Vane Shear	vs
Consolidation	c
Collapse Test	col
Resistance (R) Value	r
Chemical Analysis	ca
Electrical Resistivity	er

UNIFIED SOIL CLASSIFICATION AND KEY TO BORING LOG SYMBOLS

Converse Consultants

Project Name
PROPOSED NEW TWO-STORY FACILITIES
MONSENOR OSCAR ROMERO CHARTER SCHOOL (MORCS)
1157 SOUTH BERENDO STREET, LOS ANGELES, CALIFORNIA
FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No. 13-31-194-01

Drawing No. A-1

Log of Boring No. BH- 1

Dates Drilled: 8/2/2013 Logged by: MDR Checked By: SCL

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
0		**3" ASPHALT OVER 6" BASE**						
		FILL (Af): **CLAYEY SAND (SC):** fine to coarse-grained, few silt, traces of concrete, brown.		X				ma,r
5			X		3/3/4	20	105	c
			X		6/4/10	15	116	
10		**ALLUVIUM (Qya):** **CLAYEY SAND (SC):** fine to coarse-grained, few silt, brown.	X		3/5/6	17	108	
15		**SANDY CLAY (CL):** fine-grained sand, traces of silt, dark brown.	X		5/7/9	23	101	
20			X		6/10/12	19	105	
25		**CLAYEY SAND (SC):** fine to medium-grained, little silt, dark brown.	X		6/13/17	13	115	
		End of boring at 26.5 feet. Groundwater not encountered during drillig. Borehole backfilled with soil cuttings and patched with concrete on 8-2-13.						

Converse Consultants

Project Name
PROPOSED NEW TWO-STORY FACILITIES
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FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No. 13-31-194-01 Drawing No. A-2

Log of Boring No. BH- 2

Dates Drilled: 8/2/2013 Logged by: MDR Checked By: SCL

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		6" ASPHALT WITH NO BASE						
		FILL (Af): **SAND (SP):** medium-grained, few silt and clay, orange brown. **CLAYEY SAND (SC):** fine to medium-grained, few silt, brown.		X				
5			X		2/3/4	15	110	
		ALLUVIUM (Qya): **CLAYEY SAND (SC):** fine to medium-grained, few silt, brown.						
10			X		3/6/7	22	103	
		End of boring at 11.5 feet. Groundwater not encountered during drillig. Borehole backfilled with soil cuttings and patched with concrete on 8-2-13.						

Converse Consultants

Project Name
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MONSENOR OSCAR ROMERO CHARTER SCHOOL (MORCS)
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FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No. **13-31-194-01**

Drawing No. **A-3**

Log of Boring No. BH- 3

Dates Drilled: 7/30/2013 Logged by: MDR Checked By: SCL

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		4" ASPHALT OVER 7" BASE						
		FILL (Af): **CLAYEY SAND (SC):** fine to medium-grained, few silt, brown. -traces of brick pieces		X				r
5		**ALLUVIUM:** **CLAYEY SAND (SC):** fine to medium-grained, few silt, brown.	X		4/10/10	10	114	
		SILTY SAND (SM): fine to medium-grained, orange brown.	X		3/3/4	17	107	
10			X		3/4/4	13	106	
15		**SANDY CLAY (CL):** fine to medium-grained sand, few silt, dark brown.	X		4/5/10	17	108	wa (fc=65%)
20			X		5/13/18	16	115	
25			X		5/10/13	14	117	
		End of boring at 26.5 feet. Groundwater not encountered during drillig. Borehole backfilled with soil cuttings and patched with concrete on 7-30-13.						

Converse Consultants

Project Name
PROPOSED NEW TWO-STORY FACILITIES
MONSENOR OSCAR ROMERO CHARTER SCHOOL (MORCS)
1157 SOUTH BERENDO STREET, LOS ANGELES, CALIFORNIA
FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No. **13-31-194-01** Drawing No. **A-4**

Log of Boring No. BH- 4

Dates Drilled: 8/2/2013 | Logged by: MDR | Checked By: SCL

Equipment: 8" HOLLOW STEM AUGER | Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A | Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
0		**3" ASPHALT OVER 5" BASE**						
		FILL (Af): **CLAYEY SAND (SC):** fine to medium-grained, few silt, dark brown.		X				max,ei
		-encountered a bolt up to 2" in length						
5			X		6/10/12	18	112	
		-traces of asphalt debris	X		2/1/3	21	108	
10		**ALLUVIUM (Qya):** **CLAYEY SAND (SC):** fine to medium-grained, few silt, dark brown.	X		4/8/9	22	103	ds
15		**SANDY CLAY (CL):** fine-grained sand, few silt, dark brown.	X		3/8/11	21	103	wa (fc=89%)
20			X		5/9/16	17	112	pi
25		**CLAYEY SAND (SC):** fine-grained, few silt, brown.	X		2/4/8			
30		**SANDY CLAY (CL):** fine-grained sand, few silt, brown.	X		4/8/10	22	106	pi

Converse Consultants

Project Name
PROPOSED NEW TWO-STORY FACILITIES
MONSENOR OSCAR ROMERO CHARTER SCHOOL (MORCS)
1157 SOUTH BERENDO STREET, LOS ANGELES, CALIFORNIA
FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No. **13-31-194-01** | Drawing No. **A-5a**

Log of Boring No. BH- 4

Dates Drilled: 8/2/2013 | Logged by: MDR | Checked By: SCL

Equipment: 8" HOLLOW STEM AUGER | Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A | Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		SANDY CLAY (CL): fine-grained sand, few silt, brown.			2/3/5			
		SAND (SP): fine to medium-grained, traces of silt, orange brown.						
40					14/39/50	9	118	
45		-fine to coarse-grained			4/11/15			
50		**CLAYEY SAND (SC):** fine to coarse-grained, little silt, brown.			12/38/50(5")	30	97	
		End of boring at 51.5 feet. Groundwater not encountered during drillig. Borehole backfilled with soil cuttings and patched with concrete on 8-2-13.						

Converse Consultants

Project Name
PROPOSED NEW TWO-STORY FACILITIES
MONSENOR OSCAR ROMERO CHARTER SCHOOL (MORCS)
1157 SOUTH BERENDO STREET, LOS ANGELES, CALIFORNIA
FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No. 13-31-194-01

Drawing No. A-5b

Log of Boring No. BH- 5

Dates Drilled: 8/2/2013 | Logged by: MDR | Checked By: SCL

Equipment: 8" HOLLOW STEM AUGER | Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A | Depth to Water (ft): NOT ENCOUNTERED

SUMMARY OF SUBSURFACE CONDITIONS

This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

Depth (ft)	Graphic Log	Summary of Subsurface Conditions	Samples: Drive	Samples: Bulk	Blows/Ft	Moisture (%)	Dry Unit Wt. (pcf)	Other
		8" ASPHALT WITH NO BASE						ma,max
		FILL (Af): **SAND (SP):** medium-grained, few silt, orange brown.						
		SANDY CLAY (CL): fine to medium-grained sand, few silt, brown.						
5			■		4/7/6	18	106	
			■		4/8/8	16	107	
10		**ALLUVIUM (Qva):** **CLAYEY SAND (SC):** fine to medium-grained, little silt, brown.	■		3/5/6	14	109	
15		**SANDY CLAY (CL):** fine-grained sand, traces of silt, dark brown.	■		3/4/8	19	109	
20			■		5/6/8	22	100	
25		**CLAYEY SAND (SC):** fine to medium-grained, little silt, brown.	■		3/5/8	11	116	

End of boring at 26.5 feet.
Groundwater not encountered during drillig.
Borehole backfilled with soil cuttings and patched with concrete on 8-2-13.

Converse Consultants

Project Name
PROPOSED NEW TWO-STORY FACILITIES
MONSENOR OSCAR ROMERO CHARTER SCHOOL (MORCS)
1157 SOUTH BERENDO STREET, LOS ANGELES, CALIFORNIA
FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No. 13-31-194-01 | Drawing No. A-6

Log of Boring No. BH- 6

Dates Drilled: 8/2/2013 | Logged by: MDR | Checked By: SCL

Equipment: 8" HOLLOW STEM AUGER | Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A | Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		3" ASPHALT OVER 9.5" BASE						
		FILL (Af): **CLAYEY SAND (SC):** fine to medium-grained, few silt, dark brown.						
5		**ALLUVIUM (Qya):** **CLAYEY SAND (SC):** fine to medium-grained, few silt, dark brown.			7/5/7	10	118	
10					7/11/12	5	111	

End of boring at 11.5 feet.
Groundwater not encountered during drillig.
Borehole backfilled with soil cuttings and patched with concrete on 8-2-13.

Converse Consultants

Project Name
PROPOSED NEW TWO-STORY FACILITIES
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FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No. **13-31-194-01** | Drawing No. **A-7**

Log of Boring No. BH- 7

Dates Drilled: 7/30/2013 Logged by: MDR Checked By: SCL

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		3.5" ASPHALT OVER 5.5" BASE						max,ei
		FILL (Af): **CLAYEY SAND (SC):** fine to medium-grained, few silt, dark brown.						
		ALLUVIUM (Qya): **SAND WITH SILT (SP-SM):** medium-grained, orange brown.						
5		**CLAYEY SAND (SC):** fine to medium-grained, few silt, dark brown.			3/3/5	17	110	
					4/8/10	18	110	
10					3/8/14	17	109	ds wa (fc=50%)
15		**SANDY SILT (ML):** fine to medium-grained sand, few clays, brown.			7/12/18	19	110	wa (fc=76.2%)
20		**SILTY SAND (SM):** fine to medium-grained, traces of clay, orange brown.			12/27/41	14	117	
25		-few clay, brown			6/8/12			
30		**CLAYEY SAND (SC):** fine to medium-grained, little silt, brown.			6/16/23	20	107	

Log of Boring No. BH- 7

Dates Drilled: 7/30/2013 Logged by: MDR Checked By: SCL

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		SANDY SILT (ML): fine-grained sand, little clay, brown.			4/9/15			
40		**SILTY SAND (SM):** fine-grained, few clay, brown.			16/33/50(5.5")	17	112	
45		-little clay			9/11/22			
50					50(6")	7	112	
		End of boring at 51.5 feet. Groundwater not encountered during drillig. Borehole backfilled with soil cuttings and patched with concrete on 7-30-13.						

Converse Consultants

Project Name
PROPOSED NEW TWO-STORY FACILITIES
MONSENOR OSCAR ROMERO CHARTER SCHOOL (MORCS)
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FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No. 13-31-194-01

Drawing No. A-8b

Log of Boring No. BH- 8

Dates Drilled: 8/2/2013 Logged by: MDR Checked By: SCL

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		3" ASPHALT OVER 6" BASE						
5		<u>FILL (Af):</u> **CLAYEY SAND (SC):** fine to medium-grained, traces of bricks, brown.						
10		<u>ALLUVIUM (Qya):</u> **CLAYEY SAND (SC):** fine to medium-grained, traces of gravels up to 0.2" in maximum dimension, brown.			3/5/9	13	116	
		End of boring at 11.5 feet. Groundwater not encountered during drillig. Borehole backfilled with soil cuttings and patched with concrete on 8-2-13.						

Log of Boring No. BH- 9

Dates Drilled: 8/2/2013 | Logged by: MDR | Checked By: SCL

Equipment: 8" HOLLOW STEM AUGER | Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A | Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		5" ASPHALT OVER 6" BASE						
		<u>FILL (Af):</u> **CLAYEY SAND (SC):** fine to medium-grained, few silt, brown.		X				ca
5			X		2/4/4	15	107	
		<u>ALLUVIUM:</u> **CLAYEY SAND (SC):** fine to medium-grained, few silt, brown.						
10			X		4/6/12	18	110	
		End of boring at 11.5 feet. Groundwater not encountered during drillig. Borehole backfilled with soil cuttings and patched with concrete on 8-2-13.						

Converse Consultants

Project Name
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FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No. **13-31-194-01** | Drawing No. **A-10**

Log of Boring No. BH-10

Dates Drilled: 7/30/2013 | Logged by: MDR | Checked By: SCL

Equipment: 8" HOLLOW STEM AUGER | Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): N/A | Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		3.5" ASPHALT OVER 7" BASE						ma
		FILL (Af): **SANDY CLAY (CL):** fine-grained sand, some silt, brown.		X				
		ALLUVIUM (Qya): **SANDY CLAY (CL):** fine-grained sand, some silt, brown.						
5			X		5/9/18	24	101	
			X		7/14/23	17	110	
10		**SANDY SILT (ML):** fine-grained sand, little clay, traces of gravels up to 0.2" in maximum dimension, brown.	X		7/16/27	19	112	c wa (fc=63%)
15		**SANDY CLAY (CL):** fine-grained sand, some silt, brown.	X		7/18/27	22	107	
20			X		8/15/21	20	108	
25			X		3/13/28			wa (fc=56.5%)
		End of boring at 26.5 feet. Groundwater not encountered during drillig. Borehole backfilled with soil cuttings and patched with concrete on 7-30-13.						

Converse Consultants

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Project No. 13-31-194-01 | Drawing No. A-11

APPENDIX B

LABORATORY TESTING PROGRAM

APPENDIX B

LABORATORY TESTING PROGRAM

Tests were conducted in our laboratory on representative soil samples for the purpose of classification and evaluation of their relevant physical characteristics and engineering properties. The amount and selection of tests were based on the geotechnical requirements of the project. Test results are presented herein and on the Logs of Borings in Appendix A, *Field Exploration*. The following is a summary of the laboratory tests conducted for this project.

Moisture Content and Dry Density

Results of moisture content and dry density tests, performed on relatively undisturbed ring samples were used to aid in the classification of the soils and to provide quantitative measure of the *in situ* dry density. Data obtained from this test provides qualitative information on strength and compressibility characteristics of site soils. For test results, see the Logs of Borings in Appendix A, *Field Exploration*.

Grain-Size Analysis

To assist in classification of soils, mechanical grain-size analyses were performed on three (3) selected samples. Testing was performed in general accordance with the ASTM Standard D422 test method. Grain-size curve is shown in Drawing No. B-1, *Grain Size Distribution Results*.

Percent Finer than the No. 200 Sieve

The percent finer than sieve No. 200 test was performed on six (6) soil samples to aid in the classification of the on-site soils and to estimate other engineering parameters. Testing was performed in general accordance with the ASTM Standard D1140 test method. The test results are presented in the following table:

Table No. B-1, Percent Passing Sieve # 200 Results

Boring No.	Depth (feet)	Soil Classification	Percent Passing Sieve No. 200
BH-3	15	Sandy Clay (CL)	65.0
BH-4	15	Sandy Clay (CL)	89.0
BH-7	10	Clayey Sand (SC)	50.0
BH-7	15	Sandy Silt (ML)	76.2
BH-10	10	Sandy Silt (ML)	63.0
BH-10	25	Sandy Clay (CL)	56.5

Atterberg Limits

Atterberg limits tests were performed on two (2) samples to assist the classification of the soils according to ASTM Standard D4318 test method. The test results are presented in the following table and are presented on Drawing No. B-2, *Atterberg Limits Results*.

Table No. B-2, Atterberg Limit Test Results

Boring No.	Depth (feet)	Soil Classification	Liquid Limit (%)	Plastic Limit (%)	Plastic Index (%)
BH-4	20	Sandy Clay	29	12	17
BH-4	30	Sandy Clay	29	15	14

Maximum Density Test

Three (3) representative bulk samples were tested in the laboratory to determine the maximum dry density and optimum moisture content. The tests were conducted in accordance with the ASTM Standard D1557 laboratory procedure. The test results are presented in Drawing No. B-3, *Moisture-Density Relationship Results*.

Direct Shear

Direct shear test was performed on two (2) relatively undisturbed in-situ samples. For this test, three brass sampler rings were placed, one at a time, directly into the test apparatus and subjected to a range of normal loads appropriate for the anticipated conditions. The sample was then sheared at a constant strain rate of 0.01 inch/minute. Shear deformation was recorded until a maximum of about 0.25-inch shear displacement was achieved. Ultimate strength was selected from the shear-stress deformation data and plotted to determine the shear strength parameters. For test data, including sample density and moisture content, see Drawing Nos. B-4a through 4b, *Direct Shear Test Results,* and in the following table:

Table No. B-3, Direct Shear Test Results

Boring No.	Depth (feet)	Soil Classification	Ultimate Strength Parameters	
			Friction Angle (degrees)	Cohesion (psf)
BH-4	10 R	Clayey Sand (SC)	23	400
BH-7	10 R	Clayey Sand (SC)	23	1000

Consolidation

Consolidation tests were performed on two (2) relatively undisturbed in-situ samples. Data obtained from this test procedure was used to evaluate the settlement characteristics of the foundation soils under load. Preparation for this test involved trimming the sample and placing the one-inch high brass ring into the test apparatus, which contained porous stones, both top and bottom, to accommodate drainage during testing. Normal axial loads were applied to one end of the sample through the porous stones, and the resulting deflections were recorded at various time periods. The load was increased after the sample reached a reasonable state equilibrium. Normal loads were applied at a constant load-increment ratio, successive loads being generally twice the preceding load. The sample was tested at field and submerged conditions. The test results, including sample density and moisture content, are presented in Drawing No. B-5a and 5b, *Consolidation Test Results*.

Expansion Index

Two (2) representative bulk samples were tested to evaluate the expansion potential of material encountered at the site. The test results are presented in the following table:

Table No. B-4, Expansion Index Test Results

Sample Location	Depth (ft)	Soil Description	Expansion Index	Expansion Potential
BH-4	0 – 5	Clayey Sand (SC)	56	Medium
BH-7	0 – 5	Clayey Sand (SC)	51	Medium

R-value

Two (2) representative bulk soil samples were tested for resistance value (R-value) in accordance with ASTM D2844 Standard. This test is designed to provide a relative measure of soil strength for use in pavement design. The test results are shown in the following table:

Table No. B-5, R-value Test Result

Boring No.	Depth, ft	Soil Classification	Measured R-value
BH-1	0 – 5	Clayey Sand (SC)	14
BH-3	0 – 5	Clayey Sand (SC)	15

Soil Corrosivity

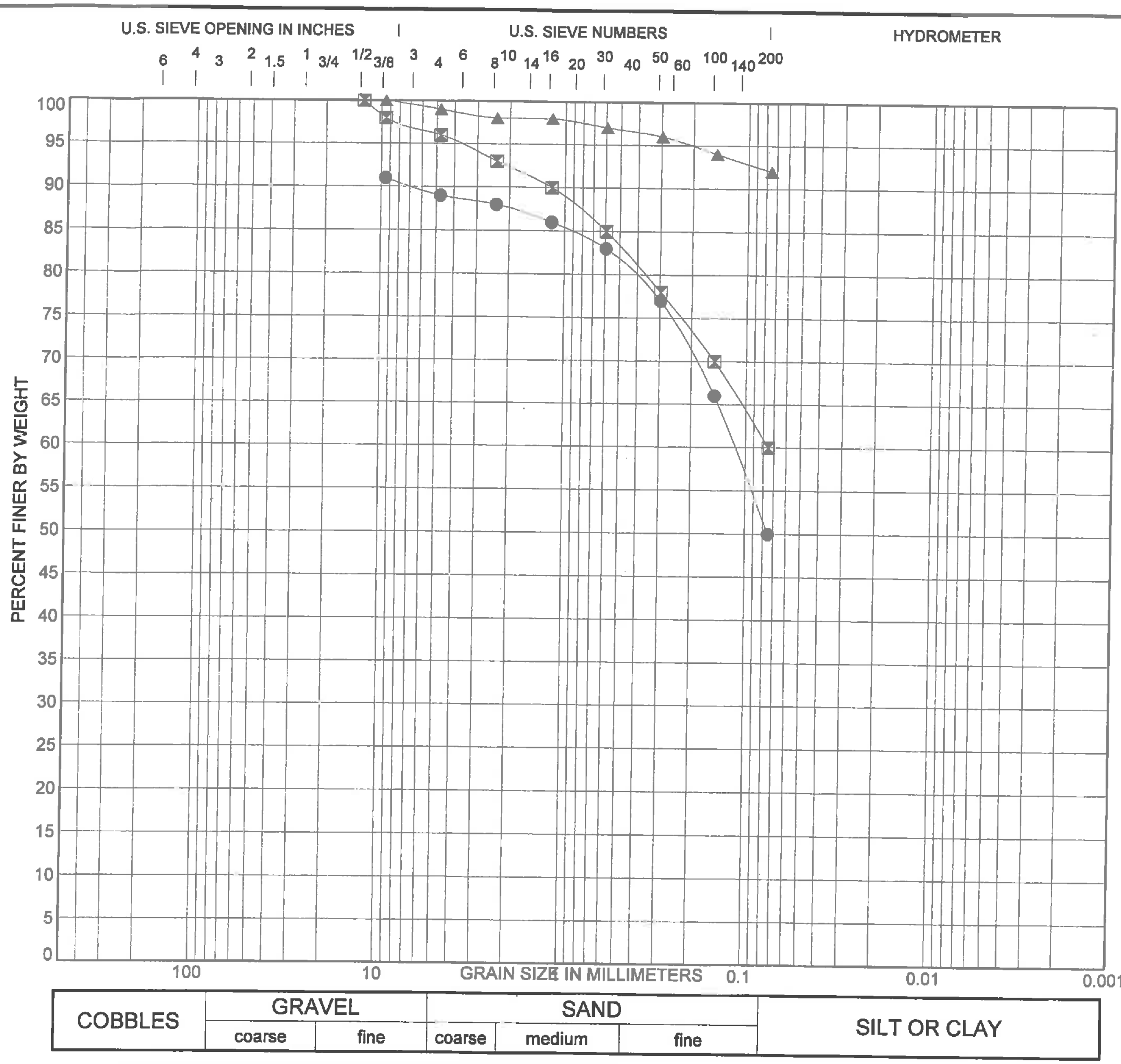
Two (2) representative soil samples were tested to evaluate minimum electrical resistivity, pH, and chemical content, including soluble sulfate and chloride concentrations. The purpose of these tests is to determine the corrosion potential of site soils when placed in contact with common construction materials. These tests were performed by Environmental Geotechnology Laboratory, Inc. (EGL), located in Arcadia, California. The test results received from EGL are included in the following table:

Table No. B-6, Corrosivity Test Results

Boring No.	Sample Depth (feet)	pH (Caltrans 643)	Soluble Chlorides (Caltrans 422) ppm	Soluble Sulfate (Caltrans 417) (% by weight)	Saturated Resistivity (Caltrans 643) Ohm-cm
BH-9	0 – 5	7.98	85	0.014	1,300

Sample Storage

Soil samples presently stored in our laboratory will be discarded 30 days after the date of this report, unless this office receives a specific request to retain the samples for a longer period.



	Boring No.	Depth (ft)	Description	LL	PL	PI	Cc	Cu
●	**BH- 1**	**0-5**	**CLAYEY SAND (SC)**					
⊠	**BH- 5**	**0-5**	**SANDY CLAY (CL)**					
▲	**BH-10**	**0-5**	**SANDY CLAY (CL)**					

	Boring No.	Depth (ft)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**BH- 1**	**0-5**	**9.5**	**0.115**			**2.0**	**39.0**	**50.0**	
⊠	**BH- 5**	**0-5**	**12.5**	**0.075**			**4.0**	**36.0**	**60.0**	
▲	**BH-10**	**0-5**	**9.5**				**1.0**	**7.0**	**92.0**	

GRAIN SIZE DISTRIBUTION RESULTS

Converse Consultants

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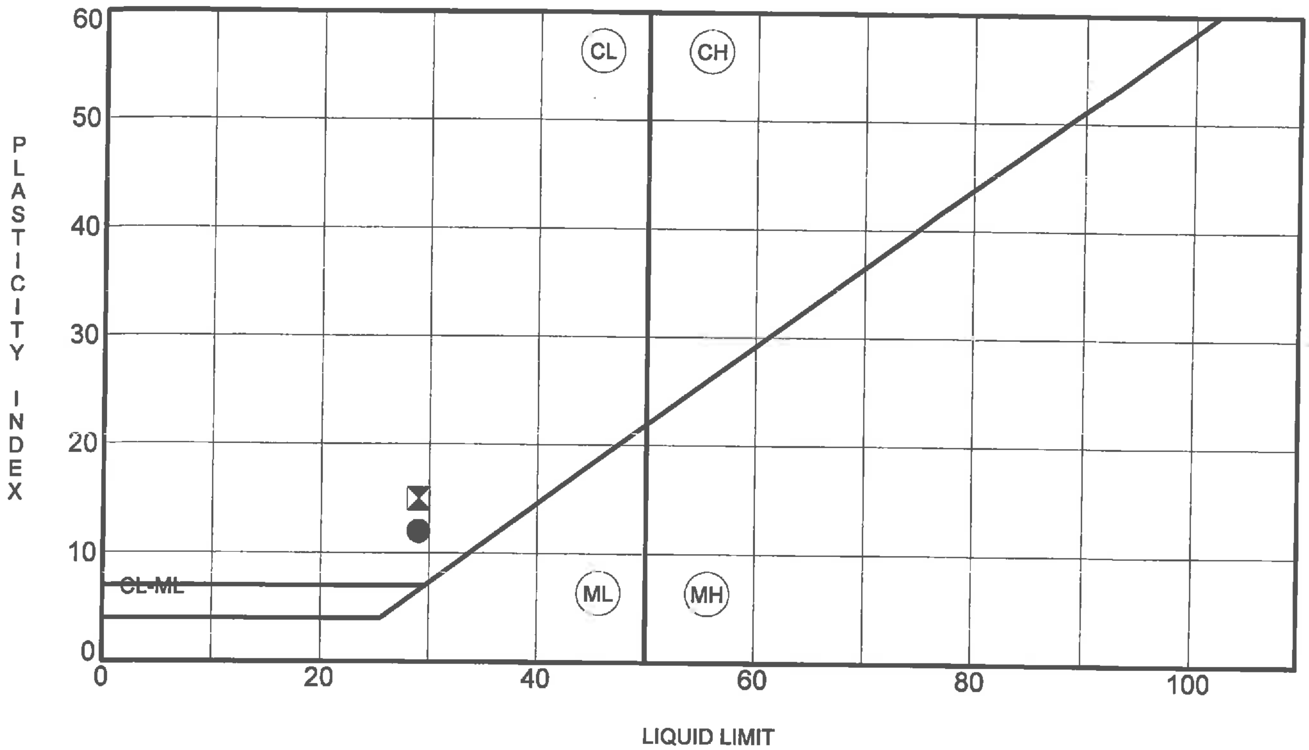
1157 SOUTH BERENDO STREET, LOS ANGELES, CALIFORNIA
FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No. **13-31-194-01**

Drawing No. **B-1**



Symbol	Boring No.	Depth (ft)	LL (%)	PL (%)	PI (%)	Description
●	BH- 4	20	29	17	12	SANDY CLAY (CL)
⧗	BH- 4	30	29	14	15	SANDY CLAY (CL)

ATTERBERG LIMITS RESULTS

Converse Consultants

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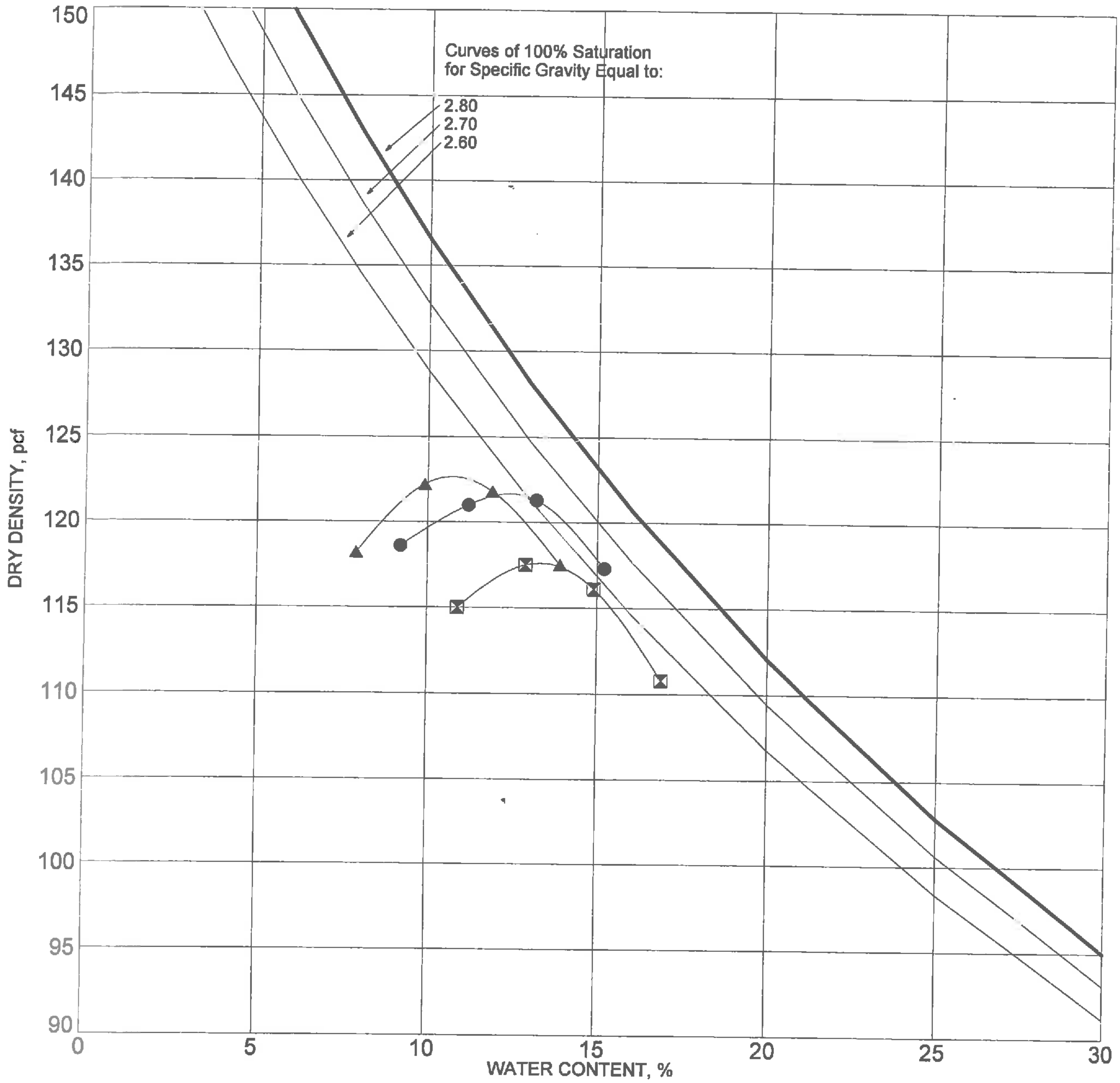
Project No. **13-31-194-01**

Drawing No. **B-2**



SYMBOL	BORING NO.	DEPTH (ft)	DESCRIPTION	ASTM TEST METHOD	OPTIMUM WATER, %	MAXIMUM DRY DENSITY, pcf
●	BH- 4	0-5	CLAYEY SAND (SC)	D1557 Method B	12.5	122.5
⊠	BH- 5	0-5	SANDY CLAY (CL)	D1557 Method B	13.5	118
▲	BH- 7	0-5	CLAYEY SAND (SC)	D1557 Method B	10.8	123.5

NOTE:

MOISTURE-DENSITY RELATIONSHIP RESULTS

Converse Consultants

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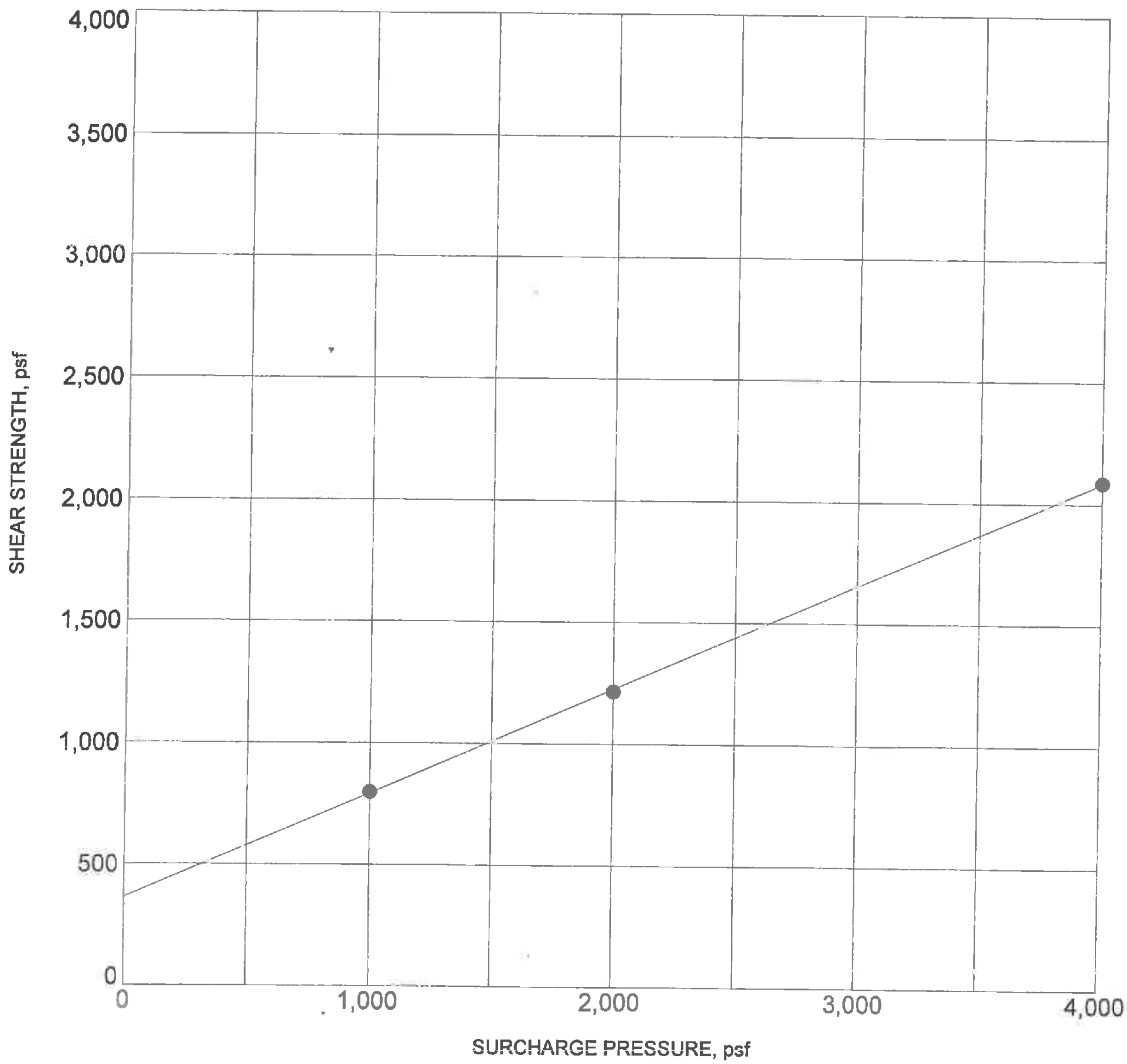
FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No. **13-31-194-01**

Drawing No. **B-3**



BORING NO. :	BH- 4	DEPTH (ft) :	10
DESCRIPTION :	CLAYEY SAND (SC)		
COHESION (psf) :	400	FRICTION ANGLE (degrees)	23
MOISTURE CONTENT (%) :	21.5	DRY DENSITY (pcf) :	102.8

NOTE: Ultimate Strength.

DIRECT SHEAR TEST RESULTS

Converse Consultants

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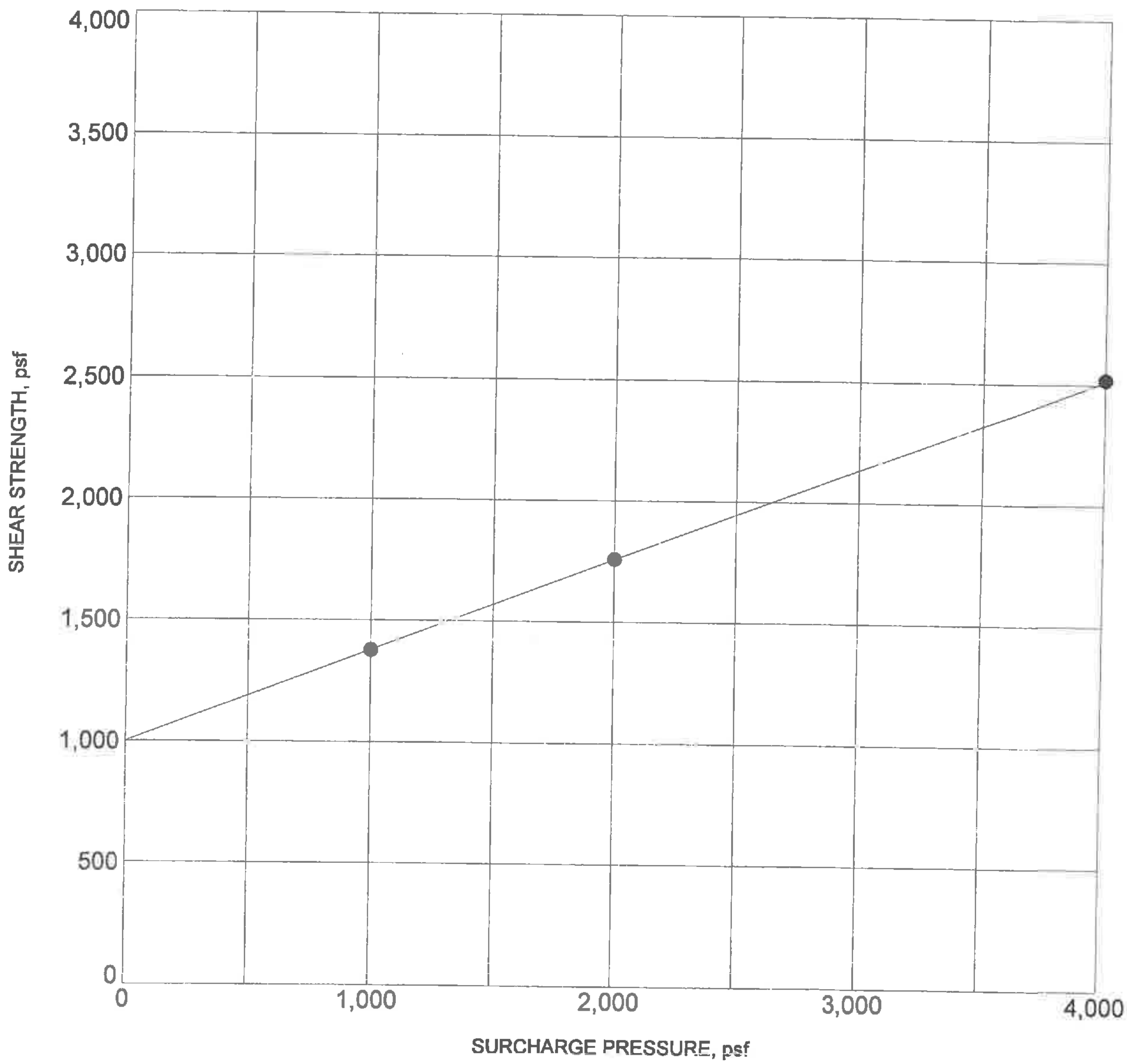
FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No. **13-31-194-01**

Drawing No. **B-4a**



BORING NO. :	BH- 7	DEPTH (ft) :	10
DESCRIPTION :	CLAYEY SAND (SC)		
COHESION (psf) :	1000	FRICTION ANGLE (degrees)	20
MOISTURE CONTENT (%) :	16.9	DRY DENSITY (pcf) :	108.8

NOTE: Ultimate Strength.

DIRECT SHEAR TEST RESULTS

Converse Consultants

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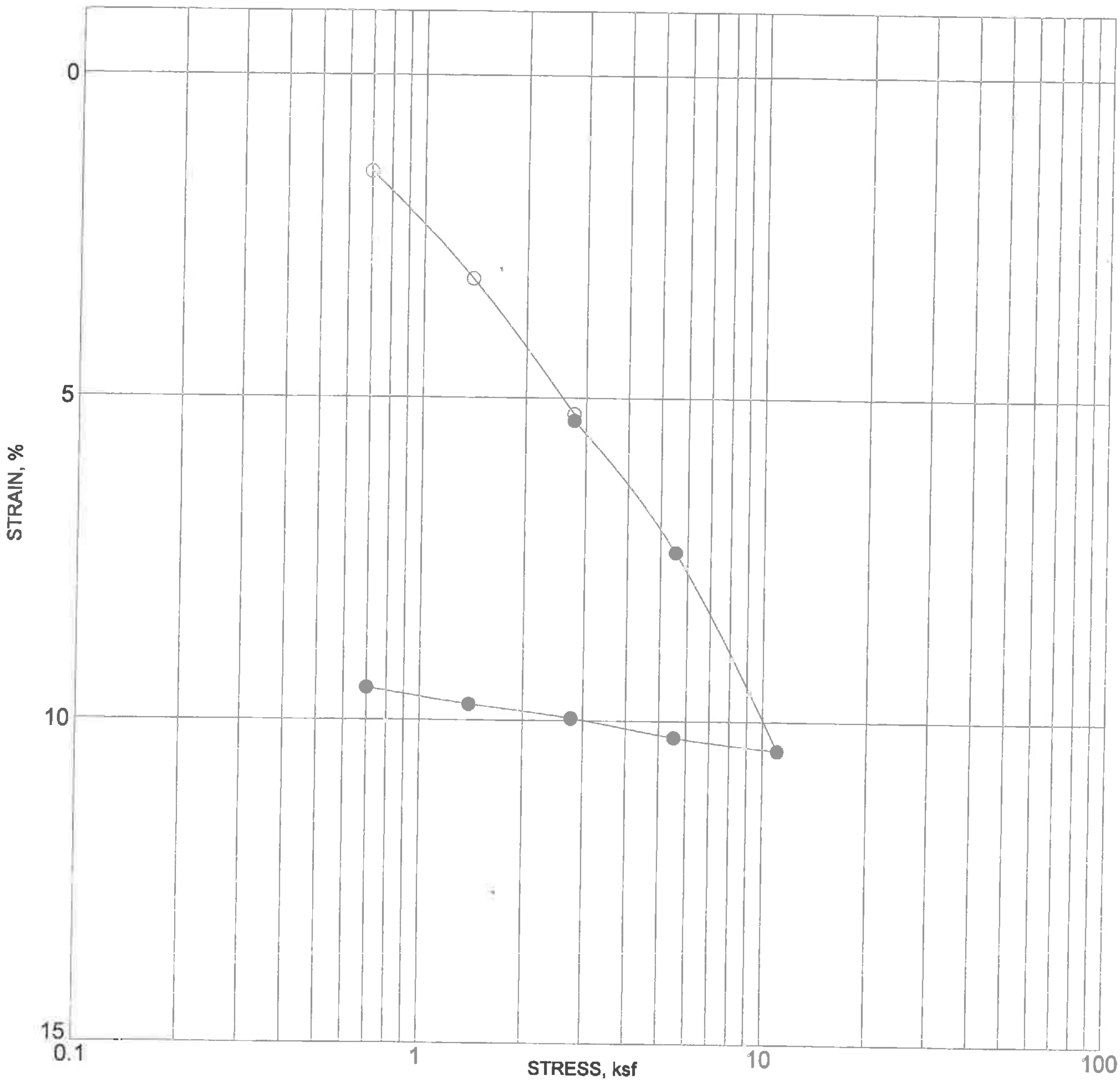
Project No. **13-31-194-01**

Drawing No. **B-4b**



BORING NO. :	BH- 1	DEPTH (ft) :	5
DESCRIPTION :	SANDY CLAY (CL)		

	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERCENT SATURATION	VOID RATIO
INITIAL	**19.7**	**104.8**		
FINAL	**18.1**	**107.3**		

NOTE: SOLID CIRCLES INDICATE READINGS AFTER ADDITION OF WATER

CONSOLIDATION TEST RESULTS

Converse Consultants

Project Name
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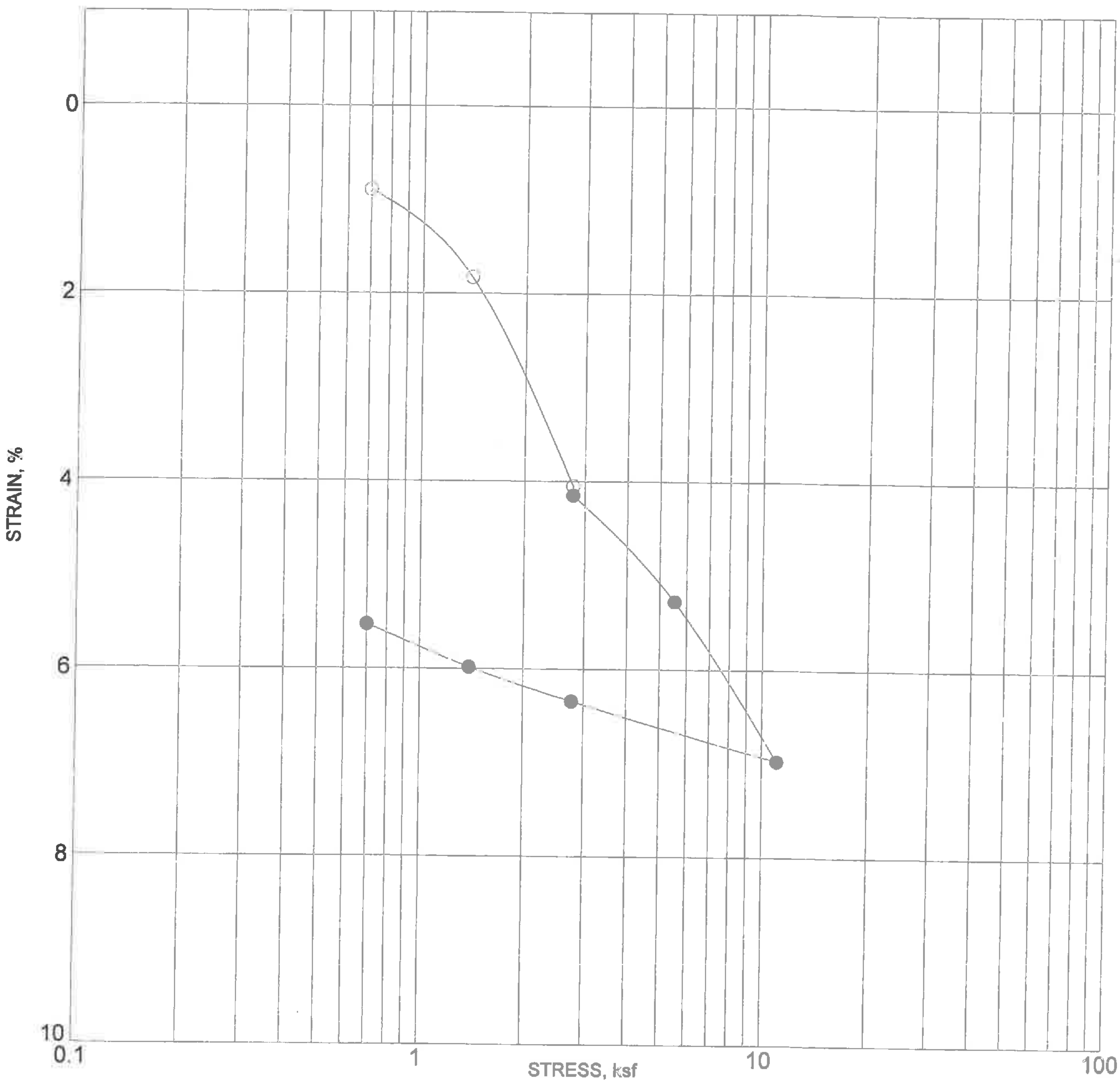
FOR: PACIFIC CHARTER SCHOOL DEVELOPMENT, INC.

Project No. **13-31-194-01**

Drawing No. **B-5a**



BORING NO. :	BH-10	DEPTH (ft) :	10
DESCRIPTION :	SANDY SILT (ML)		

	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERCENT SATURATION	VOID RATIO
INITIAL	18.9	112.1		
FINAL	18.1	112.1		

NOTE: SOLID CIRCLES INDICATE READINGS AFTER ADDITION OF WATER

CONSOLIDATION TEST RESULTS

Converse Consultants

Project Name
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1157 SOUTH BERENDO STREET, LOS ANGELES, CALIFORNIA
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Project No. **13-31-194-01**

Drawing No. **B-5b**

APPENDIX C

PERCOLATION TESTING

APPENDIX C

PERCOLATION TESTING

Percolation testing was performed utilizing two (2) exploratory borings (BH-6 and BH-8) on August 2, 2013. The tests were performed using the falling head test method to evaluate soil percolation rates of on-site soils. The bored hole was cased using a two-inch diameter perforated PVC casing surrounded with filter gravel pack. Water was added to the bore hole until the water level was at the ground surface and allowed to pre-soak for at least 2 hours. After presoak, we started 30-minute interval percolation test by adding water to the borehole until the water level was at ground surface. The water level was measured for 30 minutes to the nearest 1/10-foot. At least four (4) sets of 30-minute interval percolation tests were performed at each location. The results of the percolation tests are tabulated below and in Appendix C, *Percolation Testing Data*.

Table No. C-1, Percolation Test Results

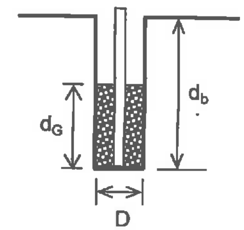
Boring No.	Depth of Boring* (feet)	Predominant Soil Types (USCS)	Average Percolation Rate (inches/hour)
BH-6	10.0	Clayey Sand (SC)	0.27
BH-8	10.0	Clayey Sand (SC)	0.20

The project Civil Engineer should review the raw data of percolation test attached with this memorandum to determine specific soil layers and percolation rates for design of the proposed infiltration system.

Percolation Testing

Job Name: Monsenor Oscar Romero Charter School
Job No.: 13-31-194-01
Location: BH-6
Test Date: August 2, 2013

Test Boring No. **BH-6**
Depth of Boring (d_b): 10.0 feet
Diameter of Boring (D): 0.67 feet
Test Performer: MDR



Time of Testing			Water Level Measurement		Water Level Calculations				Percolation Rate Calculations		
Initial Time T_i	Final Time T_f	Time Interval ΔT (hr)	Initial depth to water d_1 (feet)	Final depth to water d_2 (feet)	Initial Height of water column d_i (feet)	Final Height of water column d_f (feet)	Drop in Height $\Delta d = d_i - d_f$ (feet)	Average height of water column L_{ave} (feet)	Pre-adjusted Percolation Rate $k_i = \Delta d / \Delta T$ (inch/hr)	Reduction Factor R_f	Adjusted Percolation Rate $k = k_i / R_f$ (inch/hr)
Presoak 7:35 AM	2:34 PM	6.98									
Percolation Test											
2:35:00 PM	**3:05:00 PM**	**0.50**	**5.00**	**5.20**	**5.00**	**4.80**	**0.20**	**4.90**	**4.80**	**15.6**	**0.31**
3:05:00 PM	**3:35:00 PM**	**0.50**	**5.00**	**5.20**	**5.00**	**4.80**	**0.20**	**4.90**	**4.80**	**15.6**	**0.31**
3:35:00 PM	**4:05:00 PM**	**0.50**	**5.00**	**5.15**	**5.00**	**4.85**	**0.15**	**4.93**	**3.60**	**15.7**	**0.23**
4:05:00 PM	**4:35:00 PM**	**0.50**	**5.00**	**5.15**	**5.00**	**4.85**	**0.15**	**4.93**	**3.60**	**15.7**	**0.23**

Note: Reduction Factor, $R_f = (2*d_i - \Delta d)/D + 1$

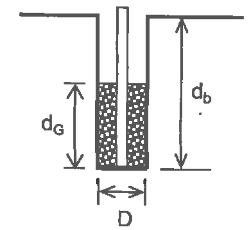
Lowest Pericolaton Rate = 0.23 inch/hr
Average Percolation Rate = 0.27 inch/hr

Reference: Los Angeles County (2011). Adminstrative Manual - Low Impact Development Best Management Practice Guideline for Design, Investigation, and Reporting, 01/03/11.

Percolation Testing

Job Name: Monsenor Oscar Romero Charter School
Job No.: 13-31-194-01
Location: BH-8
Test Date: August 2, 2013

Test Boring No. **BH-8**
Depth of Boring (d_b): 10.0 feet
Diameter of Boring (D): 0.67 feet
Test Performer: MDR



Time of Testing			Water Level Measurement		Water Level Calculations				Percolation Rate Calculations		
Initial Time	Final Time	Time Interval	Initial depth to water	Final depth to water	Initial Height of water column	Final Height of water column	Drop in Height	Average height of water column	Pre-adjusted Percolation Rate	Reduction Factor	Adjusted Percolation Rate
T_i	T_f	ΔT	d_1	d_2	d_i	d_f	$\Delta d = d_i - d_f$	L_{ave}	$k_i = \Delta d / \Delta T$	R_f	$k = k_i / R_f$
		(hr)	(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(inch/hr)		(inch/hr)
Presoak 9:30 AM	2:26 PM	4.93	0.00	2.00							
Percolation Test											
2:27:00 PM	**2:57:00 PM**	**0.50**	**0.00**	**0.25**	**10.00**	**9.75**	**0.25**	**9.88**	**6.00**	**30.5**	**0.20**
2:57:00 PM	**3:27:00 PM**	**0.50**	**0.00**	**0.25**	**10.00**	**9.75**	**0.25**	**9.88**	**6.00**	**30.5**	**0.20**
3:27:00 PM	**3:57:00 PM**	**0.50**	**0.00**	**0.25**	**10.00**	**9.75**	**0.25**	**9.88**	**6.00**	**30.5**	**0.20**
3:57:00 PM	**4:27:00 PM**	**0.50**	**0.00**	**0.27**	**10.00**	**9.73**	**0.27**	**9.87**	**6.48**	**30.4**	**0.21**

Note: Reduction Factor, $R_f = (2*d_i - \Delta d)/D + 1$

Lowest Perlcolaton Rate = 0.20 inch/hr
Average Percolation Rate = 0.20 inch/hr

Reference: Los Angeles County (2011). Adminstrative Manual - Low Impact Development Best Management Practice Guideline for Design, Investigation, and Reporting, 01/03/11.

APPENDIX D

LIQUEFACTION/SEISMIC SETTLEMENT ANALYSIS

APPENDIX D

LIQUEFACTION/SEISMIC SETTLEMENT ANALYSIS

Liquefaction is defined as the phenomenon where a soil mass exhibits a substantial reduction in its shear strength. This strength reduction is due to the development of excess pore pressure in a soil mass caused by earthquake induced ground motions. Saturated soils behave temporarily as a viscous fluid (liquefaction) and, consequently, lose their capacity to support the structures founded on them. The potential for liquefaction decreases with increasing clay and gravel content, but increases as the ground acceleration and duration of shaking increase. Liquefaction potential has been found to be the greatest where the groundwater level and loose sands occur within 50 feet of the ground surface.

Our liquefaction analyses are based on the *Special Publication 117A: Guidelines for Evaluating and Mitigating Seismic Hazards in California* (9/2008), *Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction Hazards in California* (3/1999), and *2010 California Building Code*.

The subsurface data obtained from exploratory boring BH-7 was used to evaluate the liquefaction/seismic settlement potential of the area. The SPT blow counts at upper 5 feet of soils are assumed to be 15 after completion of compaction. The liquefaction potential and seismic settlement analyses were performed utilizing SPT data obtained from the selected boring for the upper 50 feet of soils, using *LiquefyPro,* Version 5.8d, 2009, by Civil Tech Software. The following seismic parameters are used for liquefaction potential analyses.

Table No. D-1, Seismic Parameters Used in Liquefaction Analysis

Groundwater Depth* (feet)	Earthquake Magnitude** Mw	Peak Ground Acceleration*** (g)
50	6.71	0.478

* Based on Seismic Hazard Zone Report for the Hollywood 7.5-Minute Quadrangle
** Based on USGS 2008 NSHMP PSHA Interactive Deaggregation web site.
** Based on S_{DS}/2.5 per CBC 2010

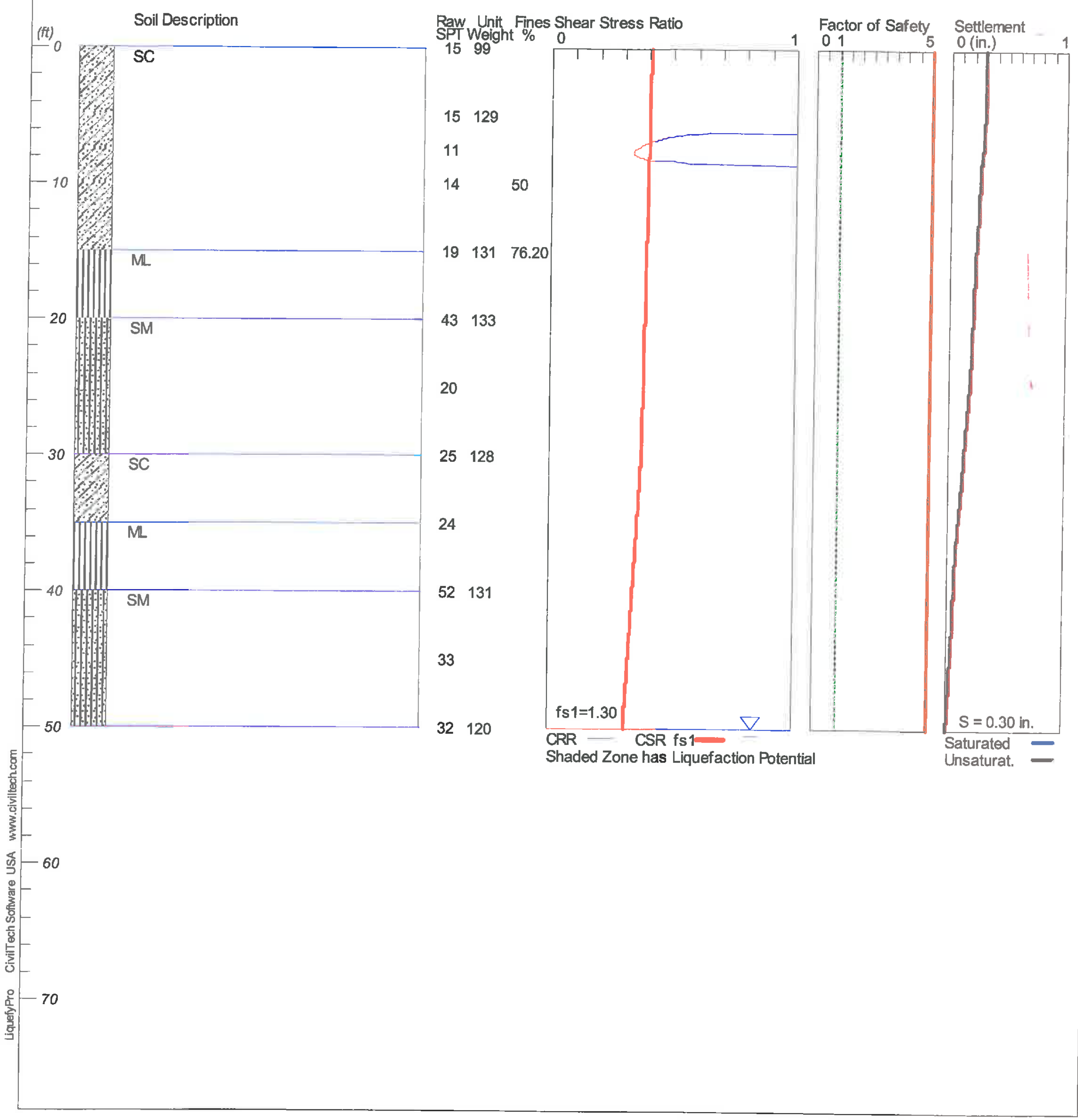
The results of our liquefaction analyses indicate the project site is not susceptible to liquefaction as presented in the attached calculations. The estimated seismic settlement is approximately 0.3 inches with differential settlement of 0.2 inch.

LIQUEFACTION ANALYSIS

Pacific Charter-Monsenor Oscar Romero Charter Scho

Hole No.=BH-7 Water Depth=50 ft Surface Elev.=210

Magnitude=6.71
Acceleration=0.478g



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LIQUEFACTION ANALYSIS SUMMARY

****

Font: Courier New, Regular, Size 8 is recommended for this report.
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Input File Name: C:\Documents and Settings\mrahman\Desktop\13-31-194-01\13-31-194-01.liq
Title: Pacific Charter-Monsenor Oscar Romero Charter Scho
Subtitle: 13-31-194-01

Surface Elev.=210
Hole No.=BH-7
Depth of Hole= 50.00 ft
Water Table during Earthquake= 50.00 ft
Water Table during In-Situ Testing= 50.00 ft
Max. Acceleration= 0.48 g
Earthquake Magnitude= 6.71

Input Data:
Surface Elev.=210
Hole No.=BH-7
Depth of Hole=50.00 ft
Water Table during Earthquake= 50.00 ft
Water Table during In-Situ Testing= 50.00 ft
Max. Acceleration=0.48 g
Earthquake Magnitude=6.71
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Ishihara / Yoshimine
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.3
7. Borehole Diameter, Cb= 1.15
8. Sampling Method, Cs= 1.2
9. User request factor of safety (apply to CSR) , User= 1.30
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: Yes*

* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
0.00	15.00	99.00	0.00
5.00	15.00	129.00	0.00
7.50	11.00	129.00	0.00
10.00	14.00	129.00	50.00
15.00	19.00	131.00	76.20
20.00	43.00	133.00	76.20
25.00	20.00	133.00	76.20
30.00	25.00	128.00	76.20
35.00	24.00	128.00	76.20

40.00	52.00	131.00	76.20
45.00	33.00	131.00	76.20
50.00	32.00	120.00	76.20

Output Results:
Settlement of Saturated Sands=0.00 in.
Settlement of Unsaturated Sands=0.30 in.
Total Settlement of Saturated and Unsaturated Sands=0.30 in.
Differential Settlement=0.148 to 0.195 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
0.00	2.66	0.40	5.00	0.00	0.30	0.30
0.05	2.66	0.40	5.00	0.00	0.30	0.30
0.10	2.66	0.40	5.00	0.00	0.30	0.30
0.15	2.66	0.40	5.00	0.00	0.30	0.30
0.20	2.66	0.40	5.00	0.00	0.30	0.30
0.25	2.66	0.40	5.00	0.00	0.30	0.30
0.30	2.66	0.40	5.00	0.00	0.30	0.30
0.35	2.66	0.40	5.00	0.00	0.30	0.30
0.40	2.66	0.40	5.00	0.00	0.30	0.30
0.45	2.66	0.40	5.00	0.00	0.30	0.30
0.50	2.66	0.40	5.00	0.00	0.30	0.30
0.55	2.66	0.40	5.00	0.00	0.30	0.30
0.60	2.66	0.40	5.00	0.00	0.30	0.30
0.65	2.66	0.40	5.00	0.00	0.30	0.30
0.70	2.66	0.40	5.00	0.00	0.30	0.30
0.75	2.66	0.40	5.00	0.00	0.30	0.30
0.80	2.66	0.40	5.00	0.00	0.30	0.30
0.85	2.66	0.40	5.00	0.00	0.30	0.30
0.90	2.66	0.40	5.00	0.00	0.30	0.30
0.95	2.66	0.40	5.00	0.00	0.30	0.30
1.00	2.66	0.40	5.00	0.00	0.30	0.30
1.05	2.66	0.40	5.00	0.00	0.30	0.30
1.10	2.66	0.40	5.00	0.00	0.30	0.30
1.15	2.66	0.40	5.00	0.00	0.30	0.30
1.20	2.66	0.40	5.00	0.00	0.30	0.30
1.25	2.66	0.40	5.00	0.00	0.30	0.30
1.30	2.66	0.40	5.00	0.00	0.30	0.30
1.35	2.66	0.40	5.00	0.00	0.30	0.30
1.40	2.66	0.40	5.00	0.00	0.29	0.29
1.45	2.66	0.40	5.00	0.00	0.29	0.29
1.50	2.66	0.40	5.00	0.00	0.29	0.29
1.55	2.66	0.40	5.00	0.00	0.29	0.29
1.60	2.66	0.40	5.00	0.00	0.29	0.29
1.65	2.66	0.40	5.00	0.00	0.29	0.29
1.70	2.66	0.40	5.00	0.00	0.29	0.29
1.75	2.66	0.40	5.00	0.00	0.29	0.29
1.80	2.66	0.40	5.00	0.00	0.29	0.29
1.85	2.66	0.40	5.00	0.00	0.29	0.29
1.90	2.66	0.40	5.00	0.00	0.29	0.29
1.95	2.66	0.40	5.00	0.00	0.29	0.29
2.00	2.66	0.40	5.00	0.00	0.29	0.29
2.05	2.66	0.40	5.00	0.00	0.29	0.29
2.10	2.66	0.40	5.00	0.00	0.29	0.29
2.15	2.66	0.40	5.00	0.00	0.29	0.29
2.20	2.66	0.40	5.00	0.00	0.29	0.29
2.25	2.66	0.40	5.00	0.00	0.29	0.29
2.30	2.66	0.40	5.00	0.00	0.29	0.29
2.35	2.66	0.40	5.00	0.00	0.29	0.29
2.40	2.66	0.40	5.00	0.00	0.29	0.29

2.45	2.66	0.40	5.00	0.00	0.29	0.29
2.50	2.66	0.40	5.00	0.00	0.29	0.29
2.55	2.66	0.40	5.00	0.00	0.29	0.29
2.60	2.66	0.40	5.00	0.00	0.29	0.29
2.65	2.66	0.40	5.00	0.00	0.29	0.29
2.70	2.66	0.40	5.00	0.00	0.29	0.29
2.75	2.66	0.40	5.00	0.00	0.29	0.29
2.80	2.66	0.40	5.00	0.00	0.29	0.29
2.85	2.66	0.40	5.00	0.00	0.29	0.29
2.90	2.66	0.40	5.00	0.00	0.29	0.29
2.95	2.66	0.40	5.00	0.00	0.29	0.29
3.00	2.66	0.40	5.00	0.00	0.29	0.29
3.05	2.66	0.40	5.00	0.00	0.29	0.29
3.10	2.66	0.40	5.00	0.00	0.29	0.29
3.15	2.66	0.40	5.00	0.00	0.29	0.29
3.20	2.66	0.40	5.00	0.00	0.29	0.29
3.25	2.66	0.40	5.00	0.00	0.29	0.29
3.30	2.66	0.40	5.00	0.00	0.29	0.29
3.35	2.66	0.40	5.00	0.00	0.29	0.29
3.40	2.66	0.40	5.00	0.00	0.29	0.29
3.45	2.66	0.40	5.00	0.00	0.29	0.29
3.50	2.66	0.40	5.00	0.00	0.29	0.29
3.55	2.66	0.40	5.00	0.00	0.29	0.29
3.60	2.66	0.40	5.00	0.00	0.29	0.29
3.65	2.66	0.40	5.00	0.00	0.29	0.29
3.70	2.66	0.40	5.00	0.00	0.29	0.29
3.75	2.66	0.40	5.00	0.00	0.29	0.29
3.80	2.66	0.40	5.00	0.00	0.29	0.29
3.85	2.66	0.40	5.00	0.00	0.29	0.29
3.90	2.66	0.40	5.00	0.00	0.29	0.29
3.95	2.66	0.40	5.00	0.00	0.29	0.29
4.00	2.66	0.40	5.00	0.00	0.29	0.29
4.05	2.66	0.40	5.00	0.00	0.29	0.29
4.10	2.66	0.40	5.00	0.00	0.29	0.29
4.15	2.66	0.40	5.00	0.00	0.29	0.29
4.20	2.66	0.40	5.00	0.00	0.29	0.29
4.25	2.66	0.40	5.00	0.00	0.29	0.29
4.30	2.66	0.40	5.00	0.00	0.29	0.29
4.35	2.66	0.40	5.00	0.00	0.29	0.29
4.40	2.66	0.40	5.00	0.00	0.29	0.29
4.45	2.66	0.40	5.00	0.00	0.29	0.29
4.50	2.66	0.40	5.00	0.00	0.29	0.29
4.55	2.66	0.40	5.00	0.00	0.29	0.29
4.60	2.66	0.40	5.00	0.00	0.29	0.29
4.65	2.66	0.40	5.00	0.00	0.29	0.29
4.70	2.66	0.40	5.00	0.00	0.29	0.29
4.75	2.66	0.40	5.00	0.00	0.29	0.29
4.80	2.66	0.40	5.00	0.00	0.29	0.29
4.85	2.66	0.40	5.00	0.00	0.29	0.29
4.90	2.66	0.40	5.00	0.00	0.29	0.29
4.95	2.66	0.40	5.00	0.00	0.29	0.29
5.00	2.66	0.40	5.00	0.00	0.29	0.29
5.05	2.66	0.40	5.00	0.00	0.29	0.29
5.10	2.66	0.40	5.00	0.00	0.29	0.29
5.15	2.66	0.40	5.00	0.00	0.29	0.29
5.20	2.66	0.40	5.00	0.00	0.29	0.29
5.25	2.66	0.40	5.00	0.00	0.29	0.29
5.30	2.66	0.40	5.00	0.00	0.29	0.29
5.35	2.66	0.40	5.00	0.00	0.29	0.29
5.40	2.66	0.40	5.00	0.00	0.28	0.28
5.45	2.66	0.40	5.00	0.00	0.28	0.28
5.50	2.66	0.40	5.00	0.00	0.28	0.28
5.55	2.66	0.40	5.00	0.00	0.28	0.28

5.60	2.66	0.40	5.00	0.00	0.28	0.28
5.65	2.66	0.40	5.00	0.00	0.28	0.28
5.70	2.66	0.40	5.00	0.00	0.28	0.28
5.75	2.66	0.40	5.00	0.00	0.28	0.28
5.80	2.66	0.40	5.00	0.00	0.28	0.28
5.85	2.66	0.40	5.00	0.00	0.28	0.28
5.90	2.66	0.40	5.00	0.00	0.28	0.28
5.95	2.66	0.40	5.00	0.00	0.28	0.28
6.00	2.66	0.40	5.00	0.00	0.28	0.28
6.05	2.66	0.40	5.00	0.00	0.28	0.28
6.10	2.66	0.40	5.00	0.00	0.28	0.28
6.15	0.65	0.40	5.00	0.00	0.28	0.28
6.20	0.59	0.40	5.00	0.00	0.28	0.28
6.25	0.56	0.40	5.00	0.00	0.28	0.28
6.30	0.53	0.40	5.00	0.00	0.28	0.28
6.35	0.51	0.40	5.00	0.00	0.28	0.28
6.40	0.49	0.40	5.00	0.00	0.28	0.28
6.45	0.48	0.40	5.00	0.00	0.28	0.28
6.50	0.46	0.40	5.00	0.00	0.28	0.28
6.55	0.45	0.40	5.00	0.00	0.28	0.28
6.60	0.44	0.40	5.00	0.00	0.28	0.28
6.65	0.44	0.40	5.00	0.00	0.28	0.28
6.70	0.43	0.40	5.00	0.00	0.28	0.28
6.75	0.42	0.40	5.00	0.00	0.28	0.28
6.80	0.41	0.40	5.00	0.00	0.28	0.28
6.85	0.40	0.40	5.00	0.00	0.28	0.28
6.90	0.40	0.40	5.00	0.00	0.28	0.28
6.95	0.39	0.40	5.00	0.00	0.28	0.28
7.00	0.38	0.40	5.00	0.00	0.28	0.28
7.05	0.38	0.40	5.00	0.00	0.28	0.28
7.10	0.37	0.40	5.00	0.00	0.28	0.28
7.15	0.37	0.40	5.00	0.00	0.28	0.28
7.20	0.36	0.40	5.00	0.00	0.27	0.27
7.25	0.36	0.40	5.00	0.00	0.27	0.27
7.30	0.35	0.40	5.00	0.00	0.27	0.27
7.35	0.35	0.40	5.00	0.00	0.27	0.27
7.40	0.34	0.40	5.00	0.00	0.27	0.27
7.45	0.34	0.40	5.00	0.00	0.27	0.27
7.50	0.33	0.40	5.00	0.00	0.27	0.27
7.55	0.33	0.40	5.00	0.00	0.27	0.27
7.60	0.33	0.40	5.00	0.00	0.27	0.27
7.65	0.34	0.40	5.00	0.00	0.27	0.27
7.70	0.34	0.40	5.00	0.00	0.27	0.27
7.75	0.34	0.40	5.00	0.00	0.27	0.27
7.80	0.34	0.40	5.00	0.00	0.27	0.27
7.85	0.35	0.40	5.00	0.00	0.27	0.27
7.90	0.35	0.40	5.00	0.00	0.27	0.27
7.95	0.36	0.40	5.00	0.00	0.27	0.27
8.00	0.36	0.40	5.00	0.00	0.26	0.26
8.05	0.37	0.40	5.00	0.00	0.26	0.26
8.10	0.38	0.40	5.00	0.00	0.26	0.26
8.15	0.38	0.40	5.00	0.00	0.26	0.26
8.20	0.39	0.40	5.00	0.00	0.26	0.26
8.25	0.50	0.40	5.00	0.00	0.26	0.26
8.30	0.51	0.40	5.00	0.00	0.26	0.26
8.35	0.53	0.40	5.00	0.00	0.26	0.26
8.40	0.57	0.40	5.00	0.00	0.26	0.26
8.45	0.65	0.40	5.00	0.00	0.26	0.26
8.50	2.66	0.40	5.00	0.00	0.26	0.26
8.55	2.66	0.40	5.00	0.00	0.26	0.26
8.60	2.66	0.40	5.00	0.00	0.26	0.26
8.65	2.66	0.40	5.00	0.00	0.26	0.26
8.70	2.66	0.40	5.00	0.00	0.26	0.26

8.75	2.66	0.40	5.00	0.00	0.26	0.26
8.80	2.66	0.40	5.00	0.00	0.26	0.26
8.85	2.66	0.40	5.00	0.00	0.26	0.26
8.90	2.66	0.40	5.00	0.00	0.26	0.26
8.95	2.66	0.40	5.00	0.00	0.26	0.26
9.00	2.66	0.40	5.00	0.00	0.26	0.26
9.05	2.66	0.40	5.00	0.00	0.26	0.26
9.10	2.66	0.40	5.00	0.00	0.26	0.26
9.15	2.66	0.40	5.00	0.00	0.26	0.26
9.20	2.66	0.40	5.00	0.00	0.25	0.25
9.25	2.66	0.40	5.00	0.00	0.25	0.25
9.30	2.66	0.40	5.00	0.00	0.25	0.25
9.35	2.66	0.40	5.00	0.00	0.25	0.25
9.40	2.66	0.40	5.00	0.00	0.25	0.25
9.45	2.66	0.40	5.00	0.00	0.25	0.25
9.50	2.66	0.39	5.00	0.00	0.25	0.25
9.55	2.66	0.39	5.00	0.00	0.25	0.25
9.60	2.66	0.39	5.00	0.00	0.25	0.25
9.65	2.66	0.39	5.00	0.00	0.25	0.25
9.70	2.66	0.39	5.00	0.00	0.25	0.25
9.75	2.66	0.39	5.00	0.00	0.25	0.25
9.80	2.66	0.39	5.00	0.00	0.25	0.25
9.85	2.66	0.39	5.00	0.00	0.25	0.25
9.90	2.66	0.39	5.00	0.00	0.25	0.25
9.95	2.66	0.39	5.00	0.00	0.25	0.25
10.00	2.66	0.39	5.00	0.00	0.25	0.25
10.05	2.66	0.39	5.00	0.00	0.25	0.25
10.10	2.66	0.39	5.00	0.00	0.25	0.25
10.15	2.66	0.39	5.00	0.00	0.25	0.25
10.20	2.66	0.39	5.00	0.00	0.25	0.25
10.25	2.66	0.39	5.00	0.00	0.25	0.25
10.30	2.66	0.39	5.00	0.00	0.25	0.25
10.35	2.66	0.39	5.00	0.00	0.25	0.25
10.40	2.66	0.39	5.00	0.00	0.25	0.25
10.45	2.66	0.39	5.00	0.00	0.25	0.25
10.50	2.66	0.39	5.00	0.00	0.25	0.25
10.55	2.66	0.39	5.00	0.00	0.25	0.25
10.60	2.66	0.39	5.00	0.00	0.25	0.25
10.65	2.66	0.39	5.00	0.00	0.25	0.25
10.70	2.66	0.39	5.00	0.00	0.25	0.25
10.75	2.66	0.39	5.00	0.00	0.25	0.25
10.80	2.66	0.39	5.00	0.00	0.25	0.25
10.85	2.66	0.39	5.00	0.00	0.25	0.25
10.90	2.66	0.39	5.00	0.00	0.25	0.25
10.95	2.66	0.39	5.00	0.00	0.25	0.25
11.00	2.66	0.39	5.00	0.00	0.25	0.25
11.05	2.66	0.39	5.00	0.00	0.25	0.25
11.10	2.66	0.39	5.00	0.00	0.25	0.25
11.15	2.66	0.39	5.00	0.00	0.25	0.25
11.20	2.66	0.39	5.00	0.00	0.25	0.25
11.25	2.66	0.39	5.00	0.00	0.24	0.24
11.30	2.66	0.39	5.00	0.00	0.24	0.24
11.35	2.66	0.39	5.00	0.00	0.24	0.24
11.40	2.66	0.39	5.00	0.00	0.24	0.24
11.45	2.66	0.39	5.00	0.00	0.24	0.24
11.50	2.66	0.39	5.00	0.00	0.24	0.24
11.55	2.66	0.39	5.00	0.00	0.24	0.24
11.60	2.66	0.39	5.00	0.00	0.24	0.24
11.65	2.66	0.39	5.00	0.00	0.24	0.24
11.70	2.66	0.39	5.00	0.00	0.24	0.24
11.75	2.66	0.39	5.00	0.00	0.24	0.24
11.80	2.66	0.39	5.00	0.00	0.24	0.24
11.85	2.66	0.39	5.00	0.00	0.24	0.24

11.90	2.66	0.39	5.00	0.00	0.24	0.24
11.95	2.66	0.39	5.00	0.00	0.24	0.24
12.00	2.66	0.39	5.00	0.00	0.24	0.24
12.05	2.66	0.39	5.00	0.00	0.24	0.24
12.10	2.66	0.39	5.00	0.00	0.24	0.24
12.15	2.66	0.39	5.00	0.00	0.24	0.24
12.20	2.66	0.39	5.00	0.00	0.24	0.24
12.25	2.66	0.39	5.00	0.00	0.24	0.24
12.30	2.66	0.39	5.00	0.00	0.24	0.24
12.35	2.66	0.39	5.00	0.00	0.24	0.24
12.40	2.66	0.39	5.00	0.00	0.24	0.24
12.45	2.66	0.39	5.00	0.00	0.24	0.24
12.50	2.66	0.39	5.00	0.00	0.24	0.24
12.55	2.66	0.39	5.00	0.00	0.24	0.24
12.60	2.66	0.39	5.00	0.00	0.24	0.24
12.65	2.66	0.39	5.00	0.00	0.24	0.24
12.70	2.66	0.39	5.00	0.00	0.24	0.24
12.75	2.66	0.39	5.00	0.00	0.24	0.24
12.80	2.66	0.39	5.00	0.00	0.24	0.24
12.85	2.66	0.39	5.00	0.00	0.24	0.24
12.90	2.66	0.39	5.00	0.00	0.24	0.24
12.95	2.66	0.39	5.00	0.00	0.24	0.24
13.00	2.66	0.39	5.00	0.00	0.24	0.24
13.05	2.66	0.39	5.00	0.00	0.23	0.23
13.10	2.66	0.39	5.00	0.00	0.23	0.23
13.15	2.66	0.39	5.00	0.00	0.23	0.23
13.20	2.66	0.39	5.00	0.00	0.23	0.23
13.25	2.66	0.39	5.00	0.00	0.23	0.23
13.30	2.66	0.39	5.00	0.00	0.23	0.23
13.35	2.66	0.39	5.00	0.00	0.23	0.23
13.40	2.66	0.39	5.00	0.00	0.23	0.23
13.45	2.66	0.39	5.00	0.00	0.23	0.23
13.50	2.66	0.39	5.00	0.00	0.23	0.23
13.55	2.66	0.39	5.00	0.00	0.23	0.23
13.60	2.66	0.39	5.00	0.00	0.23	0.23
13.65	2.66	0.39	5.00	0.00	0.23	0.23
13.70	2.66	0.39	5.00	0.00	0.23	0.23
13.75	2.66	0.39	5.00	0.00	0.23	0.23
13.80	2.66	0.39	5.00	0.00	0.23	0.23
13.85	2.66	0.39	5.00	0.00	0.23	0.23
13.90	2.66	0.39	5.00	0.00	0.23	0.23
13.95	2.66	0.39	5.00	0.00	0.23	0.23
14.00	2.66	0.39	5.00	0.00	0.23	0.23
14.05	2.66	0.39	5.00	0.00	0.23	0.23
14.10	2.66	0.39	5.00	0.00	0.23	0.23
14.15	2.66	0.39	5.00	0.00	0.23	0.23
14.20	2.66	0.39	5.00	0.00	0.23	0.23
14.25	2.66	0.39	5.00	0.00	0.23	0.23
14.30	2.66	0.39	5.00	0.00	0.23	0.23
14.35	2.66	0.39	5.00	0.00	0.23	0.23
14.40	2.66	0.39	5.00	0.00	0.23	0.23
14.45	2.66	0.39	5.00	0.00	0.23	0.23
14.50	2.66	0.39	5.00	0.00	0.23	0.23
14.55	2.66	0.39	5.00	0.00	0.23	0.23
14.60	2.66	0.39	5.00	0.00	0.23	0.23
14.65	2.66	0.39	5.00	0.00	0.23	0.23
14.70	2.66	0.39	5.00	0.00	0.22	0.22
14.75	2.66	0.39	5.00	0.00	0.22	0.22
14.80	2.66	0.39	5.00	0.00	0.22	0.22
14.85	2.66	0.39	5.00	0.00	0.22	0.22
14.90	2.66	0.39	5.00	0.00	0.22	0.22
14.95	2.66	0.39	5.00	0.00	0.22	0.22
15.00	2.66	0.39	5.00	0.00	0.22	0.22

15.05	2.66	0.39	5.00	0.00	0.22	0.22
15.10	2.66	0.39	5.00	0.00	0.22	0.22
15.15	2.66	0.39	5.00	0.00	0.22	0.22
15.20	2.66	0.39	5.00	0.00	0.22	0.22
15.25	2.66	0.39	5.00	0.00	0.22	0.22
15.30	2.66	0.39	5.00	0.00	0.22	0.22
15.35	2.66	0.39	5.00	0.00	0.22	0.22
15.40	2.66	0.39	5.00	0.00	0.22	0.22
15.45	2.66	0.39	5.00	0.00	0.22	0.22
15.50	2.66	0.39	5.00	0.00	0.22	0.22
15.55	2.66	0.39	5.00	0.00	0.22	0.22
15.60	2.66	0.39	5.00	0.00	0.22	0.22
15.65	2.66	0.39	5.00	0.00	0.22	0.22
15.70	2.66	0.39	5.00	0.00	0.22	0.22
15.75	2.66	0.39	5.00	0.00	0.22	0.22
15.80	2.66	0.39	5.00	0.00	0.22	0.22
15.85	2.66	0.39	5.00	0.00	0.22	0.22
15.90	2.66	0.39	5.00	0.00	0.22	0.22
15.95	2.66	0.39	5.00	0.00	0.22	0.22
16.00	2.66	0.39	5.00	0.00	0.22	0.22
16.05	2.66	0.39	5.00	0.00	0.22	0.22
16.10	2.66	0.39	5.00	0.00	0.22	0.22
16.15	2.66	0.39	5.00	0.00	0.22	0.22
16.20	2.66	0.39	5.00	0.00	0.22	0.22
16.25	2.66	0.39	5.00	0.00	0.22	0.22
16.30	2.66	0.39	5.00	0.00	0.22	0.22
16.35	2.66	0.39	5.00	0.00	0.22	0.22
16.40	2.66	0.39	5.00	0.00	0.22	0.22
16.45	2.66	0.39	5.00	0.00	0.22	0.22
16.50	2.66	0.39	5.00	0.00	0.22	0.22
16.55	2.66	0.39	5.00	0.00	0.22	0.22
16.60	2.66	0.39	5.00	0.00	0.22	0.22
16.65	2.66	0.39	5.00	0.00	0.22	0.22
16.70	2.66	0.39	5.00	0.00	0.21	0.21
16.75	2.66	0.39	5.00	0.00	0.21	0.21
16.80	2.66	0.39	5.00	0.00	0.21	0.21
16.85	2.66	0.39	5.00	0.00	0.21	0.21
16.90	2.66	0.39	5.00	0.00	0.21	0.21
16.95	2.66	0.39	5.00	0.00	0.21	0.21
17.00	2.66	0.39	5.00	0.00	0.21	0.21
17.05	2.66	0.39	5.00	0.00	0.21	0.21
17.10	2.66	0.39	5.00	0.00	0.21	0.21
17.15	2.66	0.39	5.00	0.00	0.21	0.21
17.20	2.66	0.39	5.00	0.00	0.21	0.21
17.25	2.66	0.39	5.00	0.00	0.21	0.21
17.30	2.66	0.39	5.00	0.00	0.21	0.21
17.35	2.66	0.39	5.00	0.00	0.21	0.21
17.40	2.66	0.39	5.00	0.00	0.21	0.21
17.45	2.66	0.39	5.00	0.00	0.21	0.21
17.50	2.66	0.39	5.00	0.00	0.21	0.21
17.55	2.66	0.39	5.00	0.00	0.21	0.21
17.60	2.66	0.39	5.00	0.00	0.21	0.21
17.65	2.66	0.39	5.00	0.00	0.21	0.21
17.70	2.66	0.39	5.00	0.00	0.21	0.21
17.75	2.66	0.39	5.00	0.00	0.21	0.21
17.80	2.66	0.39	5.00	0.00	0.21	0.21
17.85	2.66	0.39	5.00	0.00	0.21	0.21
17.90	2.66	0.39	5.00	0.00	0.21	0.21
17.95	2.66	0.39	5.00	0.00	0.21	0.21
18.00	2.66	0.39	5.00	0.00	0.21	0.21
18.05	2.66	0.39	5.00	0.00	0.21	0.21
18.10	2.66	0.39	5.00	0.00	0.21	0.21
18.15	2.66	0.39	5.00	0.00	0.21	0.21

18.20	2.66	0.39	5.00	0.00	0.21	0.21
18.25	2.66	0.39	5.00	0.00	0.21	0.21
18.30	2.66	0.39	5.00	0.00	0.21	0.21
18.35	2.66	0.39	5.00	0.00	0.21	0.21
18.40	2.66	0.39	5.00	0.00	0.21	0.21
18.45	2.66	0.39	5.00	0.00	0.21	0.21
18.50	2.66	0.39	5.00	0.00	0.21	0.21
18.55	2.66	0.39	5.00	0.00	0.21	0.21
18.60	2.66	0.39	5.00	0.00	0.21	0.21
18.65	2.66	0.39	5.00	0.00	0.21	0.21
18.70	2.66	0.39	5.00	0.00	0.21	0.21
18.75	2.66	0.39	5.00	0.00	0.21	0.21
18.80	2.66	0.39	5.00	0.00	0.21	0.21
18.85	2.66	0.39	5.00	0.00	0.20	0.20
18.90	2.66	0.39	5.00	0.00	0.20	0.20
18.95	2.66	0.39	5.00	0.00	0.20	0.20
19.00	2.66	0.39	5.00	0.00	0.20	0.20
19.05	2.66	0.39	5.00	0.00	0.20	0.20
19.10	2.66	0.39	5.00	0.00	0.20	0.20
19.15	2.66	0.39	5.00	0.00	0.20	0.20
19.20	2.66	0.39	5.00	0.00	0.20	0.20
19.25	2.66	0.39	5.00	0.00	0.20	0.20
19.30	2.66	0.39	5.00	0.00	0.20	0.20
19.35	2.66	0.39	5.00	0.00	0.20	0.20
19.40	2.66	0.39	5.00	0.00	0.20	0.20
19.45	2.66	0.39	5.00	0.00	0.20	0.20
19.50	2.66	0.39	5.00	0.00	0.20	0.20
19.55	2.66	0.39	5.00	0.00	0.20	0.20
19.60	2.66	0.39	5.00	0.00	0.20	0.20
19.65	2.66	0.39	5.00	0.00	0.20	0.20
19.70	2.66	0.39	5.00	0.00	0.20	0.20
19.75	2.66	0.39	5.00	0.00	0.20	0.20
19.80	2.66	0.39	5.00	0.00	0.20	0.20
19.85	2.66	0.39	5.00	0.00	0.20	0.20
19.90	2.66	0.39	5.00	0.00	0.20	0.20
19.95	2.66	0.39	5.00	0.00	0.20	0.20
20.00	2.66	0.39	5.00	0.00	0.20	0.20
20.05	2.66	0.39	5.00	0.00	0.20	0.20
20.10	2.66	0.38	5.00	0.00	0.20	0.20
20.15	2.66	0.38	5.00	0.00	0.20	0.20
20.20	2.66	0.38	5.00	0.00	0.20	0.20
20.25	2.66	0.38	5.00	0.00	0.20	0.20
20.30	2.66	0.38	5.00	0.00	0.20	0.20
20.35	2.66	0.38	5.00	0.00	0.20	0.20
20.40	2.66	0.38	5.00	0.00	0.20	0.20
20.45	2.66	0.38	5.00	0.00	0.20	0.20
20.50	2.66	0.38	5.00	0.00	0.20	0.20
20.55	2.66	0.38	5.00	0.00	0.20	0.20
20.60	2.66	0.38	5.00	0.00	0.20	0.20
20.65	2.66	0.38	5.00	0.00	0.20	0.20
20.70	2.66	0.38	5.00	0.00	0.20	0.20
20.75	2.66	0.38	5.00	0.00	0.20	0.20
20.80	2.66	0.38	5.00	0.00	0.20	0.20
20.85	2.66	0.38	5.00	0.00	0.20	0.20
20.90	2.66	0.38	5.00	0.00	0.20	0.20
20.95	2.66	0.38	5.00	0.00	0.20	0.20
21.00	2.66	0.38	5.00	0.00	0.20	0.20
21.05	2.66	0.38	5.00	0.00	0.20	0.20
21.10	2.66	0.38	5.00	0.00	0.20	0.20
21.15	2.66	0.38	5.00	0.00	0.20	0.20
21.20	2.66	0.38	5.00	0.00	0.20	0.20
21.25	2.66	0.38	5.00	0.00	0.20	0.20
21.30	2.66	0.38	5.00	0.00	0.20	0.20

21.35	2.66	0.38	5.00	0.00	0.20	0.20
21.40	2.66	0.38	5.00	0.00	0.20	0.20
21.45	2.66	0.38	5.00	0.00	0.20	0.20
21.50	2.66	0.38	5.00	0.00	0.20	0.20
21.55	2.66	0.38	5.00	0.00	0.20	0.20
21.60	2.66	0.38	5.00	0.00	0.19	0.19
21.65	2.66	0.38	5.00	0.00	0.19	0.19
21.70	2.66	0.38	5.00	0.00	0.19	0.19
21.75	2.66	0.38	5.00	0.00	0.19	0.19
21.80	2.66	0.38	5.00	0.00	0.19	0.19
21.85	2.66	0.38	5.00	0.00	0.19	0.19
21.90	2.66	0.38	5.00	0.00	0.19	0.19
21.95	2.66	0.38	5.00	0.00	0.19	0.19
22.00	2.66	0.38	5.00	0.00	0.19	0.19
22.05	2.66	0.38	5.00	0.00	0.19	0.19
22.10	2.66	0.38	5.00	0.00	0.19	0.19
22.15	2.66	0.38	5.00	0.00	0.19	0.19
22.20	2.66	0.38	5.00	0.00	0.19	0.19
22.25	2.66	0.38	5.00	0.00	0.19	0.19
22.30	2.66	0.38	5.00	0.00	0.19	0.19
22.35	2.66	0.38	5.00	0.00	0.19	0.19
22.40	2.66	0.38	5.00	0.00	0.19	0.19
22.45	2.66	0.38	5.00	0.00	0.19	0.19
22.50	2.66	0.38	5.00	0.00	0.19	0.19
22.55	2.66	0.38	5.00	0.00	0.19	0.19
22.60	2.66	0.38	5.00	0.00	0.19	0.19
22.65	2.66	0.38	5.00	0.00	0.19	0.19
22.70	2.66	0.38	5.00	0.00	0.19	0.19
22.75	2.66	0.38	5.00	0.00	0.19	0.19
22.80	2.66	0.38	5.00	0.00	0.19	0.19
22.85	2.66	0.38	5.00	0.00	0.19	0.19
22.90	2.66	0.38	5.00	0.00	0.19	0.19
22.95	2.66	0.38	5.00	0.00	0.19	0.19
23.00	2.66	0.38	5.00	0.00	0.19	0.19
23.05	2.66	0.38	5.00	0.00	0.19	0.19
23.10	2.66	0.38	5.00	0.00	0.19	0.19
23.15	2.66	0.38	5.00	0.00	0.19	0.19
23.20	2.66	0.38	5.00	0.00	0.19	0.19
23.25	2.66	0.38	5.00	0.00	0.19	0.19
23.30	2.66	0.38	5.00	0.00	0.19	0.19
23.35	2.66	0.38	5.00	0.00	0.19	0.19
23.40	2.66	0.38	5.00	0.00	0.19	0.19
23.45	2.66	0.38	5.00	0.00	0.19	0.19
23.50	2.66	0.38	5.00	0.00	0.19	0.19
23.55	2.66	0.38	5.00	0.00	0.19	0.19
23.60	2.66	0.38	5.00	0.00	0.19	0.19
23.65	2.66	0.38	5.00	0.00	0.19	0.19
23.70	2.66	0.38	5.00	0.00	0.19	0.19
23.75	2.66	0.38	5.00	0.00	0.19	0.19
23.80	2.66	0.38	5.00	0.00	0.18	0.18
23.85	2.66	0.38	5.00	0.00	0.18	0.18
23.90	2.66	0.38	5.00	0.00	0.18	0.18
23.95	2.66	0.38	5.00	0.00	0.18	0.18
24.00	2.66	0.38	5.00	0.00	0.18	0.18
24.05	2.66	0.38	5.00	0.00	0.18	0.18
24.10	2.66	0.38	5.00	0.00	0.18	0.18
24.15	2.66	0.38	5.00	0.00	0.18	0.18
24.20	2.66	0.38	5.00	0.00	0.18	0.18
24.25	2.66	0.38	5.00	0.00	0.18	0.18
24.30	2.66	0.38	5.00	0.00	0.18	0.18
24.35	2.66	0.38	5.00	0.00	0.18	0.18
24.40	2.66	0.38	5.00	0.00	0.18	0.18
24.45	2.66	0.38	5.00	0.00	0.18	0.18

24.50	2.66	0.38	5.00	0.00	0.18	0.18
24.55	2.66	0.38	5.00	0.00	0.18	0.18
24.60	2.66	0.38	5.00	0.00	0.18	0.18
24.65	2.66	0.38	5.00	0.00	0.18	0.18
24.70	2.66	0.38	5.00	0.00	0.18	0.18
24.75	2.66	0.38	5.00	0.00	0.18	0.18
24.80	2.66	0.38	5.00	0.00	0.18	0.18
24.85	2.66	0.38	5.00	0.00	0.18	0.18
24.90	2.66	0.38	5.00	0.00	0.18	0.18
24.95	2.66	0.38	5.00	0.00	0.18	0.18
25.00	2.66	0.38	5.00	0.00	0.18	0.18
25.05	2.66	0.38	5.00	0.00	0.18	0.18
25.10	2.66	0.38	5.00	0.00	0.18	0.18
25.15	2.66	0.38	5.00	0.00	0.18	0.18
25.20	2.66	0.38	5.00	0.00	0.17	0.17
25.25	2.66	0.38	5.00	0.00	0.17	0.17
25.30	2.66	0.38	5.00	0.00	0.17	0.17
25.35	2.66	0.38	5.00	0.00	0.17	0.17
25.40	2.66	0.38	5.00	0.00	0.17	0.17
25.45	2.66	0.38	5.00	0.00	0.17	0.17
25.50	2.66	0.38	5.00	0.00	0.17	0.17
25.55	2.67	0.38	5.00	0.00	0.17	0.17
25.60	2.67	0.38	5.00	0.00	0.17	0.17
25.65	2.67	0.38	5.00	0.00	0.17	0.17
25.70	2.67	0.38	5.00	0.00	0.17	0.17
25.75	2.67	0.38	5.00	0.00	0.17	0.17
25.80	2.67	0.38	5.00	0.00	0.17	0.17
25.85	2.67	0.38	5.00	0.00	0.17	0.17
25.90	2.67	0.38	5.00	0.00	0.17	0.17
25.95	2.67	0.38	5.00	0.00	0.17	0.17
26.00	2.67	0.38	5.00	0.00	0.17	0.17
26.05	2.67	0.38	5.00	0.00	0.17	0.17
26.10	2.66	0.38	5.00	0.00	0.17	0.17
26.15	2.66	0.38	5.00	0.00	0.17	0.17
26.20	2.66	0.38	5.00	0.00	0.16	0.16
26.25	2.66	0.38	5.00	0.00	0.16	0.16
26.30	2.66	0.38	5.00	0.00	0.16	0.16
26.35	2.66	0.38	5.00	0.00	0.16	0.16
26.40	2.66	0.38	5.00	0.00	0.16	0.16
26.45	2.66	0.38	5.00	0.00	0.16	0.16
26.50	2.66	0.38	5.00	0.00	0.16	0.16
26.55	2.66	0.38	5.00	0.00	0.16	0.16
26.60	2.66	0.38	5.00	0.00	0.16	0.16
26.65	2.66	0.38	5.00	0.00	0.16	0.16
26.70	2.65	0.38	5.00	0.00	0.16	0.16
26.75	2.65	0.38	5.00	0.00	0.16	0.16
26.80	2.65	0.38	5.00	0.00	0.16	0.16
26.85	2.65	0.38	5.00	0.00	0.16	0.16
26.90	2.65	0.38	5.00	0.00	0.16	0.16
26.95	2.65	0.38	5.00	0.00	0.16	0.16
27.00	2.65	0.38	5.00	0.00	0.16	0.16
27.05	2.65	0.38	5.00	0.00	0.16	0.16
27.10	2.65	0.38	5.00	0.00	0.16	0.16
27.15	2.65	0.38	5.00	0.00	0.16	0.16
27.20	2.65	0.38	5.00	0.00	0.16	0.16
27.25	2.65	0.38	5.00	0.00	0.16	0.16
27.30	2.64	0.38	5.00	0.00	0.15	0.15
27.35	2.64	0.38	5.00	0.00	0.15	0.15
27.40	2.64	0.38	5.00	0.00	0.15	0.15
27.45	2.64	0.38	5.00	0.00	0.15	0.15
27.50	2.64	0.38	5.00	0.00	0.15	0.15
27.55	2.64	0.38	5.00	0.00	0.15	0.15
27.60	2.64	0.38	5.00	0.00	0.15	0.15

27.65	2.64	0.38	5.00	0.00	0.15	0.15
27.70	2.64	0.38	5.00	0.00	0.15	0.15
27.75	2.64	0.38	5.00	0.00	0.15	0.15
27.80	2.64	0.38	5.00	0.00	0.15	0.15
27.85	2.64	0.38	5.00	0.00	0.15	0.15
27.90	2.63	0.38	5.00	0.00	0.15	0.15
27.95	2.63	0.38	5.00	0.00	0.15	0.15
28.00	2.63	0.38	5.00	0.00	0.15	0.15
28.05	2.63	0.38	5.00	0.00	0.15	0.15
28.10	2.63	0.38	5.00	0.00	0.15	0.15
28.15	2.63	0.38	5.00	0.00	0.15	0.15
28.20	2.63	0.38	5.00	0.00	0.15	0.15
28.25	2.63	0.38	5.00	0.00	0.15	0.15
28.30	2.63	0.38	5.00	0.00	0.15	0.15
28.35	2.63	0.38	5.00	0.00	0.15	0.15
28.40	2.63	0.38	5.00	0.00	0.15	0.15
28.45	2.63	0.38	5.00	0.00	0.14	0.14
28.50	2.62	0.38	5.00	0.00	0.14	0.14
28.55	2.62	0.38	5.00	0.00	0.14	0.14
28.60	2.62	0.38	5.00	0.00	0.14	0.14
28.65	2.62	0.38	5.00	0.00	0.14	0.14
28.70	2.62	0.38	5.00	0.00	0.14	0.14
28.75	2.62	0.38	5.00	0.00	0.14	0.14
28.80	2.62	0.38	5.00	0.00	0.14	0.14
28.85	2.62	0.38	5.00	0.00	0.14	0.14
28.90	2.62	0.38	5.00	0.00	0.14	0.14
28.95	2.62	0.38	5.00	0.00	0.14	0.14
29.00	2.62	0.38	5.00	0.00	0.14	0.14
29.05	2.62	0.38	5.00	0.00	0.14	0.14
29.10	2.61	0.38	5.00	0.00	0.14	0.14
29.15	2.61	0.38	5.00	0.00	0.14	0.14
29.20	2.61	0.38	5.00	0.00	0.14	0.14
29.25	2.61	0.38	5.00	0.00	0.14	0.14
29.30	2.61	0.38	5.00	0.00	0.14	0.14
29.35	2.61	0.38	5.00	0.00	0.14	0.14
29.40	2.61	0.38	5.00	0.00	0.14	0.14
29.45	2.61	0.38	5.00	0.00	0.14	0.14
29.50	2.61	0.38	5.00	0.00	0.14	0.14
29.55	2.61	0.38	5.00	0.00	0.14	0.14
29.60	2.61	0.38	5.00	0.00	0.14	0.14
29.65	2.61	0.38	5.00	0.00	0.14	0.14
29.70	2.61	0.38	5.00	0.00	0.14	0.14
29.75	2.60	0.38	5.00	0.00	0.13	0.13
29.80	2.60	0.38	5.00	0.00	0.13	0.13
29.85	2.60	0.38	5.00	0.00	0.13	0.13
29.90	2.60	0.38	5.00	0.00	0.13	0.13
29.95	2.60	0.38	5.00	0.00	0.13	0.13
30.00	2.60	0.38	5.00	0.00	0.13	0.13
30.05	2.60	0.38	5.00	0.00	0.13	0.13
30.10	2.60	0.38	5.00	0.00	0.13	0.13
30.15	2.60	0.38	5.00	0.00	0.13	0.13
30.20	2.60	0.37	5.00	0.00	0.13	0.13
30.25	2.60	0.37	5.00	0.00	0.13	0.13
30.30	2.60	0.37	5.00	0.00	0.13	0.13
30.35	2.60	0.37	5.00	0.00	0.13	0.13
30.40	2.59	0.37	5.00	0.00	0.13	0.13
30.45	2.59	0.37	5.00	0.00	0.13	0.13
30.50	2.59	0.37	5.00	0.00	0.13	0.13
30.55	2.59	0.37	5.00	0.00	0.13	0.13
30.60	2.59	0.37	5.00	0.00	0.13	0.13
30.65	2.59	0.37	5.00	0.00	0.13	0.13
30.70	2.59	0.37	5.00	0.00	0.13	0.13
30.75	2.59	0.37	5.00	0.00	0.13	0.13

30.80	2.59	0.37	5.00	0.00	0.13	0.13
30.85	2.59	0.37	5.00	0.00	0.13	0.13
30.90	2.59	0.37	5.00	0.00	0.13	0.13
30.95	2.59	0.37	5.00	0.00	0.13	0.13
31.00	2.58	0.37	5.00	0.00	0.13	0.13
31.05	2.58	0.37	5.00	0.00	0.12	0.12
31.10	2.58	0.37	5.00	0.00	0.12	0.12
31.15	2.58	0.37	5.00	0.00	0.12	0.12
31.20	2.58	0.37	5.00	0.00	0.12	0.12
31.25	2.58	0.37	5.00	0.00	0.12	0.12
31.30	2.58	0.37	5.00	0.00	0.12	0.12
31.35	2.58	0.37	5.00	0.00	0.12	0.12
31.40	2.58	0.37	5.00	0.00	0.12	0.12
31.45	2.58	0.37	5.00	0.00	0.12	0.12
31.50	2.58	0.37	5.00	0.00	0.12	0.12
31.55	2.58	0.37	5.00	0.00	0.12	0.12
31.60	2.58	0.37	5.00	0.00	0.12	0.12
31.65	2.57	0.37	5.00	0.00	0.12	0.12
31.70	2.57	0.37	5.00	0.00	0.12	0.12
31.75	2.57	0.37	5.00	0.00	0.12	0.12
31.80	2.57	0.37	5.00	0.00	0.12	0.12
31.85	2.57	0.37	5.00	0.00	0.12	0.12
31.90	2.57	0.37	5.00	0.00	0.12	0.12
31.95	2.57	0.37	5.00	0.00	0.12	0.12
32.00	2.57	0.37	5.00	0.00	0.12	0.12
32.05	2.57	0.37	5.00	0.00	0.12	0.12
32.10	2.57	0.37	5.00	0.00	0.12	0.12
32.15	2.57	0.37	5.00	0.00	0.12	0.12
32.20	2.57	0.37	5.00	0.00	0.12	0.12
32.25	2.57	0.37	5.00	0.00	0.11	0.11
32.30	2.57	0.37	5.00	0.00	0.11	0.11
32.35	2.56	0.37	5.00	0.00	0.11	0.11
32.40	2.56	0.37	5.00	0.00	0.11	0.11
32.45	2.56	0.37	5.00	0.00	0.11	0.11
32.50	2.56	0.37	5.00	0.00	0.11	0.11
32.55	2.56	0.37	5.00	0.00	0.11	0.11
32.60	2.56	0.37	5.00	0.00	0.11	0.11
32.65	2.56	0.37	5.00	0.00	0.11	0.11
32.70	2.56	0.37	5.00	0.00	0.11	0.11
32.75	2.56	0.37	5.00	0.00	0.11	0.11
32.80	2.56	0.37	5.00	0.00	0.11	0.11
32.85	2.56	0.37	5.00	0.00	0.11	0.11
32.90	2.56	0.37	5.00	0.00	0.11	0.11
32.95	2.56	0.37	5.00	0.00	0.11	0.11
33.00	2.55	0.37	5.00	0.00	0.11	0.11
33.05	2.55	0.37	5.00	0.00	0.11	0.11
33.10	2.55	0.37	5.00	0.00	0.11	0.11
33.15	2.55	0.37	5.00	0.00	0.11	0.11
33.20	2.55	0.37	5.00	0.00	0.11	0.11
33.25	2.55	0.36	5.00	0.00	0.11	0.11
33.30	2.55	0.36	5.00	0.00	0.10	0.10
33.35	2.55	0.36	5.00	0.00	0.10	0.10
33.40	2.55	0.36	5.00	0.00	0.10	0.10
33.45	2.55	0.36	5.00	0.00	0.10	0.10
33.50	2.55	0.36	5.00	0.00	0.10	0.10
33.55	2.55	0.36	5.00	0.00	0.10	0.10
33.60	2.55	0.36	5.00	0.00	0.10	0.10
33.65	2.54	0.36	5.00	0.00	0.10	0.10
33.70	2.54	0.36	5.00	0.00	0.10	0.10
33.75	2.54	0.36	5.00	0.00	0.10	0.10
33.80	2.54	0.36	5.00	0.00	0.10	0.10
33.85	2.54	0.36	5.00	0.00	0.10	0.10
33.90	2.54	0.36	5.00	0.00	0.10	0.10

33.95	2.54	0.36	5.00	0.00	0.10	0.10
34.00	2.54	0.36	5.00	0.00	0.10	0.10
34.05	2.54	0.36	5.00	0.00	0.10	0.10
34.10	2.54	0.36	5.00	0.00	0.10	0.10
34.15	2.54	0.36	5.00	0.00	0.10	0.10
34.20	2.54	0.36	5.00	0.00	0.10	0.10
34.25	2.54	0.36	5.00	0.00	0.09	0.09
34.30	2.54	0.36	5.00	0.00	0.09	0.09
34.35	2.53	0.36	5.00	0.00	0.09	0.09
34.40	2.53	0.36	5.00	0.00	0.09	0.09
34.45	2.53	0.36	5.00	0.00	0.09	0.09
34.50	2.53	0.36	5.00	0.00	0.09	0.09
34.55	2.53	0.36	5.00	0.00	0.09	0.09
34.60	2.53	0.36	5.00	0.00	0.09	0.09
34.65	2.53	0.36	5.00	0.00	0.09	0.09
34.70	2.53	0.36	5.00	0.00	0.09	0.09
34.75	2.53	0.36	5.00	0.00	0.09	0.09
34.80	2.53	0.36	5.00	0.00	0.09	0.09
34.85	2.53	0.36	5.00	0.00	0.09	0.09
34.90	2.53	0.36	5.00	0.00	0.09	0.09
34.95	2.53	0.36	5.00	0.00	0.09	0.09
35.00	2.52	0.36	5.00	0.00	0.09	0.09
35.05	2.52	0.36	5.00	0.00	0.09	0.09
35.10	2.52	0.36	5.00	0.00	0.09	0.09
35.15	2.52	0.36	5.00	0.00	0.08	0.08
35.20	2.52	0.36	5.00	0.00	0.08	0.08
35.25	2.52	0.36	5.00	0.00	0.08	0.08
35.30	2.52	0.36	5.00	0.00	0.08	0.08
35.35	2.52	0.36	5.00	0.00	0.08	0.08
35.40	2.52	0.36	5.00	0.00	0.08	0.08
35.45	2.52	0.36	5.00	0.00	0.08	0.08
35.50	2.52	0.36	5.00	0.00	0.08	0.08
35.55	2.52	0.36	5.00	0.00	0.08	0.08
35.60	2.52	0.36	5.00	0.00	0.08	0.08
35.65	2.52	0.36	5.00	0.00	0.08	0.08
35.70	2.51	0.36	5.00	0.00	0.08	0.08
35.75	2.51	0.36	5.00	0.00	0.08	0.08
35.80	2.51	0.36	5.00	0.00	0.08	0.08
35.85	2.51	0.36	5.00	0.00	0.08	0.08
35.90	2.51	0.36	5.00	0.00	0.08	0.08
35.95	2.51	0.36	5.00	0.00	0.08	0.08
36.00	2.51	0.36	5.00	0.00	0.08	0.08
36.05	2.51	0.36	5.00	0.00	0.08	0.08
36.10	2.51	0.36	5.00	0.00	0.08	0.08
36.15	2.51	0.36	5.00	0.00	0.08	0.08
36.20	2.51	0.36	5.00	0.00	0.08	0.08
36.25	2.51	0.36	5.00	0.00	0.08	0.08
36.30	2.51	0.35	5.00	0.00	0.08	0.08
36.35	2.51	0.35	5.00	0.00	0.07	0.07
36.40	2.50	0.35	5.00	0.00	0.07	0.07
36.45	2.50	0.35	5.00	0.00	0.07	0.07
36.50	2.50	0.35	5.00	0.00	0.07	0.07
36.55	2.50	0.35	5.00	0.00	0.07	0.07
36.60	2.50	0.35	5.00	0.00	0.07	0.07
36.65	2.50	0.35	5.00	0.00	0.07	0.07
36.70	2.50	0.35	5.00	0.00	0.07	0.07
36.75	2.50	0.35	5.00	0.00	0.07	0.07
36.80	2.50	0.35	5.00	0.00	0.07	0.07
36.85	2.50	0.35	5.00	0.00	0.07	0.07
36.90	2.50	0.35	5.00	0.00	0.07	0.07
36.95	2.50	0.35	5.00	0.00	0.07	0.07
37.00	2.50	0.35	5.00	0.00	0.07	0.07
37.05	2.50	0.35	5.00	0.00	0.07	0.07

37.10	2.49	0.35	5.00	0.00	0.07	0.07
37.15	2.49	0.35	5.00	0.00	0.07	0.07
37.20	2.49	0.35	5.00	0.00	0.07	0.07
37.25	2.49	0.35	5.00	0.00	0.07	0.07
37.30	2.49	0.35	5.00	0.00	0.07	0.07
37.35	2.49	0.35	5.00	0.00	0.07	0.07
37.40	2.49	0.35	5.00	0.00	0.07	0.07
37.45	2.49	0.35	5.00	0.00	0.07	0.07
37.50	2.49	0.35	5.00	0.00	0.07	0.07
37.55	2.49	0.35	5.00	0.00	0.07	0.07
37.60	2.49	0.35	5.00	0.00	0.07	0.07
37.65	2.49	0.35	5.00	0.00	0.07	0.07
37.70	2.49	0.35	5.00	0.00	0.07	0.07
37.75	2.48	0.35	5.00	0.00	0.06	0.06
37.80	2.48	0.35	5.00	0.00	0.06	0.06
37.85	2.48	0.35	5.00	0.00	0.06	0.06
37.90	2.48	0.35	5.00	0.00	0.06	0.06
37.95	2.48	0.35	5.00	0.00	0.06	0.06
38.00	2.48	0.35	5.00	0.00	0.06	0.06
38.05	2.48	0.35	5.00	0.00	0.06	0.06
38.10	2.48	0.35	5.00	0.00	0.06	0.06
38.15	2.48	0.35	5.00	0.00	0.06	0.06
38.20	2.48	0.35	5.00	0.00	0.06	0.06
38.25	2.48	0.35	5.00	0.00	0.06	0.06
38.30	2.48	0.35	5.00	0.00	0.06	0.06
38.35	2.48	0.35	5.00	0.00	0.06	0.06
38.40	2.48	0.35	5.00	0.00	0.06	0.06
38.45	2.48	0.35	5.00	0.00	0.06	0.06
38.50	2.47	0.35	5.00	0.00	0.06	0.06
38.55	2.47	0.35	5.00	0.00	0.06	0.06
38.60	2.47	0.35	5.00	0.00	0.06	0.06
38.65	2.47	0.35	5.00	0.00	0.06	0.06
38.70	2.47	0.35	5.00	0.00	0.06	0.06
38.75	2.47	0.35	5.00	0.00	0.06	0.06
38.80	2.47	0.35	5.00	0.00	0.06	0.06
38.85	2.47	0.35	5.00	0.00	0.06	0.06
38.90	2.47	0.35	5.00	0.00	0.06	0.06
38.95	2.47	0.35	5.00	0.00	0.06	0.06
39.00	2.47	0.35	5.00	0.00	0.06	0.06
39.05	2.47	0.35	5.00	0.00	0.06	0.06
39.10	2.47	0.35	5.00	0.00	0.06	0.06
39.15	2.47	0.35	5.00	0.00	0.06	0.06
39.20	2.46	0.35	5.00	0.00	0.06	0.06
39.25	2.46	0.35	5.00	0.00	0.06	0.06
39.30	2.46	0.35	5.00	0.00	0.06	0.06
39.35	2.46	0.34	5.00	0.00	0.06	0.06
39.40	2.46	0.34	5.00	0.00	0.06	0.06
39.45	2.46	0.34	5.00	0.00	0.06	0.06
39.50	2.46	0.34	5.00	0.00	0.06	0.06
39.55	2.46	0.34	5.00	0.00	0.06	0.06
39.60	2.46	0.34	5.00	0.00	0.06	0.06
39.65	2.46	0.34	5.00	0.00	0.06	0.06
39.70	2.46	0.34	5.00	0.00	0.06	0.06
39.75	2.46	0.34	5.00	0.00	0.06	0.06
39.80	2.46	0.34	5.00	0.00	0.05	0.05
39.85	2.46	0.34	5.00	0.00	0.05	0.05
39.90	2.45	0.34	5.00	0.00	0.05	0.05
39.95	2.45	0.34	5.00	0.00	0.05	0.05
40.00	2.45	0.34	5.00	0.00	0.05	0.05
40.05	2.45	0.34	5.00	0.00	0.05	0.05
40.10	2.45	0.34	5.00	0.00	0.05	0.05
40.15	2.45	0.34	5.00	0.00	0.05	0.05
40.20	2.45	0.34	5.00	0.00	0.05	0.05

40.25	2.45	0.34	5.00	0.00	0.05	0.05
40.30	2.45	0.34	5.00	0.00	0.05	0.05
40.35	2.45	0.34	5.00	0.00	0.05	0.05
40.40	2.45	0.34	5.00	0.00	0.05	0.05
40.45	2.45	0.34	5.00	0.00	0.05	0.05
40.50	2.45	0.34	5.00	0.00	0.05	0.05
40.55	2.45	0.34	5.00	0.00	0.05	0.05
40.60	2.44	0.34	5.00	0.00	0.05	0.05
40.65	2.44	0.34	5.00	0.00	0.05	0.05
40.70	2.44	0.34	5.00	0.00	0.05	0.05
40.75	2.44	0.34	5.00	0.00	0.05	0.05
40.80	2.44	0.34	5.00	0.00	0.05	0.05
40.85	2.44	0.34	5.00	0.00	0.05	0.05
40.90	2.44	0.34	5.00	0.00	0.05	0.05
40.95	2.44	0.34	5.00	0.00	0.05	0.05
41.00	2.44	0.34	5.00	0.00	0.05	0.05
41.05	2.44	0.34	5.00	0.00	0.05	0.05
41.10	2.44	0.34	5.00	0.00	0.05	0.05
41.15	2.44	0.34	5.00	0.00	0.05	0.05
41.20	2.44	0.34	5.00	0.00	0.05	0.05
41.25	2.44	0.34	5.00	0.00	0.05	0.05
41.30	2.44	0.34	5.00	0.00	0.05	0.05
41.35	2.43	0.34	5.00	0.00	0.05	0.05
41.40	2.43	0.34	5.00	0.00	0.05	0.05
41.45	2.43	0.34	5.00	0.00	0.05	0.05
41.50	2.43	0.34	5.00	0.00	0.05	0.05
41.55	2.43	0.34	5.00	0.00	0.05	0.05
41.60	2.43	0.34	5.00	0.00	0.05	0.05
41.65	2.43	0.34	5.00	0.00	0.05	0.05
41.70	2.43	0.34	5.00	0.00	0.05	0.05
41.75	2.43	0.34	5.00	0.00	0.05	0.05
41.80	2.43	0.34	5.00	0.00	0.05	0.05
41.85	2.43	0.34	5.00	0.00	0.05	0.05
41.90	2.43	0.34	5.00	0.00	0.05	0.05
41.95	2.43	0.34	5.00	0.00	0.05	0.05
42.00	2.43	0.34	5.00	0.00	0.05	0.05
42.05	2.43	0.34	5.00	0.00	0.04	0.04
42.10	2.42	0.34	5.00	0.00	0.04	0.04
42.15	2.42	0.34	5.00	0.00	0.04	0.04
42.20	2.42	0.34	5.00	0.00	0.04	0.04
42.25	2.42	0.34	5.00	0.00	0.04	0.04
42.30	2.42	0.34	5.00	0.00	0.04	0.04
42.35	2.42	0.33	5.00	0.00	0.04	0.04
42.40	2.42	0.33	5.00	0.00	0.04	0.04
42.45	2.42	0.33	5.00	0.00	0.04	0.04
42.50	2.42	0.33	5.00	0.00	0.04	0.04
42.55	2.42	0.33	5.00	0.00	0.04	0.04
42.60	2.42	0.33	5.00	0.00	0.04	0.04
42.65	2.42	0.33	5.00	0.00	0.04	0.04
42.70	2.42	0.33	5.00	0.00	0.04	0.04
42.75	2.42	0.33	5.00	0.00	0.04	0.04
42.80	2.42	0.33	5.00	0.00	0.04	0.04
42.85	2.41	0.33	5.00	0.00	0.04	0.04
42.90	2.41	0.33	5.00	0.00	0.04	0.04
42.95	2.41	0.33	5.00	0.00	0.04	0.04
43.00	2.41	0.33	5.00	0.00	0.04	0.04
43.05	2.41	0.33	5.00	0.00	0.04	0.04
43.10	2.41	0.33	5.00	0.00	0.04	0.04
43.15	2.41	0.33	5.00	0.00	0.04	0.04
43.20	2.41	0.33	5.00	0.00	0.04	0.04
43.25	2.41	0.33	5.00	0.00	0.04	0.04
43.30	2.41	0.33	5.00	0.00	0.04	0.04
43.35	2.41	0.33	5.00	0.00	0.04	0.04

43.40	2.41	0.33	5.00	0.00	0.04	0.04
43.45	2.41	0.33	5.00	0.00	0.04	0.04
43.50	2.41	0.33	5.00	0.00	0.04	0.04
43.55	2.41	0.33	5.00	0.00	0.04	0.04
43.60	2.40	0.33	5.00	0.00	0.04	0.04
43.65	2.40	0.33	5.00	0.00	0.04	0.04
43.70	2.40	0.33	5.00	0.00	0.04	0.04
43.75	2.40	0.33	5.00	0.00	0.04	0.04
43.80	2.40	0.33	5.00	0.00	0.04	0.04
43.85	2.40	0.33	5.00	0.00	0.04	0.04
43.90	2.40	0.33	5.00	0.00	0.04	0.04
43.95	2.40	0.33	5.00	0.00	0.04	0.04
44.00	2.40	0.33	5.00	0.00	0.04	0.04
44.05	2.40	0.33	5.00	0.00	0.03	0.03
44.10	2.40	0.33	5.00	0.00	0.03	0.03
44.15	2.40	0.33	5.00	0.00	0.03	0.03
44.20	2.40	0.33	5.00	0.00	0.03	0.03
44.25	2.40	0.33	5.00	0.00	0.03	0.03
44.30	2.40	0.33	5.00	0.00	0.03	0.03
44.35	2.39	0.33	5.00	0.00	0.03	0.03
44.40	2.39	0.33	5.00	0.00	0.03	0.03
44.45	2.39	0.33	5.00	0.00	0.03	0.03
44.50	2.39	0.33	5.00	0.00	0.03	0.03
44.55	2.39	0.33	5.00	0.00	0.03	0.03
44.60	2.39	0.33	5.00	0.00	0.03	0.03
44.65	2.39	0.33	5.00	0.00	0.03	0.03
44.70	2.39	0.33	5.00	0.00	0.03	0.03
44.75	2.39	0.33	5.00	0.00	0.03	0.03
44.80	2.39	0.33	5.00	0.00	0.03	0.03
44.85	2.39	0.33	5.00	0.00	0.03	0.03
44.90	2.39	0.33	5.00	0.00	0.03	0.03
44.95	2.39	0.33	5.00	0.00	0.03	0.03
45.00	2.39	0.33	5.00	0.00	0.03	0.03
45.05	2.39	0.33	5.00	0.00	0.03	0.03
45.10	2.38	0.33	5.00	0.00	0.03	0.03
45.15	2.38	0.33	5.00	0.00	0.03	0.03
45.20	2.38	0.33	5.00	0.00	0.03	0.03
45.25	2.38	0.33	5.00	0.00	0.03	0.03
45.30	2.38	0.33	5.00	0.00	0.03	0.03
45.35	2.38	0.33	5.00	0.00	0.03	0.03
45.40	2.38	0.32	5.00	0.00	0.03	0.03
45.45	2.38	0.32	5.00	0.00	0.03	0.03
45.50	2.38	0.32	5.00	0.00	0.03	0.03
45.55	2.38	0.32	5.00	0.00	0.03	0.03
45.60	2.38	0.32	5.00	0.00	0.03	0.03
45.65	2.38	0.32	5.00	0.00	0.03	0.03
45.70	2.38	0.32	5.00	0.00	0.03	0.03
45.75	2.38	0.32	5.00	0.00	0.03	0.03
45.80	2.38	0.32	5.00	0.00	0.02	0.02
45.85	2.38	0.32	5.00	0.00	0.02	0.02
45.90	2.37	0.32	5.00	0.00	0.02	0.02
45.95	2.37	0.32	5.00	0.00	0.02	0.02
46.00	2.37	0.32	5.00	0.00	0.02	0.02
46.05	2.37	0.32	5.00	0.00	0.02	0.02
46.10	2.37	0.32	5.00	0.00	0.02	0.02
46.15	2.37	0.32	5.00	0.00	0.02	0.02
46.20	2.37	0.32	5.00	0.00	0.02	0.02
46.25	2.37	0.32	5.00	0.00	0.02	0.02
46.30	2.37	0.32	5.00	0.00	0.02	0.02
46.35	2.37	0.32	5.00	0.00	0.02	0.02
46.40	2.37	0.32	5.00	0.00	0.02	0.02
46.45	2.37	0.32	5.00	0.00	0.02	0.02
46.50	2.37	0.32	5.00	0.00	0.02	0.02

46.55	2.37	0.32	5.00	0.00	0.02	0.02
46.60	2.37	0.32	5.00	0.00	0.02	0.02
46.65	2.37	0.32	5.00	0.00	0.02	0.02
46.70	2.36	0.32	5.00	0.00	0.02	0.02
46.75	2.36	0.32	5.00	0.00	0.02	0.02
46.80	2.36	0.32	5.00	0.00	0.02	0.02
46.85	2.36	0.32	5.00	0.00	0.02	0.02
46.90	2.36	0.32	5.00	0.00	0.02	0.02
46.95	2.36	0.32	5.00	0.00	0.02	0.02
47.00	2.36	0.32	5.00	0.00	0.02	0.02
47.05	2.36	0.32	5.00	0.00	0.02	0.02
47.10	2.36	0.32	5.00	0.00	0.02	0.02
47.15	2.36	0.32	5.00	0.00	0.02	0.02
47.20	2.36	0.32	5.00	0.00	0.02	0.02
47.25	2.36	0.32	5.00	0.00	0.02	0.02
47.30	2.36	0.32	5.00	0.00	0.02	0.02
47.35	2.36	0.32	5.00	0.00	0.02	0.02
47.40	2.36	0.32	5.00	0.00	0.02	0.02
47.45	2.36	0.32	5.00	0.00	0.02	0.02
47.50	2.36	0.32	5.00	0.00	0.01	0.01
47.55	2.35	0.32	5.00	0.00	0.01	0.01
47.60	2.35	0.32	5.00	0.00	0.01	0.01
47.65	2.35	0.32	5.00	0.00	0.01	0.01
47.70	2.35	0.32	5.00	0.00	0.01	0.01
47.75	2.35	0.32	5.00	0.00	0.01	0.01
47.80	2.35	0.32	5.00	0.00	0.01	0.01
47.85	2.35	0.32	5.00	0.00	0.01	0.01
47.90	2.35	0.32	5.00	0.00	0.01	0.01
47.95	2.35	0.32	5.00	0.00	0.01	0.01
48.00	2.35	0.32	5.00	0.00	0.01	0.01
48.05	2.35	0.32	5.00	0.00	0.01	0.01
48.10	2.35	0.32	5.00	0.00	0.01	0.01
48.15	2.35	0.32	5.00	0.00	0.01	0.01
48.20	2.35	0.32	5.00	0.00	0.01	0.01
48.25	2.35	0.32	5.00	0.00	0.01	0.01
48.30	2.35	0.32	5.00	0.00	0.01	0.01
48.35	2.35	0.32	5.00	0.00	0.01	0.01
48.40	2.34	0.32	5.00	0.00	0.01	0.01
48.45	2.34	0.31	5.00	0.00	0.01	0.01
48.50	2.34	0.31	5.00	0.00	0.01	0.01
48.55	2.34	0.31	5.00	0.00	0.01	0.01
48.60	2.34	0.31	5.00	0.00	0.01	0.01
48.65	2.34	0.31	5.00	0.00	0.01	0.01
48.70	2.34	0.31	5.00	0.00	0.01	0.01
48.75	2.34	0.31	5.00	0.00	0.01	0.01
48.80	2.34	0.31	5.00	0.00	0.01	0.01
48.85	2.34	0.31	5.00	0.00	0.01	0.01
48.90	2.34	0.31	5.00	0.00	0.01	0.01
48.95	2.34	0.31	5.00	0.00	0.01	0.01
49.00	2.34	0.31	5.00	0.00	0.01	0.01
49.05	2.34	0.31	5.00	0.00	0.01	0.01
49.10	2.34	0.31	5.00	0.00	0.01	0.01
49.15	2.34	0.31	5.00	0.00	0.01	0.01
49.20	2.34	0.31	5.00	0.00	0.00	0.00
49.25	2.33	0.31	5.00	0.00	0.00	0.00
49.30	2.33	0.31	5.00	0.00	0.00	0.00
49.35	2.33	0.31	5.00	0.00	0.00	0.00
49.40	2.33	0.31	5.00	0.00	0.00	0.00
49.45	2.33	0.31	5.00	0.00	0.00	0.00
49.50	2.33	0.31	5.00	0.00	0.00	0.00
49.55	2.33	0.31	5.00	0.00	0.00	0.00
49.60	2.33	0.31	5.00	0.00	0.00	0.00
49.65	2.33	0.31	5.00	0.00	0.00	0.00

49.70	2.33	0.31	5.00	0.00	0.00	0.00
49.75	2.33	0.31	5.00	0.00	0.00	0.00
49.80	2.33	0.31	5.00	0.00	0.00	0.00
49.85	2.33	0.31	5.00	0.00	0.00	0.00
49.90	2.33	0.31	5.00	0.00	0.00	0.00
49.95	2.33	0.31	5.00	0.00	0.00	0.00
50.00	2.33	0.31	5.00	0.00	0.00	0.00

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

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1 atm (atmosphere) = 1 tsf (ton/ft2)

CRRm — Cyclic resistance ratio from soils
CSRsf — Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S. — Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat — Settlement from saturated sands
S_dry — Settlement from Unsaturated Sands
S_all — Total Settlement from Saturated and Unsaturated Sands
NoLiq — No-Liquefy Soils

APPENDIX E

EARTHWORK SPECIFICATIONS

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EARTHWORK SPECIFICATIONS

E1.1 Scope of Work

The work includes all labor, supplies and construction equipment required to construct the building pads in a good, workmanlike manner, as shown on the drawings and herein specified. The major items of work covered in this section include the following:

- Site Inspection
- Authority of Geotechnical Engineer
- Site Clearing
- Excavations
- Preparation of Fill Areas
- Placement and Compaction of Fill
- Observation and Testing

E1.2 Site Inspection

1. The Contractor shall carefully examine the site and make all inspections necessary, in order to determine the full extent of the work required to make the completed work conform to the drawings and specifications. The Contractor shall satisfy himself as to the nature and location of the work, ground surface and the characteristics of equipment and facilities needed prior to and during prosecution of the work. The Contractor shall satisfy himself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered. Any inaccuracies or discrepancies between the actual field conditions and the drawings, or between the drawings and specifications must be brought to the Owner's attention in order to clarify the exact nature of the work to be performed.

2. This *Geoseismic/Geotechnical Study Report* by Converse Consultants may be used as a reference to the surface and subsurface conditions on this project. The information presented in this report is intended for use in design and is subject to confirmation of the conditions encountered during construction. The exploration logs and related information depict subsurface conditions only at the particular time and location designated on the boring logs. Subsurface conditions at other locations may differ from conditions encountered at the exploration locations. In addition, the passage of time may result in a change in subsurface conditions at the exploration locations. Any review of this information shall not relieve the

Contractor from performing such independent investigation and evaluation to satisfy himself as to the nature of the surface and subsurface conditions to be encountered and the procedures to be used in performing his work.

E1.3 Authority of the Geotechnical Engineer

1. The Geotechnical Engineer will observe the placement of compacted fill and will take sufficient tests to evaluate the uniformity and degree of compaction of filled ground.
2. As the Owner's representative, the Geotechnical Engineer will (a) have the authority to cause the removal and replacement of loose, soft, disturbed and other unsatisfactory soils and uncontrolled fill; (b) have the authority to approve the preparation of native ground to receive fill material; and (c) have the authority to approve or reject soils proposed for use in building areas.
3. The Civil Engineer and/or Owner will decide all questions regarding (a) the interpretation of the drawings and specifications, (b) the acceptable fulfillment of the contract on the part of the Contractor and (c) the matters of compensation.

E1.4 Site Clearing

1. Clearing and grubbing shall consist of the removal from building areas to be graded of all existing structures, pavement, utilities, and vegetation.
2. Organic and inorganic materials resulting from the clearing and grubbing operations shall be hauled away from the areas to be graded.

E1.5 Excavations

1. Based on observations made during our field explorations, the site soils can be excavated with conventional earthwork equipment.

E1.6 Preparation of Fill Areas

1. All organic material, organic soils, debris, undocumented fill soils, and expansive native soils within the foundation zone should be removed from the proposed building areas.
2. The depths and extents of over-excavations should be performed per the recommendations presented in this report. Deeper removal will be needed if firm soils are not exposed on the excavation bottom. All loose, soft or disturbed earth materials should be removed from the bottom of excavations before placing structural fill. The actual depth of removal should be determined based on observations made during grading.

3. The subgrade in all areas to receive fill shall be scarified to a minimum depth of six (6) inches, the soil moisture adjusted between optimum and three (3) percent above optimum for fine-grained soils and within two (2) percent of optimum moisture content for granular soils, and then compacted to at least 90 percent of the laboratory maximum dry density as determined by ASTM Standard D1557 test method. Scarification may be terminated on moderately hard to hard, cemented earth materials with the approval of the Geotechnical Engineer.
4. Approved non-expansive soil placed as compacted fill may be placed on native soils that have been properly scarified and recompacted as discussed above.
5. All areas to receive compacted fill will be observed and approved by the Geotechnical Engineer before the placement of fill.

E1.7 Placement and Compaction of Fill

1. Compacted fill placed for the support of footings, slabs-on-grade, exterior concrete flatwork, and driveways will be considered structural fill. Structural fill may consist of approved on-site soils or imported fill that meets the criteria indicated below.
2. Fill consisting of selected imported soils approved by the Geotechnical Engineer shall be placed in layers on approved earth materials. Soils used as compacted structural fill shall have the following characteristics:
   a. All fill soil particles shall not exceed three (3) inches in nominal size, and shall be free of organic matter and miscellaneous inorganic debris and inert rubble.
   b. Imported fill materials shall have an Expansion Index (EI) less than 20. All imported fill should be compacted to at least 90 percent of the laboratory maximum dry density (ASTM Standard D1557) at about three (3) percent above optimum moisture for fine grained soils, and within two (2) percent of optimum for granular soils.
3. Fill soils shall be evenly spread in maximum 8-inch lifts, watered or dried as necessary, mixed and compacted to at least the density specified below. The fill shall be placed and compacted on a horizontal plane, unless otherwise approved by the Geotechnical Engineer.
4. All fill placed at the site shall be compacted to at least 90 percent of the laboratory maximum dry density as determined by ASTM Standard D1557 test method. The on-site soils shall be moisture conditioned within two (2) percent above the optimum moisture content. At least the upper 12 inches of subgrade soils underneath the concrete apron, pavement and parking areas should be compacted to a minimum of 95 percent relative compaction.

5. Fill exceeding five (5) feet in height shall not be placed on native slopes that are steeper than 5:1 horizontal:vertical (H:V). Where native slopes are steeper than 5:1 H:V, and the height of the fill is greater than five (5) feet, the fill shall be benched into competent materials. The height and width of the benches shall be at least two (2) feet.
6. Representative samples of materials being used, as compacted fill will be analyzed in the laboratory by the Geotechnical Engineer to obtain information on their physical properties. Maximum laboratory density of each soil type used in the compacted fill will be determined by the ASTM Standard D1557 compaction method.
7. Fill materials shall not be placed, spread or compacted during unfavorable weather conditions. When site grading is interrupted by heavy rain, filling operations shall not resume until the Geotechnical Engineer approves the moisture and density conditions of the previously placed fill.
8. It shall be the Grading Contractor's obligation to take all measures deemed necessary during grading to provide erosion control devices in order to protect slope areas and adjacent properties from storm damage and flood hazard originating on this project. It shall be the contractor's responsibility to maintain slopes in their as-graded form until all slopes are in satisfactory compliance with job specifications, all berms have been properly constructed, and all associated drainage devices meet the requirements of the Civil Engineer.

E1.8 Trench Backfill

The following specifications are recommended to provide a basis for quality control during the placement of trench backfill.

1. Trench excavations to receive backfill shall be free of trash, debris or other unsatisfactory materials at the time of backfill placement.
2. Trench backfill shall be compacted to a minimum relative compaction of 90 percent as per ASTM Standard D1557 test method.
3. Rocks larger than one (1) inch should not be placed within 12 inches of the top of the pipeline or within the upper 12 inches of pavement or structure subgrade. No more than 30 percent of the backfill volume shall be larger than 3/4-inch in largest dimension diameter, and rocks shall be well mixed with finer soil.
4. The pipe design engineer should select bedding material for the pipe. Bedding materials generally should have a Sand Equivalent (SE) greater than or equal to 30, as determined by the ASTM Standard D2419 test method.
5. Trench backfill shall be compacted by mechanical methods, such as sheepsfoot, vibrating or pneumatic rollers, or mechanical tampers, to achieve the density specified herein. The backfill materials shall be brought to within three (3)

percent of optimum moisture content for granular soils and between optimum and three (3) percent above optimum for fine-grained soils, then placed in horizontal layers. The thickness of uncompacted layers should not exceed eight (8) inches. Each layer shall be evenly spread, moistened or dried as necessary, and then tamped or rolled until the specified density has been achieved.

6. The contractor shall select the equipment and processes to be used to achieve the specified density without damage to adjacent ground and completed work.
7. The field density of the compacted soil shall be measured by the ASTM Standard D1556 or ASTM Standard D6938 test methods or equivalent.
8. Observation and field tests should be performed by Converse during construction to confirm that the required degree of compaction has been obtained. Where compaction is less than that specified, additional compactive effort shall be made with adjustment of the moisture content as necessary, until the specified compaction is obtained.
9. It should be the responsibility of the Contractor to maintain safe conditions during cut and/or fill operations.
10. Trench backfill shall not be placed, spread or rolled during unfavorable weather conditions. When the work is interrupted by heavy rain, fill operations shall not be resumed until field tests by the project's geotechnical consultant indicate that the moisture content and density of the fill are as previously specified.

E1.9 Observation and Testing

1. During the progress of grading, the Geotechnical Engineer will provide observation of the fill placement operations.
2. Field density tests will be made during grading to provide an opinion on the degree of compaction being obtained by the contractor. Where compaction of less than specified herein is indicated, additional compactive effort with adjustment of the moisture content shall be made as necessary, until the required degree of compaction is obtained.
3. A sufficient number of field density tests will be performed to provide an opinion to the degree of compaction achieved. In general, density tests will be performed on each one-foot lift of fill, but not less than one for each 500 cubic yards of fill placed.

APPENDIX C

Noise

XII. NOISE -- Would the Project result in:

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?

Characteristics of Sound

Sound is technically described in terms of the loudness (amplitude) and frequency (pitch) of the sound. The standard unit of measurement for sound is the decibel (dB). The human ear is not equally sensitive to sound at all frequencies. The "A-weighted scale," abbreviated dBA, reflects the normal hearing sensitivity range of the human ear. On this scale, the range of human hearing extends from approximately 3 to 140 dBA. Table 12-1 provides examples of A-weighted noise levels from common sources.

TABLE 12-1: A-WEIGHTED DECIBEL SCALE

Typical A-Weighted Sound Levels	Sound Level (dBA, L_{eq})
Threshold of Pain	140
Jet Takeoff at 100 Meters	125
Jackhammer at 15 Meters	95
Heavy Diesel Truck at 15 Meters	85
Conversation at 1 Meter	60
Soft Whisper at 2 Meters	35

Source: United States Occupational Safety & Health Administration, *Noise and Hearing Conversation Technical Manual*, 1999.

Noise Definitions

This noise analysis discusses sound levels in terms of Community Noise Equivalent Level (CNEL) and Equivalent Noise Level (L_{eq}).

Community Noise Equivalent Level. CNEL is an average sound level during a 24-hour period. CNEL is a noise measurement scale, which accounts for noise source, distance, single event duration, single event occurrence, frequency, and time of day. Human reaction to sound between 7:00 p.m. and 10:00 p.m. is as if the sound were actually 5 dBA higher than if it occurred from 7:00 a.m. to 7:00 p.m. From 10:00 p.m. to 7:00 a.m., humans perceive sound as if it were 10 dBA higher due to the lower background level. Hence, the CNEL is obtained by adding an additional 5 dBA to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and 10 dBA to sound levels in the night from 10:00 p.m. to 7:00 a.m. Because CNEL accounts for human sensitivity to sound, the CNEL 24-hour figure is always a higher number than the actual 24-hour average.

Equivalent Noise Level. L_{eq} is the average noise level on an energy basis for any specific time period. The L_{eq} for one hour is the energy average noise level during the hour. The average noise level is based on the energy content (acoustic energy) of the sound. L_{eq} can be thought of as the level of a continuous noise that has the same energy content as the fluctuating noise level. The equivalent noise level is expressed in units of dBA.

Effects of Noise

The degree to which noise can impact the environment ranges from levels that interfere with speech and sleep to levels that cause adverse health effects. Human response to noise is subjective and can vary from person to person. Factors that influence individual response include the intensity, frequency, and pattern of noise, the amount of background noise present before the intruding noise, and the nature of work or human activity exposed to the source.

Audible Noise Changes

Small perceptible changes in sound level for a person with normal hearing sensitivity is approximately 3 dBA. A change of at least 5 dBA would be noticeable and could produce a community reaction. A 10 dBA increase is heard as a doubling in loudness and would produce a community response.

Noise levels decrease as the distance from the noise source to the receiver increases. Noise generated by a stationary noise source, or “point source,” will decrease by approximately 6 dBA over hard surfaces (e.g., reflective surfaces such as parking lots or smooth bodies of water) and 7.5 dBA over soft surfaces (e.g., absorptive surfaces such as soft dirt, grass, or scattered bushes and trees) for each doubling of distance. For example, if a noise source produces a noise level of 89 dBA at a reference distance of 50 feet, the noise level would be 83 dBA at a distance of 100 feet from the noise source, 77 dBA at a distance of 200 feet, and so on. Noise generated by a mobile source will decrease by approximately 3 dBA over hard surfaces and 4.5 dBA over soft surfaces for each doubling of distance.

Noise is most audible when traveling by direct line-of-sight, a visual path between the noise source and noise receptor. Barriers, such as walls or buildings that break the line-of-sight between the source and the receiver can greatly reduce noise levels from the source since sound can only reach the receiver by diffraction. Sound barriers can reduce sound levels by up to 20 dBA or more. However, if a barrier is not high or long enough to break the line-of-sight from the source to the receiver, its effectiveness is greatly reduced.

The California Department of Health Services has established guidelines for acceptable exterior noise levels for each county and city. These standards and criteria are incorporated into the land use planning process to reduce future noise and land use incompatibilities. Table 12-2 reflects State guidance that allows the City to ensure integrated planning for compatibility between land uses and outdoor noise.

TABLE 12-2: LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS						
Land Use Category	Community Noise Exposure (dBA, CNEL)					
	55	60	65	70	75	80
Residential - Low Density Single-Family, Duplex, Mobile Homes						
Residential - Multi-Family						
Transient Lodging - Motels Hotels						
Schools, Libraries, Churches, Hospitals, Nursing Homes						
Auditoriums, Concert Halls, Amphitheaters						
Sports Arena, Outdoor Spectator Sports						
Playgrounds, Neighborhood Parks						
Golf Courses, Riding Stables, Water Recreation, Cemeteries						
Office Buildings, Business Commercial and Professional						
Industrial, Manufacturing, Utilities, Agriculture						

Normally Acceptable - Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Conditionally Acceptable - New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply system or air conditioning will normally suffice.

Normally Unacceptable - New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable - New construction or development should generally not be undertaken.

Source: California Office of Noise Control, Department of Health Services.

State interior noise standards were established in 1974, when the California Commission on Housing and Community Development adopted noise insulation standards for residential buildings (Title 24, Part 2, California Code of Regulations). Title 24 establishes standards for interior room noise attributable to outside noise sources. Title 24 also specifies that acoustical studies should be prepared whenever a residential building or structure is proposed to be located in areas with exterior noise levels of 60 dB Day-Night Average Noise Level (L_{dn}) or greater. The acoustical analysis must show that the building has been designed to limit intruding noise to an interior level not exceeding 45 dB L_{dn} for any habitable room.

Applicable Regulations

The City of Los Angeles Municipal Code (LAMC) has established both construction and operation noise regulations. Between the hours of 7:00 a.m. and 10:00 p.m., in any residential zone of the City or within 500 feet thereof, no person shall operate or cause to be operated any powered equipment or powered hand tool that produces a maximum noise level exceeding the following noise limits at a distance of 50 feet therefrom:

- 75 dBA for construction, industrial, and agricultural machinery including crawler-tractors, dozers, rotary drills and augers, loaders, power shovels, cranes, derricks, motor graders, paving machines, off-highway trucks, ditchers, trenchers, compactors, scrapers, wagons, pavement breakers, compressors and pneumatic or other powered equipment;

- 75 dBA for powered equipment of 20 horse-power or less intended for infrequent use in residential areas, including chain saws, log chippers and powered hand tools;

- 65 dBA for powered equipment intended for repetitive use in residential areas, including lawn mowers, backpack blowers, small lawn and garden tools.[1]

Additionally, according to the LAMC, a noise level increase of five decibels over the existing average ambient noise level at an adjacent property line is considered a noise violation. This standard applies to sources such as consumer electronics, HVAC systems, powered equipment intended for repeated use in residential areas and motor vehicles driven onsite. Section 41.40 of the LAMC also prohibits construction activity from occurring between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, and between 6 p.m. and 8 a.m. on Saturday.

In addition, the Los Angeles Unified School District has other standards that are used by the its Office of Environmental Health and Safety to gauge acceptable noise levels inside classrooms. This includes a maximum interior classroom noise level of 55 dBA L_{10} or 45 dBA L_{eq}.[2]

Construction Noise Impacts

Less Than Significant Impact with Mitigation Incorporated. For purposes of assessing noise impacts on sensitive populations, the following sensitive receptors to the Project Site were identified for analysis:

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1 City of Los Angeles, Municipal Code, 1986.
2 The L_{10} value is the noise level exceeded 10 percent of the time. This accounts for any annoying peaks of noise.

- 1110 Berendo Street. This apartment building is 60 feet directly east of the Project site and has a direct line of sight to the Project site. Primary noise sources were children playing and some traffic.

- 2695 West 11th Street. This apartment complex is 65 feet north of the Project site across 11th Street. Because its grade is 6 feet lower than the adjacent Project site, the only line of sight into the school and playing fields is from the second floor of this and other buildings on 11th Street. Noise was primarily from the schoolyard, which is approximately 6 feet higher than the street.

- 1025 Dewey Avenue. This site is 320 feet north of the site and is a larger apartment building with a higher density of receptors. Because its grade is over 28 feet lower than the Project site and has several intervening structures between, there is a minimal line of sight to the Project site. Because of its proximity to Olympic Boulevard, ambient noise is influenced by traffic; in addition, barking dogs and children playing at Berendo Middle School could also be heard.

- Northwest corner of South Kenmore and 11th Street. This site is 260 feet northwest of the Project site and represents ambient noise at the rear of homes abutting the school. Monitoring was not done directly next to the residences (e.g., 1102 Kenmore) because of the difference in topography (i.e., a large block retaining wall for the playing fields abuts the rear of the residential property lines) and an inability to access the sites. There was low-level ambient noise because kids were inside classrooms.

- West 12th Street. Apartments on the south side of West 12th Street face Berendo Middle School and could be exposed to construction or operational noise. Noise measurements were taken on the sidewalk on West 12th Street on the southern edge of Berendo Middle School across from Dewey Street, approximately 425 feet south of the Project boundary. These apartments are level with 12th Street and have a direct line of sight into the Berendo School grounds. However, these buildings are 16 feet higher than the grade of the Project site. The primary source of noise was from children playing outside, with minimal noise from traffic on West 12th Street and Dewey.

- Berendo Middle School (On-site campus). It should be noted that because construction activities would overlap with portions of the school year, the existing middle school would also be affected during school hours. Construction noise during classroom hours could increase ambient noise inside the classrooms, which are approximately 20 feet south of the Project site on a terrace level that is 8 feet higher than the Project site. In addition, any construction during outdoor play would increase ambient noise outside, as close as 10 feet from existing playground areas west of the Project site at the same terrace level as the Project site. Because on-site monitoring on the campus was not possible, noise measurements taken on the sidewalk on West 12th Street represent a conservative representation of ambient noise levels during outdoor play. The bulk of the campus is 16 feet higher than the grade of the Project site, with a smaller terraced level fronting Berendo Street that is 8 feet higher than the grade of the Project site.

To ascertain the ambient noise levels at these sensitive receptors, DKA Planning took short-term, 15-minute noise readings at all five locations on April 8, 2014 using a Quest Technologies SoundPro DL Sound Level Meter.[3] As shown in Table 12-3, ambient noise levels were relatively uniform in this residential neighborhood, ranging from 55.6 dBA L_{eq} at Berendo Middle School to 58.4 dBA L_{eq} at the corner of 11th and Kenmore.

TABLE 12-3: CONSTRUCTION NOISE LEVELS - UNMITIGATED

Sensitive Receptor	Distance from Site* (feet)	Maximum Construction Noise Level (dBA)	Existing Ambient (dBA, L_{eq})	New Ambient (dBA, L_{eq})	Increase
Multi-family residences at 1110 Berendo	60	73.1	56.9	73.2	16.3
Multi-family residences at 2659 11th	65	75.8	57.4	75.9	18.5
Multi-family residences at 1025 Dewey	320	67.1	58.0	63.2	5.2
Multi-family residences at 11th & Kenmore	260	61.8	58.4	63.5	5.1
Multi-family residences on West 12th	425	69.6	55.6	61.0	5.4
Berendo Middle School campus (indoor) demolition and grading phases	20	58.1	40.6	58.2	17.6
Berendo Middle School campus (outdoor) demolition and grading phases	10	82.3	55.6	82.3	26.7
Berendo Middle School campus (indoor) construction phases	20	59.7	40.6	59.8	28.3
Berendo Middle School campus (outdoor) construction phases	10	74.3	55.6	74.4	18.8

SOURCE: DKA Planning, 2014.
* Assumes equipment operations are set back from property line on average 1/3 of the total depth of the property facing the adjacent use

Construction, demolition (or removal of existing classroom building and other structures), ground clearing, grading, structural, and other noise-generating activities would occur between 7:00 a.m. and 9:00 p.m. in accordance with the LAMC. Construction activities would vary over several phases of development and would include off-road larger equipment such as tractors, loaders and smaller equipment such as saws, hammers, and pneumatic tools. The 16-month construction process would begin in Fall 2014 and end in Spring 2016 and include the following key stages:

- Demolition
  - Removal of 10,000 square feet of restroom and bungalow buildings
  - Removal of about 52,718 square feet of asphalt concrete pavement (4” depth) and base material (5” depth) from the basketball courts, parking lot, and other existing improvements
  - Removal of three on-site trees
  - Removal of related improvements (basketball poles, chain link fencing, retaining walls, sidewalks)

[3] The SoundPro meter complies with the American National Standards Institute (ANSI) and International Electrothnical Commission (IEC) for general environmental noise measurement instrumentation. The meter was equipped with an omni-directional microphone, calibrated before the day’s measurements, and set at approximately five feet above the ground. Weather conditions were clear, 88 degrees temperature, with negligible wind.

  - Equipment would include a concrete/industrial saw, dozer, and three loaders that would produce a cumulative reference noise level of 91.2 dBA at 50 feet of distance
  - On-Road trucks would generate noise from the export of 8,680 cubic yards of cut-and-fill materials (assumes 20 percent swell of cut materials) and demolition materials from the site to an off-site disposal location

- Grading
  - 9,664 cubic yards of cut materials for the underground parking garage and other site work
  - 2,430 cubic yards of fill
  - On-Road trucks would generate noise from the export of 8,680 cubic yards of cut-and-fill materials (assumes 20 percent swell of cut materials) from the site to an off-site disposal location
  - Equipment would include a rubber tired loader, grader, and dozer that would produce a cumulative reference noise level of 89.8 dBA at 50 feet of distance

- Construction
  - Construction of three one- and two-story buildings totaling about 34,000 square feet and a one-level subterranean parking garage
  - On-Road trucks would generate noise from the delivery of building materials to the site
  - Equipment would include a generator set, crane, forklift, rubber tired loader, and three welders that would produce a cumulative reference noise level of 92.8 dBA at 50 feet of distance

- Paving
  - Installation of 3-4" of asphalt concrete over a 4" crushed aggregate base
  - On-Road trucks would generate noise from the delivery of paving materials to the site

Table 12-3 summarizes projected noise levels at nearby sensitive receptors during construction. Land uses on the properties surrounding the Project site include multi-family residential and school uses. Construction noise would generally peak during building construction, where up to seven pieces of equipment could produce a cumulative 92.8 dBA at 50 feet of distance. This would significantly increase ambient noise levels above 75 dBA at two of the off-site sensitive receptors and represent increases of more than 5 dBA at all off-site receptors. In the absence of attenuation, construction activities would generate maximum off-site noise levels of up to 75.9 dBA at the 11th Street residences, an increase of up to 18.5 dBA.

At the adjacent Berendo Middle School, noise levels would be most significant during the demolition phase, where concrete asphalt and base layers would be removed right up to the playground directly west and south of the Project site. In addition, grading of the underground garage would potentially go right up to the playground area as well. These activities could increase outside noise levels on the playground by up to 28.3 dBA. This could also increase interior noise levels by 26.7 dBA inside any adjacent school buildings. Because construction activities would increase ambient noise levels more than 5 dBA and elevate ambient noise levels above 75 dBA at one or more adjacent sensitive receptors, the proposed Project would result in significant but mitigable construction noise impacts.

Construction Phase Noise Mitigation Measures

N1 The Project shall comply with the City of Los Angeles Building Regulations Ordinance No. 178048, which requires a construction site notice to be provided that includes the following information: job site address, permit number, name and phone number of the contractor and owner or owner's agent, hours of construction allowed by code or any discretionary approval for the site, and City telephone numbers where violations can be reported. The notice shall be posted and maintained at the construction site prior to the start of construction and displayed in a location that is readily visible to the public.

N2 Construction and demolition activities shall be scheduled so as to avoid operating several pieces of equipment simultaneously, which causes high noise levels.

N3 The use of those pieces of construction equipment or construction methods with the greatest peak noise generation potential shall be minimized. Examples include the use of drills, jackhammers, and pile drivers.

N4 Noise and groundborne vibration construction activities whose specific location on the site may be flexible (e.g., operation of compressors and generators, cement mixing, general truck idling) shall be conducted as far as possible from the nearest noise- and vibration-sensitive land uses, and natural and/or manmade barriers (e.g., intervening construction trailers) shall be used to screen propagation of noise from such activities towards these land uses to the maximum extent possible.

N5 Barriers such as plywood structures or flexible sound control curtains shall be erected between the proposed Project and homes across Berendo and West 11th Street to minimize the amount of noise during construction. These temporary sound barriers shall be capable of achieving a sound attenuation of at least 13 dBA and block the line-of-sight between the Project site and these adjacent land uses.

N6 Barriers such as plywood structures or flexible sound control curtains shall be erected between the proposed Project and the Berendo School buildings and playgrounds to the south and west of the Project site to minimize the amount of noise during all construction phases. These temporary sound barriers shall be capable of achieving a sound attenuation of at least 15 dBA and block the line-of-sight between the Project site and these adjacent land uses.

N7 The Project contractor shall use power construction equipment with state-of-the-art noise shielding and muffling devices capable of attenuating sound by 3 dBA or more.

N8 Demolition of concrete asphalt shall not be done during school hours when children are playing in the adjacent playgrounds south and west of the Project site.

N9 Grading and construction of the underground garage shall not be done during school hours when children are playing in the adjacent playgrounds south and west of the Project site.

N10 All construction truck traffic shall be restricted to truck routes approved by the City of Los Angeles Department of Building and Safety, which shall avoid residential areas and other sensitive receptors to the extent feasible.

N11 The construction staging area shall be as far from sensitive receptors as possible.

N12 Two weeks prior to commencement of construction, notification shall be provided to the off-site residential, school, and church uses within 500 feet of the Project site that discloses the construction schedule, including the types of activities and equipment that would be used throughout the duration of the construction period.

N13 Any haul route for trucks disposing of demolished structures or concrete asphalt material shall avoid residential streets to the extent possible.

TABLE 12-4: CONSTRUCTION NOISE LEVELS - MITIGATED

Sensitive Receptor	Distance from Site (feet)*	Maximum Construction Noise Level (dBA)	Existing Ambient (dBA, L_{eq})	New Ambient (dBA, L_{eq})	Increase
Multi-family residences at 1110 Berendo	60	57.1	56.9	60.0	3.1
Multi-family residences at 2659 11th	65	59.8	57.4	61.8	4.4
Multi-family residences at 1025 Dewey	320	58.7	58.0	61.4	3.4
Multi-family residences at 11th & Kenmore	260	58.8	58.4	61.6	3.2
Berendo Middle School campus (indoor) demolition and grading phases	20	40.1	40.6	43.4	2.8
Berendo Middle School campus (outdoor) demolition and grading phases	10	N/A	55.6	N/A	N/A
Berendo Middle School campus (indoor) construction phases	20	41.7	40.6	44.2	3.6
Berendo Middle School campus (outdoor) construction phases	10	58.3	55.6	60.2	4.6

SOURCE: DKA Planning, 2014.
* Assumes equipment operations are set back from property line on average 1/3 of the total depth of the property facing the adjacent use
N/A Assumes that demolition and grading activities are curtailed during outdoor play activities at Berendo Middle School.

Haul trucks would generate noise off-site from nearly all phases of the construction process. This would include removal of materials from the Project site, including the net export of 8,680 cubic yards of cut-and-fill materials, removal of asphalt, base materials, and demolished structures. Depending on the capacity of trucks, this could produce up to 868 haul trips during the peak phase of grading that add incremental traffic volumes to local roads. This addition of up to several truck trips per hour would marginally increase ambient noise along haul route roadways, as truck deployment onto local streets would not happen simultaneously, but rather be phased over the course of the day. There would also be truck-related noise on local streets from the delivery of asphalt, base material, and building construction materials to the site. These would generally not occur simultaneously with the removal of materials, as the phasing process generally wouldn't accommodate concurrent import and export activities. Mitigation Measure N13 is intended to minimize off-site noise from haul trucks that could increase noise levels in adjacent residential neighborhoods.

Construction Noise Impacts After Mitigation

As shown in Table 12-4, construction noise levels after mitigation would be reduced at nearby sensitive receptors to less than 75 dBA with implementation of Mitigation Measures N1 through N13. Noise increases would be less than the 5 dBA threshold of significance that represents a significant audible increase in ambient noise. Construction equipment could produce intermittent audible noise increases at adjacent residential housing; however, these would be temporary and construction noise would be within the noise standards outlined in the City's Municipal Code. Implementation of Mitigation Measures N1 through N13 would reduce construction noise impacts to less-than-significant levels. Mitigation Measures N5 and N6 will require the erection of sound barriers that will attenuate construction noise for the off-site homes and the adjacent Berendo Middle School, respectively. A combination of sound barrier construction design, materials, and height will be needed to achieve noise attenuation. For example, every meter of additional height above the line of sight from a noise source to a receiver can attenuate an addition 1.5 dBA of noise. Finally, Mitigation Measures N8 and N9 ensures that any construction activities do not expose children playing outside to substantial increases in noise levels.

Operations Noise Impacts

Less Than Significant Impact. During project operations, the development would produce both direct noise impacts on the site from residential and commercial-related activities, as well as indirect noise impacts from vehicles traveling on local roads to access the site. The direct impacts would include stationary noises from sources associated with building operations, such as heating, ventilation, and air conditioning (HVAC) systems.

Section 41.40 and Chapter XI, Articles 1 through 6, of the LAMC requires that noise generated by mechanical equipment not exceed 5 dBA above ambient noise levels at adjacent property lines. Large ground level heating, ventilation, and air conditioning (HVAC) systems typically generate noise levels between 50 and 65 dBA at 50 feet.[4] Roof-top mounted equipment typically produces noise levels of up to approximately 56 dBA at 50 feet. The nearest off-site receptors would be apartments at 1110 Berendo located approximately 60 feet east of the Project site. These land uses would experience a 0.6 dBA increase in ambient noise. This negligible increase is less than the 5 dBA significance threshold for long-term ambient noise increases. Therefore, stationary noise would result in a less-than-significant impact.

The majority of operational noise impacts would be from indirect noise impacts associated with the 243 net new vehicle trips each day with 81 vehicle trips entering and exiting the Project site in the morning peak hour and 24 in the afternoon peak hour.[5] The impact of this additional traffic on ambient noise levels in the Project's vicinity was modeled under existing year (2013) no project scenario, existing year (2013) plus project scenario utilizing the FHWA TNM 2.5

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[4] Los Angeles Department of City Planning, *San Pedro Community Plan Draft EIR*, August 2012.
[5] KOA Corporation, *Traffic Impact Study for Monsenor Oscar Romero Charter School*; April 2014.

model. As shown in Tables 12-5 and 12-6, the greatest project-related noise increases would be 0.3 dBA L_{eq} along 11th Avenue between Normandie and Mariposa during both the AM and PM peak hours.

Mobile noise generated by the proposed Project would not cause the ambient noise level measured at the property line of the affected uses to rise to the “normally unacceptable” or “clearly unacceptable” category or result in any 5 dBA or more increase in noise level. As a result, these inaudible, off-site vehicular noise impacts would be considered a less-than-significant impact.

TABLE 12-5: ESTIMATED AM PEAK HOUR MOBILE SOURCE NOISE LEVELS

	Estimated dBA, CNEL			
Roadway Segment	No Project (2013)	With Project (2013)	Project Change	Significant Impact?
Olympic Boulevard between Catalina and Berendo	66.3	66.3	+0.0	No
Olympic Boulevard between Berendo and Vermont	69.8	69.8	+0.0	No
Vermont Avenue between Olympic and 11th	73.2	73.2	+0.0	No
Vermont Avenue between 12th and Pico	73.2	73.2	+0.0	No
Pico Boulevard between Vermont and Berendo	71.5	71.5	+0.0	No
Normandie Avenue between 11th and 12th	71.0	71.0	+0.0	No
11th Avenue between Normandie and Mariposa	62.3	62.6	+0.3	No

Source: DKA Planning, 2014.

TABLE 12-6: ESTIMATED PM PEAK HOUR MOBILE SOURCE NOISE LEVELS

	Estimated dBA, CNEL			
Roadway Segment	No Project (2013)	With Project (2013)	Project Change	Significant Impact?
Olympic Boulevard between Catalina and Berendo	66.4	66.4	+0.0	No
Olympic Boulevard between Berendo and Vermont	69.9	69.9	+0.0	No
Vermont Avenue between Olympic and 11th	72.6	72.6	+0.0	No
Vermont Avenue between 12th and Pico	73.1	73.1	+0.0	No
Pico Boulevard between Vermont and Berendo	70.9	70.9	+0.0	No
Normandie Avenue between 11th and 12th	71.5	71.5	+0.0	No
11th Avenue between Normandie and Mariposa	64.3	64.6	+0.3	No

Source: DKA Planning, 2014.

Finally, there would be long-term noise impacts from vehicles accessing the Project site. This would include vehicles entering the underground garage from 11th Street, a student pick-up/drop-off area from 11th Street, and associated car door slams. The proposed project is to be built on what now includes a surface parking lot that is adjacent to sensitive receptors. Existing car door slams can increase ambient noise levels at the nearest off-site receptor at 1110 Berendo by 0.9 dBA, a negligible increase. Because the proposed project is removing these parking spaces and placing them in an underground garage that will attenuate some noise, parking noise should decrease at nearby sensitive receptors. Because of this decrease in parking activity, parking noise would result in a less-than-significant impact.

Operations Phase Noise Mitigation Measures

Operational noise impacts would be less than significant, and no mitigation measures are required.

Operations Phase Noise Impacts After Mitigation

Operational noise impacts would be less than significant.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Characteristics of Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Unlike noise, vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible. Common sources of vibration include trains, buses, and construction activities.

Vibration Definitions

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings and is usually measured in inches per second. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration.[6]

Effects of Vibration

High levels of vibration may cause physical personal injury or damage to buildings. However, ground-borne vibration levels rarely affect human health. Instead, most people consider ground-borne vibration to be an annoyance that may affect concentration or disturb sleep. In addition, high levels of ground-borne vibration may damage fragile buildings or interfere with equipment that is highly sensitive to ground-borne vibration.

Perceptible Vibration Changes

Unlike noise, ground-borne vibration is not an environmental issue that most people experience every day. The background vibration velocity level in residential areas is usually 50 RMS or

[6] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.

lower, well below the threshold of perception for humans, which is around 65 RMS.[7] Most perceptible indoor vibration is caused by sources within buildings, such as movement of people or slamming of doors. Typical outdoor sources of ground-borne vibration are construction equipment, trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is typically not perceptible.

Applicable Regulations

To counter the effects of ground-borne vibration, the Federal Transit Administration (FTA) has published guidance relative to vibration impacts. According to the FTA, non-engineered timber and mason buildings can be exposed to ground-borne vibration levels of 0.2 inches per second without experiencing structural damage, while reinforced-concrete, steel, or timber buildings can be exposed to ground-borne vibration levels of 0.5 inches per second.[8]

The FTA has also established guidelines that provide thresholds for ground-borne vibration causing human annoyance. For residential land uses, which experience occasional events of ground-borne vibration or noise, the FTA has established a threshold of 75 VdB.[9] Some commercial buildings, such as auditoriums and theaters have additional vibration and noise annoyance criteria.

In terms of construction-related impacts on buildings, the City of Los Angeles has not adopted policies or guidelines relative to groundborne vibration. While the Los Angeles County Code (LACC Section 12.08.350) states a presumed perception threshold of 0.01 inch per second RMS, this threshold applies to groundborne vibrations from long-term operational activities, not construction. Consequently, as both the City of Los Angeles and the County of Los Angeles do not have a significance threshold to assess vibration impacts during construction, the FTA and California Department of Transportation's (Caltrans) adopted vibration standards for buildings are used to evaluate potential impacts related to Project construction.

Based on these standards, groundborne vibration impacts during construction would be considered if they would cause a PPV vibration level to exceed:

- 0.5 inches per second at any reinforced-concrete, steel or timber buildings (no plaster);
- 0.3 inches per second at any engineered concrete and masonry buildings (no plaster);
- 0.2 inches per second at any non-engineered timber and masonry buildings (i.e., "fragile" buildings);[10] and
- 0.12 inches per second at any building that is extremely susceptible to vibration damage (i.e., "extremely fragile" buildings).[11]

In addition, the City of Los Angeles has not adopted any thresholds associated with human annoyance for groundborne vibration impacts. Therefore, this analysis uses the FTA's vibration impact thresholds for human annoyance. These thresholds include 80 VdB at residences and buildings where people normally sleep (e.g., nearby residences) and 83 VdB at institutional

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7 Ibid.
8 Ibid.
9 Ibid.
10 Ibid.
11 Ibid.

buildings, which includes schools and churches. No thresholds have been adopted or recommended for commercial and office uses. Table 12-7 identifies PPV and RMS velocity (in VdB) levels for the types of off-road and on-road equipment that could operate at the Project site during construction.

TABLE 12-7: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	Approximate PPV (in/sec)					Approximate RMS (VdB)				
	25 Feet	50 Feet	60 Feet	75 Feet	100 Feet	25 Feet	50 Feet	60 Feet	75 Feet	100 Feet
Large Bulldozer	0.089	0.031	0.024	0.017	0.011	87	78	76	73	69
Caisson Drilling	0.089	0.031	0.024	0.017	0.011	87	78	76	73	69
Loaded Trucks	0.076	0.027	0.020	0.015	0.010	86	77	75	72	68
Jackhammer	0.035	0.012	0.009	0.007	0.004	79	70	68	65	61
Small Bulldozer	0.003	0.001	0.0008	0.0006	0.0004	58	49	47	44	40

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, 2006

Construction Vibration Impacts

Less Than Significant Impact. Groundborne vibration generated by construction activities associated with the proposed Project would primarily affect the off-site sensitive uses located in close proximity to the Project site. The closest is the multi-family residential buildings to the east across Berendo. As shown in Table 12-7, vibration velocities could range from 0.003 to 0.089 inch/sec PPV at 25 feet from the source activity, with corresponding vibration levels ranging from 58 VdB to 87 VdB at 25 feet from the source activity, depending on the type of construction equipment in use. Table 12-8, Vibration Levels at Off-Site Sensitive Uses from Project Construction, shows the vibration velocity and levels that would occur at these off-site sensitive uses during construction at the Project site.

The vibration velocities forecasted to occur at the off-site sensitive receptors would be less than 0.024 PPV at the closest receptors on Berendo and 11th Street. While both are non-engineered timber and masonry buildings considered to be “fragile”, neither would experience a PPV groundborne vibration level that exceeds 0.2 inches per second. Thus, vibration impacts associated with building damage due to construction activities at the Project site would be less than significant and no mitigation measures are required.

TABLE 12-8: VIBRATION LEVELS AT OFF-SITE SENSITIVE USES FROM PROJECT CONSTRUCTION			
Sensitive Uses Offsite	**Distance to Project Site (ft.)**	**Estimated PPV (in/sec)** [a]	**Estimated Vibration Levels (VdB)** [b]
Multi-family residential at 1100 Berendo	60	0.024	76
Multi-family residential on 11^{th} Street	65	0.021	75
Multi-family residences at 1025 Dewey	320	0.002	54
Multi-family residences at 11^{th} & Kenmore	260	0.003	56

[a] *The vibration velocities at the off-site sensitive uses are determined with the following equation from the Federal Transit Administration's Transit Noise and Vibration Impact Assessment, Final Report:* $PPV_{equip}=PPV_{ref} \times (25/D)^{1.5}$*, where* PPV_{equip} *= peak particle velocity in in/sec of equipment,* PPV_{ref} *= reference vibration level in in/sec at 25 feet, D = distance from the equipment to the receive.*

[b] *The vibration levels at the off-site sensitive uses are determined with the following equation from the Federal Transit Administration's Transit Noise and Vibration Impact Assessment, Final Report: Lv(D)=Lv(25 ft) – 30log(D/25), where Lv = vibration level of equipment, D = distance from the equipment to the receiver, Lv(25 ft) = vibration level of equipment at 25 feet.*

Source: DKA Planning, 2014.

In terms of human annoyance, the vibration levels experienced by the off-site sensitive receptors would range from 54 VdB at 1025 Dewey to 76 VdB. The vibration levels experienced at all off-site sensitive receptors would not exceed the FTA's 80 VdB threshold for residential uses.

Construction Phase Vibration Mitigation Measure

Construction-related groundborne vibration levels would be less than significant. No mitigation needed.

Construction Vibration Impacts After Mitigation

Construction-related groundborne vibration levels would be less than significant.

Operations Phase Vibration Impacts

Less Than Significant Impact. During operation of the proposed Project, there would not be significant stationary sources of ground-borne vibration, such as heavy equipment operations. Operational ground-borne vibration in the Project vicinity would be generated by vehicular travel on the local roadways. Road vehicles rarely create enough groundborne vibration to be perceptible to humans unless the road surface is poorly maintained and there are potholes or bumps. If traffic, typically heavy trucks, induces perceptible vibration in buildings, such as window rattling or shaking of small loose items, then it is most likely an effect of low-frequency airborne noise or ground characteristics. Project-related traffic would expose residential land uses during long-term operations to a vibration and noise level of far less than the FTA's 80 VdB threshold for residential uses and would be considered less-than-significant.

Operations Phase Vibration Mitigation Measures

No mitigation needed.

Operations Phase Vibration Impacts After Mitigation

Construction-related groundborne vibration levels would be less than significant.

c) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?

Less Than Significant Impact. The majority of any long-term noise impacts will come from traffic traveling to and from the area. Off-site noise generated by traffic from the Project was modeled under future year (2016) no project and with project conditions utilizing the FHWA TNM 2.5 model. When calculating future noise levels along project area roadways from traffic, additional impacts from 37 additional potential new or proposed Projects were considered. Thus, the future traffic results without and with the proposed Project account for the cumulative impacts from these other projects. Since the noise impacts are generated directly from the traffic analysis results, the future without project and future with project noise impacts described in this report already reflect cumulative impacts.

The proposed Project would contribute to future increases in off-site noise levels at project area roadways. Tables 12-9 and 12-10 present the cumulative increase in future traffic noise levels at study intersections. As shown in Tables 12-9 and 12-10, the greatest project-related noise increases would be 0.2 dBA L_{eq} along 11th Avenue between Normandie and Mariposa during the AM and PM peak hours. These impacts are considered negligible and would be less than the 5 dBA significance threshold. Therefore, the Project's individual and cumulative mobile source noise impacts would be considered less-than-significant.

TABLE 12-9: ESTIMATED CUMULATIVE AM PEAK HOUR MOBILE SOURCE NOISE LEVELS

	Estimated dBA, CNEL			
Roadway Segment	No Project (2016)	With Project (2016)	Project Change	Significant Impact?
Olympic Boulevard between Catalina and Berendo	66.7	66.7	+0.0	No
Olympic Boulevard between Berendo and Vermont	70.1	70.1	+0.0	No
Vermont Avenue between Olympic and 11th	73.6	73.6	+0.0	No
Vermont Avenue between 12th and Pico	73.6	73.6	+0.0	No
Pico Boulevard between Vermont and Berendo	71.8	71.8	+0.0	No
Normandie Avenue between 11th and 12th	71.8	71.8	+0.0	No
11th Avenue between Normandie and Mariposa	62.6	62.8	+0.2	No
Source: DKA Planning, 2014.				

TABLE 12-10: ESTIMATED CUMULATIVE PM PEAK HOUR MOBILE SOURCE NOISE LEVELS				
	Estimated dBA, CNEL			
Roadway Segment	No Project (2013)	With Project (2013)	Project Change	Significant Impact?
Olympic Boulevard between Catalina and Berendo	67.0	67.0	+0.0	No
Olympic Boulevard between Berendo and Vermont	70.4	70.4	+0.0	No
Vermont Avenue between Olympic and 11th	73.4	73.4	+0.0	No
Vermont Avenue between 12th and Pico	73.7	73.7	+0.0	No
Pico Boulevard between Vermont and Berendo	71.6	71.6	+0.0	No
Normandie Avenue between 11th and 12th	72.3	72.3	+0.0	No
11th Avenue between Normandie and Mariposa	64.6	64.8	+0.2	No
Source: DKA Planning, 2014.				

d) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?

Less Than Significant Impact with Mitigation Incorporated. Construction of the Project would contribute to cumulative construction noise levels. There are 37 related projects that are proposed for development in the area.[12] Of these, none of the related projects are within 500 feet of the proposed Project with potential to cause audible increases at identified sensitive receptors. All potential projects in the area are more than 1,000 feet away and not likely to influence localized pollutant concentrations at sensitive receptors adjacent to the Project site.

Regardless, any construction noise from any future site, were it to occur concurrently with the proposed Project, would be attenuated by the distance across intervening streets and/or structures that break the line of sight from this site to the nearby receptors. Additionally, any such projects would be subject to the City's noise ordinance, which limits the hours of allowable construction activities and the extent to which direct noise impacts can affect adjacent land uses. With conformance with the City's noise ordinance and incorporation of Mitigation Measures N1 through N13, the Project's cumulative construction noise impact would be considered less than significant.

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?

No Impact. The proposed Project site would not be located within an airport land use plan or within two miles of a public airport or public use airport. As such, the Project would not expose future employees or students to excessive airport-related noise levels.

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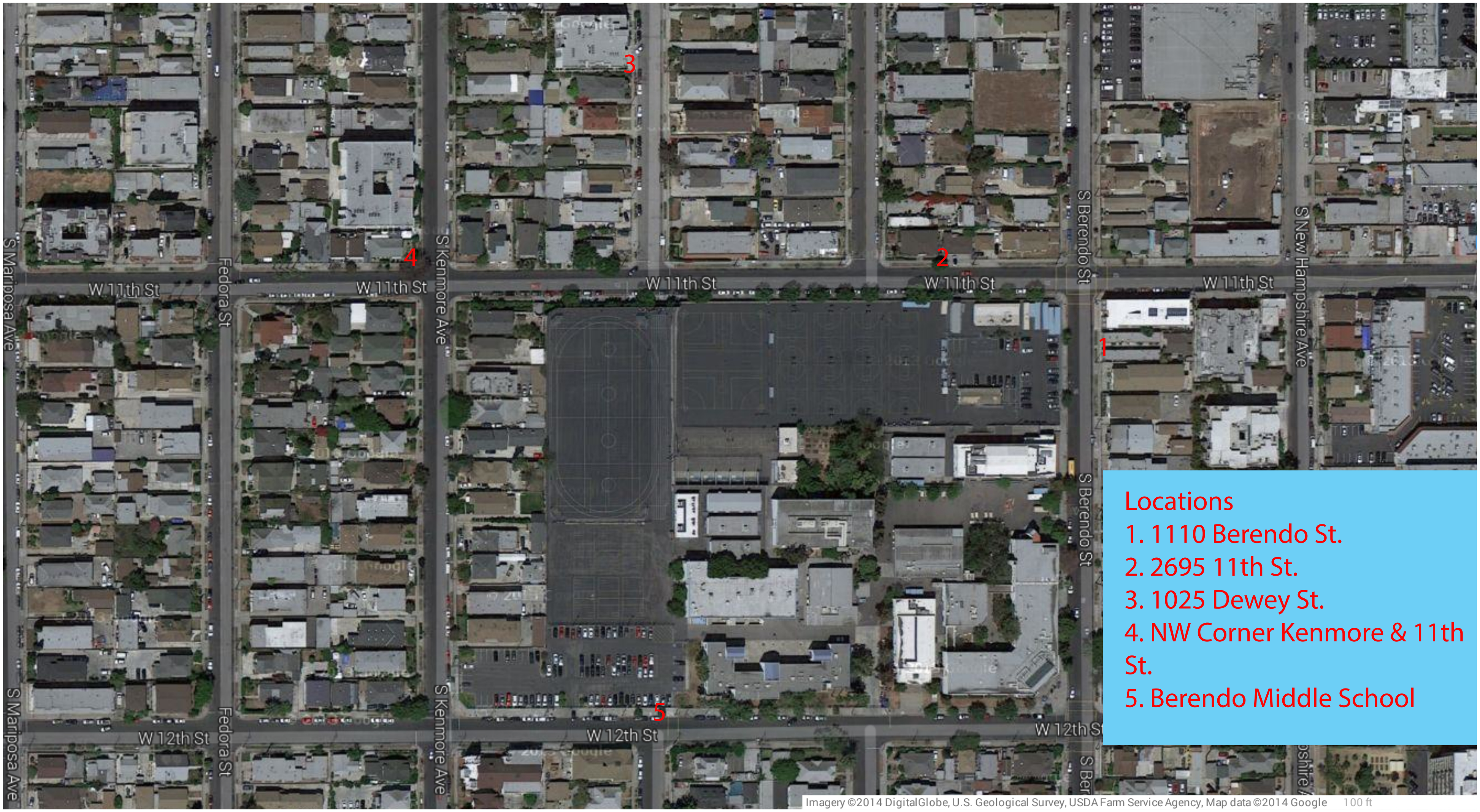
[12] KOA Corporation, *Traffic Impact Study for Monsenor Oscar Romero Charter School*; April 2014

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?

No Impact. The proposed Project site is not in the vicinity of a private airstrip. As a result, the proposed Project will not expose future employees or students to excessive noise levels from any private airstrip.



W 11th St
W 11th St
W 11th St
W 11th St
W 11th St
W 12th St
W 12th St
W 12th St
S Mariposa Ave
Fedora St
S Kenmore Ave
S Berendo St
S New Hampshire Ave
1
2
3
4
5
Locations
1. 1110 Berendo St.
2. 2695 11th St.
3. 1025 Dewey St.
4. NW Corner Kenmore & 11th St.
5. Berendo Middle School
Imagery ©2014 DigitalGlobe, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2014 Google
100 ft

1025 Dewey Street

4/8/2014

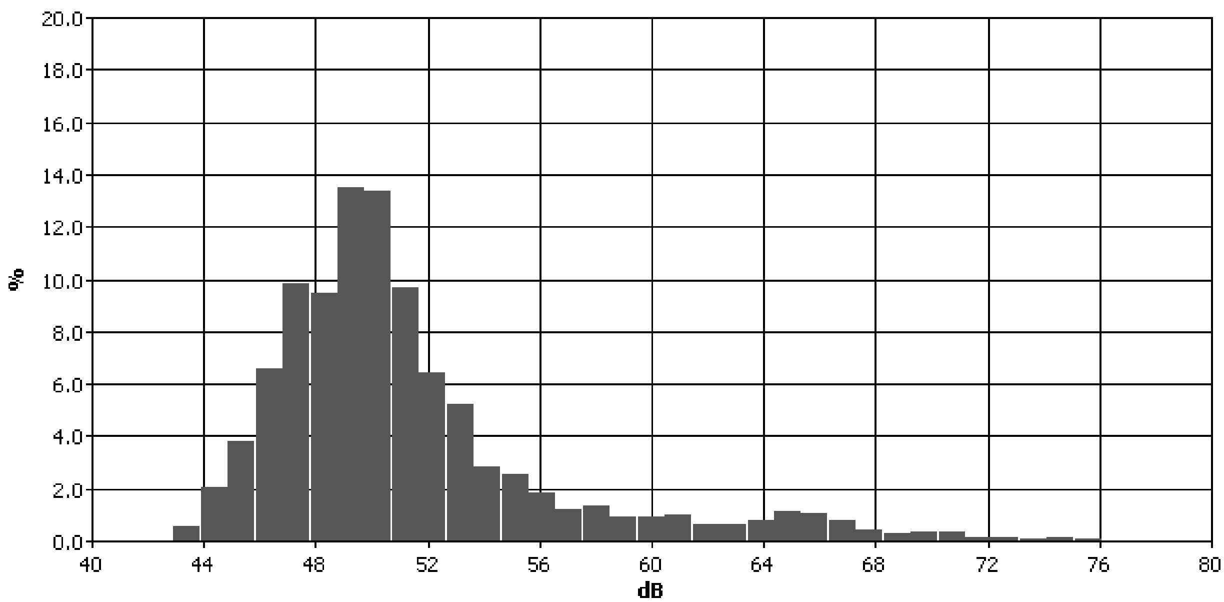
Information Panel

Name	S016_BIJ050019_08042014_185750
Start Time	Tuesday, April 08, 2014 12:10:19
Stop Time	Tuesday, April 08, 2014 12:25:19
Device Model Type	SoundPro DL
Comments	

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	58 dB	Dose	1	0 %
Pdose	1	0 %	Lmin	1	43.2 dB
Lmax	1	76.6 dB	Lpk	1	95 dB
TWA	1	43 dB	OL%	1	0 %
CNEL	1	58 dB	ULtime	1	00:00:00
Takt	1	61 dB	SEL	1	87.5 dB
ExpSec	1	0.2 Pa2-Sec	LDN	1	58 dB
UR%	1	0 %	L1	1	70.7 dB
L10	1	58.7 dB	L50	1	50.2 dB
L90	1	46.5 dB	Mntime	1	4/8/2014 12:19:58 PM
Mxtime	1	4/8/2014 12:11:24 PM	PKtime	1	4/8/2014 12:12:23 PM
Projected TWA	1	58 dB	Dose8	1	0 %
ExpHrs	1	0.00 Pa2-Hours	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	SLOW

Statistics Chart



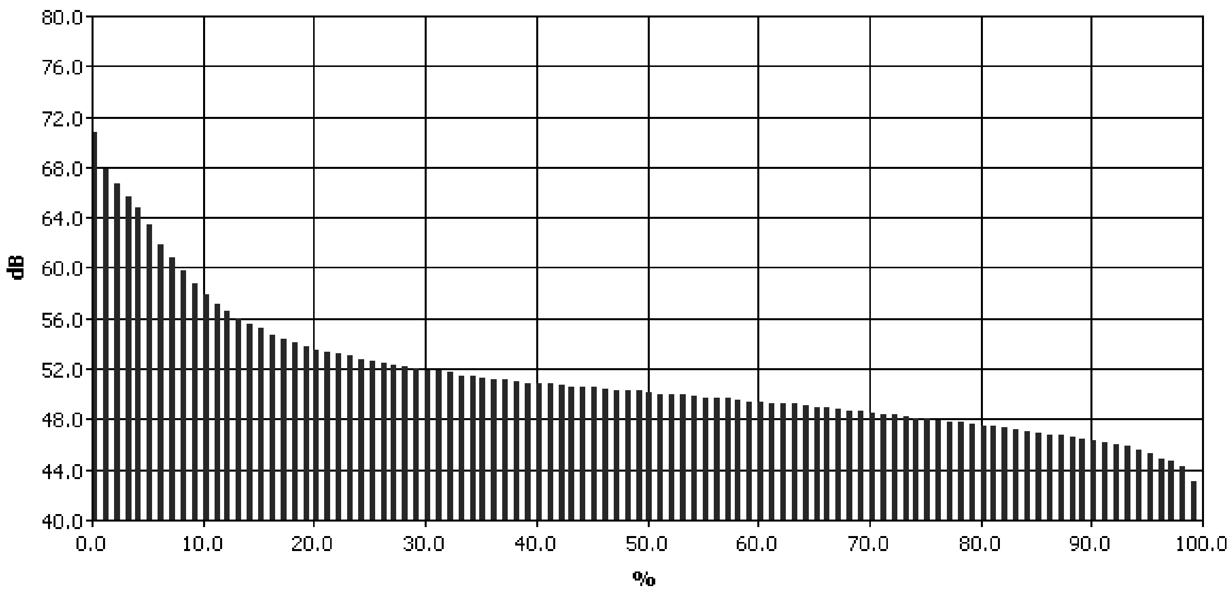
Statistics Table

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.6
44.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.4	2.0
45.0	0.4	0.3	0.2	0.3	0.4	0.5	0.4	0.3	0.5	0.7	3.8
46.0	0.4	0.4	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.9	6.6

Statistics Table (cont'd)

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
47.0	1.0	1.0	0.6	1.0	0.8	0.9	0.9	1.1	1.2	1.3	9.8
48.0	0.8	0.9	0.8	0.9	1.0	1.1	0.8	0.9	1.0	1.2	9.4
49.0	1.0	1.2	1.4	1.4	1.5	1.3	1.1	1.2	1.6	1.7	13.5
50.0	1.6	1.6	1.0	1.2	1.1	1.2	1.2	1.6	1.5	1.4	13.4
51.0	1.3	1.1	1.1	1.1	0.9	0.9	0.8	0.7	1.0	0.8	9.6
52.0	0.8	0.9	0.7	0.7	0.7	0.6	0.5	0.5	0.5	0.6	6.4
53.0	0.6	0.6	0.5	0.6	0.6	0.6	0.5	0.6	0.4	0.3	5.2
54.0	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	2.8
55.0	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	2.5
56.0	0.3	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.2	1.8
57.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.2
58.0	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	1.4
59.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.9
60.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.9
61.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.0
62.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.6
63.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.6
64.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8
65.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.2
66.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.1
67.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8
68.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
69.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
70.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
71.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
72.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
73.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
76.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
77.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Exceedance Chart



Exceedance Table

	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%
0%		70.7	67.9	66.6	65.7	64.8	63.5	61.8	60.8	59.8
10%	58.7	57.9	57.2	56.6	55.9	55.6	55.2	54.7	54.3	54.0
20%	53.7	53.5	53.3	53.2	53.0	52.8	52.6	52.4	52.3	52.1
30%	52.0	51.9	51.8	51.7	51.5	51.4	51.3	51.2	51.1	51.0
40%	50.9	50.8	50.8	50.7	50.6	50.6	50.5	50.4	50.3	50.2
50%	50.2	50.1	50.0	49.9	49.9	49.8	49.7	49.7	49.6	49.5
60%	49.4	49.4	49.3	49.2	49.2	49.1	49.0	48.9	48.8	48.7
70%	48.6	48.5	48.4	48.3	48.2	48.1	48.0	47.9	47.8	47.7
80%	47.6	47.5	47.4	47.3	47.2	47.1	46.9	46.8	46.7	46.6
90%	46.5	46.3	46.2	46.0	45.8	45.6	45.3	44.9	44.7	44.2
100%	43.1									

1110 Berendo Street

4/8/2014

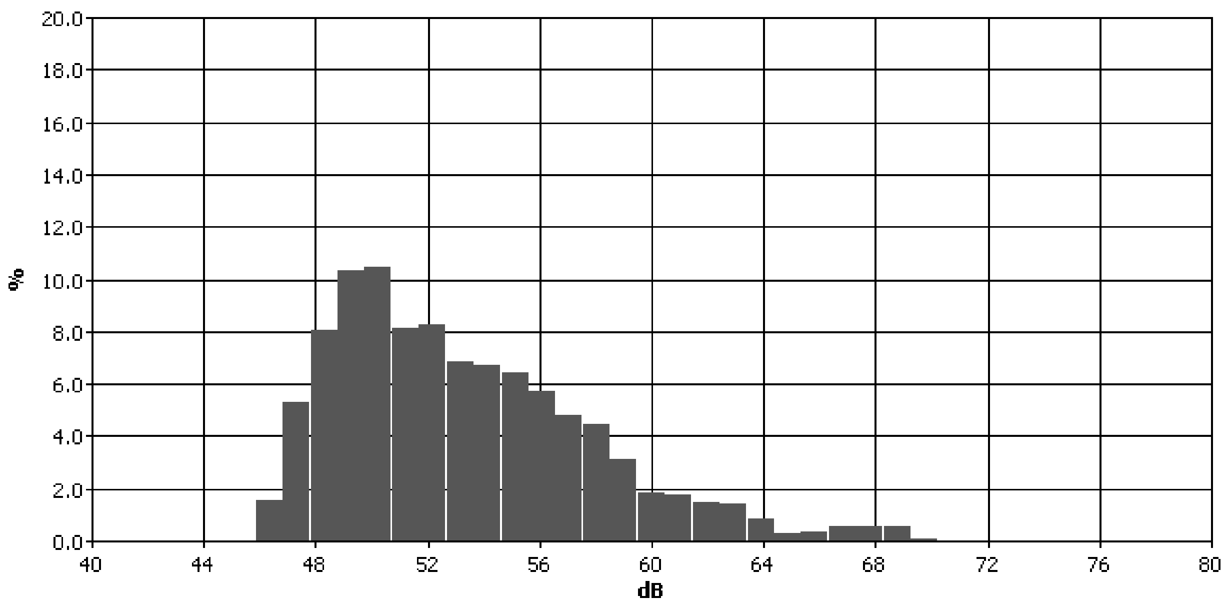
Information Panel

Name	S014_BIJ050019_08042014_185749
Start Time	Tuesday, April 08, 2014 11:31:31
Stop Time	Tuesday, April 08, 2014 11:46:31
Device Model Type	SoundPro DL
Comments	

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	56.9 dB	Dose	1	0 %
Pdose	1	0 %	Lmin	1	45.9 dB
Lmax	1	70.2 dB	Lpk	1	92.6 dB
TWA	1	41.9 dB	OL%	1	0 %
CNEL	1	56.9 dB	ULtime	1	00:00:00
Takt	1	58.9 dB	SEL	1	86.5 dB
ExpSec	1	0.1 Pa2-Sec	LDN	1	56.9 dB
UR%	1	0 %	L1	1	68.3 dB
L10	1	59.7 dB	L50	1	52.6 dB
L90	1	48.3 dB	Mntime	1	4/8/2014 11:34:04 AM
Mxtime	1	4/8/2014 11:32:24 AM	PKtime	1	4/8/2014 11:44:15 AM
Projected TWA	1	56.9 dB	Dose8	1	0 %
ExpHrs	1	0.00 Pa2-Hours	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	SLOW

Statistics Chart



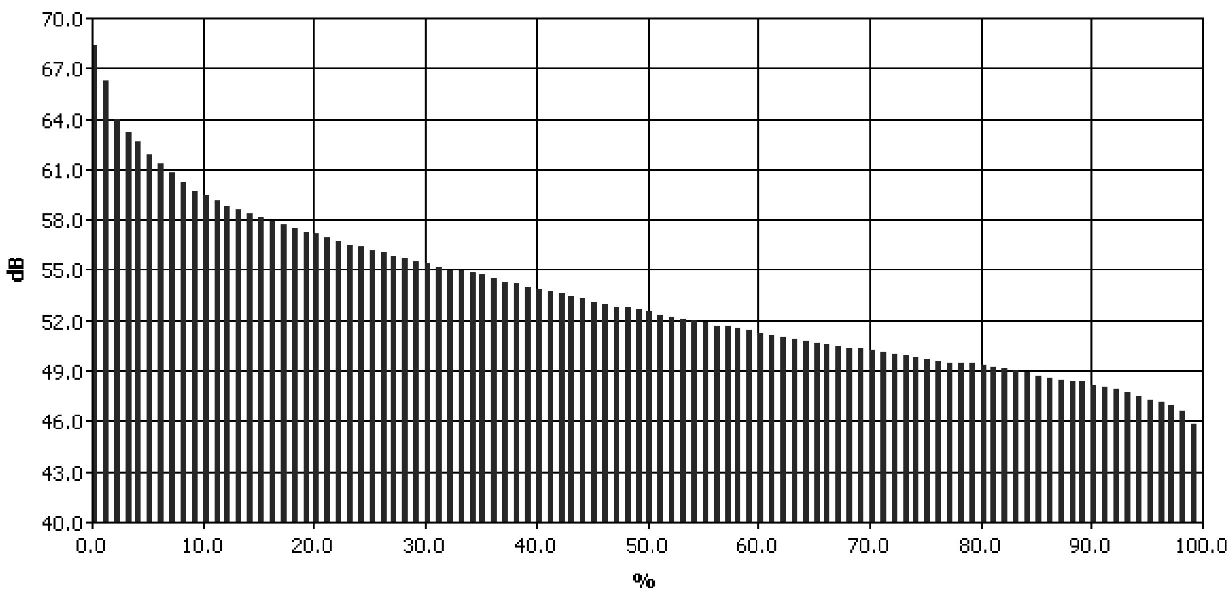
Statistics Table

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46.0	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.3	1.6

Statistics Table (cont'd)

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
47.0	0.5	0.6	0.6	0.5	0.5	0.5	0.4	0.5	0.6	0.7	5.3
48.0	0.7	0.7	0.7	0.8	0.8	0.8	0.9	1.0	0.9	0.8	8.1
49.0	0.8	0.9	1.0	1.1	1.1	1.0	1.1	1.1	1.1	1.1	10.3
50.0	1.4	1.3	0.8	1.2	1.1	1.0	0.8	0.9	1.1	0.9	10.5
51.0	0.9	0.8	0.9	0.9	0.7	0.7	0.7	0.8	1.1	0.7	8.1
52.0	0.8	0.9	0.8	0.8	1.0	0.8	0.7	0.8	0.9	0.7	8.3
53.0	0.7	0.8	0.5	0.6	0.7	0.8	0.6	0.7	0.8	0.7	6.9
54.0	0.6	0.6	0.7	0.5	0.7	0.6	0.6	0.7	0.9	0.8	6.7
55.0	0.7	0.6	0.6	0.7	0.6	0.6	0.6	0.7	0.6	0.7	6.4
56.0	0.5	0.6	0.4	0.5	0.6	0.6	0.7	0.7	0.6	0.5	5.8
57.0	0.5	0.5	0.6	0.5	0.4	0.5	0.4	0.4	0.4	0.5	4.8
58.0	0.5	0.6	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.4	4.5
59.0	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	3.1
60.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	1.9
61.0	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	1.8
62.0	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.2	1.5
63.0	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	1.4
64.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.8
65.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
66.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.4
67.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.6
68.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.6
69.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.5
70.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
71.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
73.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Exceedance Chart



Exceedance Table

	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%
0%		68.3	66.3	64.0	63.2	62.6	61.9	61.3	60.8	60.2
10%	59.7	59.5	59.1	58.8	58.6	58.3	58.1	57.9	57.7	57.5
20%	57.2	57.1	56.9	56.7	56.5	56.4	56.2	56.0	55.8	55.7
30%	55.5	55.4	55.2	55.0	54.9	54.8	54.7	54.5	54.3	54.2
40%	54.0	53.9	53.7	53.6	53.4	53.3	53.1	53.0	52.8	52.7
50%	52.6	52.5	52.3	52.2	52.1	52.0	51.9	51.7	51.6	51.5
60%	51.4	51.2	51.1	51.0	50.9	50.8	50.7	50.6	50.4	50.3
70%	50.3	50.2	50.1	50.0	49.9	49.8	49.7	49.6	49.5	49.5
80%	49.4	49.3	49.2	49.1	49.0	48.9	48.7	48.6	48.5	48.4
90%	48.3	48.1	48.0	47.9	47.7	47.5	47.3	47.1	46.9	46.6
100%	45.8									

2695 11th Street

4/8/2014

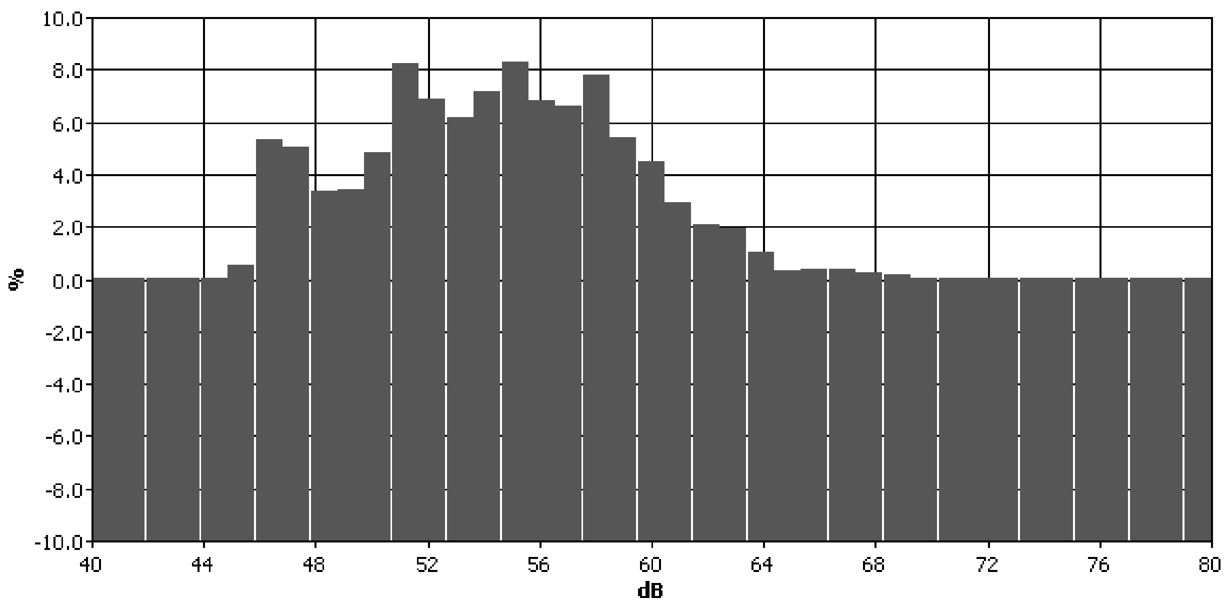
Information Panel

Name	S015_BIJ050019_08042014_185750
Start Time	Tuesday, April 08, 2014 11:51:16
Stop Time	Tuesday, April 08, 2014 12:06:16
Device Model Type	SoundPro DL
Comments	

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	57.4 dB	Dose	1	0 %
Pdose	1	0 %	Lmin	1	45.2 dB
Lmax	1	70.1 dB	Lpk	1	87.4 dB
TWA	1	42.3 dB	OL%	1	0 %
CNEL	1	57.4 dB	ULtime	1	00:00:00
Takt	1	59 dB	SEL	1	86.9 dB
ExpSec	1	0.1 Pa2-Sec	LDN	1	57.4 dB
UR%	1	0 %	L1	1	66.6 dB
L10	1	60.8 dB	L50	1	54.7 dB
L90	1	47.6 dB	Mntime	1	4/8/2014 11:54:29 AM
Mxtime	1	4/8/2014 11:52:11 AM	PKtime	1	4/8/2014 11:52:11 AM
Projected TWA	1	57.4 dB	Dose8	1	0 %
ExpHrs	1	0.00 Pa2-Hours	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	SLOW

Statistics Chart



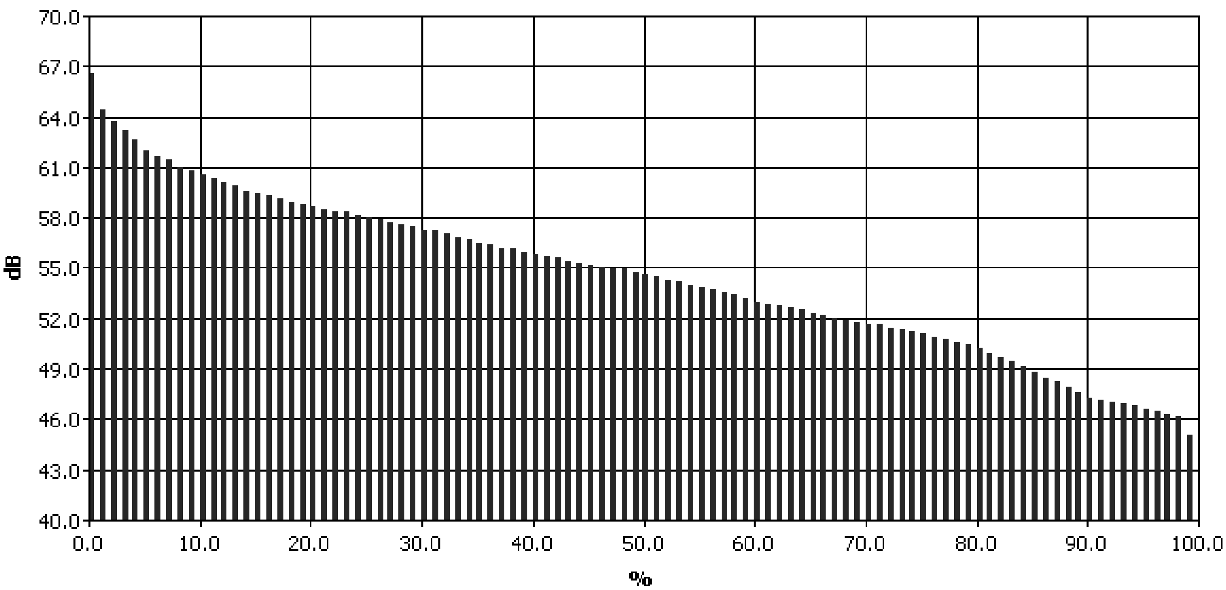
Statistics Table

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.5
46.0	0.2	0.2	0.3	0.5	0.5	0.6	0.5	0.7	0.9	0.9	5.3

Statistics Table (cont'd)

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
47.0	0.9	0.8	0.5	0.5	0.4	0.3	0.4	0.4	0.4	0.4	5.0
48.0	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.4	3.4
49.0	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.4	3.4
50.0	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	4.9
51.0	0.7	0.8	0.7	0.8	0.9	0.9	0.7	1.0	1.0	0.9	8.2
52.0	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	6.9
53.0	0.8	0.7	0.5	0.7	0.6	0.6	0.5	0.5	0.6	0.6	6.2
54.0	0.6	0.8	0.7	0.7	0.7	0.6	0.7	0.7	0.8	0.9	7.2
55.0	0.9	0.9	0.8	0.9	0.8	0.9	0.8	0.8	0.8	0.8	8.3
56.0	0.8	0.8	0.6	0.8	0.7	0.7	0.6	0.7	0.7	0.5	6.9
57.0	0.5	0.5	0.6	0.7	0.8	0.7	0.7	0.7	0.7	0.7	6.6
58.0	0.7	0.8	0.8	0.7	0.8	0.8	0.8	0.7	0.9	0.8	7.8
59.0	0.7	0.7	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5.4
60.0	0.6	0.4	0.4	0.4	0.4	0.3	0.4	0.5	0.5	0.5	4.5
61.0	0.4	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	2.9
62.0	0.3	0.4	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	2.1
63.0	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	2.0
64.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	1.0
65.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
66.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.4
67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.4
68.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
69.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
70.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
73.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Exceedance Chart



Exceedance Table

	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%
0%		66.6	64.4	63.7	63.2	62.6	62.0	61.7	61.4	61.0
10%	60.8	60.6	60.3	60.1	59.9	59.6	59.5	59.3	59.1	58.9
20%	58.8	58.7	58.5	58.4	58.3	58.1	58.0	57.9	57.7	57.6
30%	57.5	57.3	57.2	57.0	56.8	56.7	56.5	56.4	56.2	56.1
40%	55.9	55.8	55.7	55.6	55.4	55.3	55.2	55.1	55.0	54.9
50%	54.7	54.6	54.5	54.3	54.2	54.0	53.9	53.7	53.5	53.4
60%	53.2	53.0	52.9	52.8	52.6	52.5	52.3	52.2	52.0	51.9
70%	51.8	51.7	51.6	51.4	51.3	51.2	51.1	50.9	50.8	50.6
80%	50.4	50.2	49.9	49.7	49.4	49.1	48.8	48.5	48.2	47.9
90%	47.6	47.3	47.1	47.0	46.9	46.8	46.6	46.5	46.3	46.1
100%	45.1									

Berendo Middle School

4/8/2014

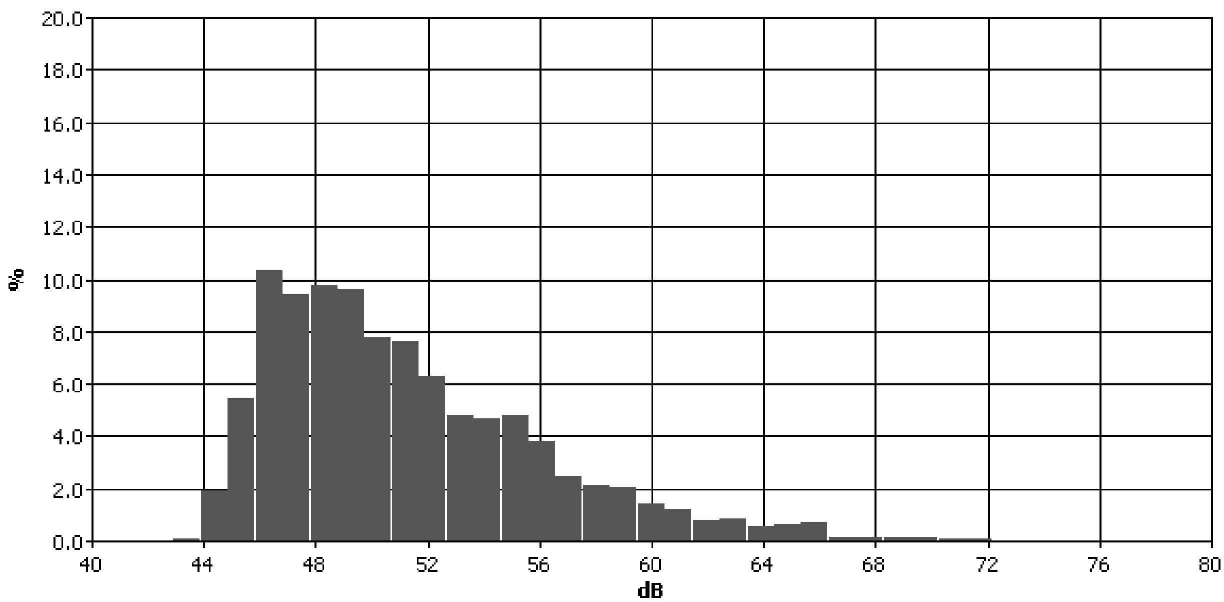
Information Panel

Name	S018_BIJ050019_08042014_185751
Start Time	Tuesday, April 08, 2014 12:59:37
Stop Time	Tuesday, April 08, 2014 13:14:37
Device Model Type	SoundPro DL
Comments	

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	55.6 dB	Dose	1	0 %
Pdose	1	0 %	Lmin	1	43.8 dB
Lmax	1	72.3 dB	Lpk	1	93.2 dB
TWA	1	40.5 dB	OL%	1	0 %
CNEL	1	55.6 dB	ULtime	1	00:00:00
Takt	1	57.6 dB	SEL	1	85.1 dB
ExpSec	1	0.1 Pa2-Sec	LDN	1	55.6 dB
UR%	1	0 %	L1	1	66.4 dB
L10	1	58.3 dB	L50	1	50.3 dB
L90	1	46.2 dB	Mntime	1	4/8/2014 1:10:17 PM
Mxtime	1	4/8/2014 1:06:13 PM	PKtime	1	4/8/2014 1:06:13 PM
Projected TWA	1	55.6 dB	Dose8	1	0 %
ExpHrs	1	0.00 Pa2-Hours	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	SLOW

Statistics Chart



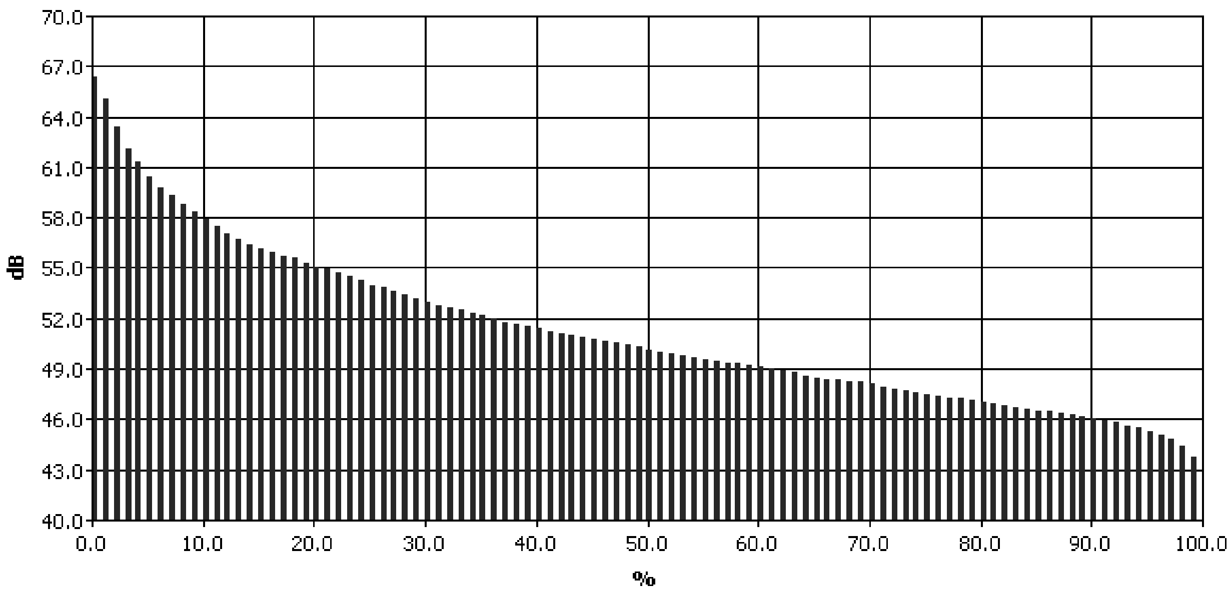
Statistics Table

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
44.0	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.3	0.3	1.9
45.0	0.3	0.3	0.4	0.5	0.5	0.6	0.6	0.8	0.7	0.7	5.4
46.0	0.8	0.8	0.8	1.1	1.0	1.0	1.3	1.1	1.2	1.2	10.3

Statistics Table (cont'd)

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
47.0	1.1	1.1	0.8	1.0	1.1	1.0	0.9	0.8	0.8	0.9	9.4
48.0	0.9	0.9	1.0	1.0	1.0	1.0	1.1	0.9	0.9	1.0	9.8
49.0	1.0	0.9	1.0	1.1	1.2	1.0	0.8	0.9	0.9	0.9	9.6
50.0	0.9	0.9	0.8	0.8	0.8	0.8	0.6	0.7	0.7	0.9	7.8
51.0	1.0	1.0	0.9	0.8	0.8	0.7	0.7	0.7	0.5	0.6	7.7
52.0	0.7	0.6	0.6	0.7	0.8	0.6	0.6	0.6	0.6	0.6	6.3
53.0	0.6	0.5	0.4	0.4	0.5	0.5	0.4	0.5	0.5	0.6	4.8
54.0	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	4.7
55.0	0.5	0.4	0.5	0.4	0.5	0.5	0.5	0.6	0.5	0.6	4.8
56.0	0.5	0.5	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.3	3.8
57.0	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	2.5
58.0	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	2.1
59.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	2.0
60.0	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	1.4
61.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.2
62.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8
63.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.9
64.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.5
65.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.6
66.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.7
67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
68.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
69.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
70.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
71.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
72.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
73.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Exceedance Chart



Exceedance Table

	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%
0%		66.4	65.0	63.4	62.1	61.3	60.4	59.8	59.3	58.8
10%	58.3	57.9	57.5	57.0	56.7	56.4	56.2	55.9	55.7	55.6
20%	55.3	55.1	54.9	54.7	54.5	54.3	54.0	53.8	53.6	53.4
30%	53.2	53.0	52.8	52.6	52.5	52.3	52.2	52.0	51.8	51.7
40%	51.5	51.4	51.2	51.1	51.0	50.9	50.8	50.7	50.5	50.4
50%	50.3	50.1	50.0	49.9	49.8	49.7	49.6	49.4	49.3	49.3
60%	49.2	49.1	49.0	48.9	48.8	48.6	48.5	48.4	48.3	48.2
70%	48.2	48.1	47.9	47.8	47.7	47.6	47.5	47.4	47.3	47.2
80%	47.1	47.0	46.9	46.8	46.7	46.6	46.5	46.5	46.4	46.3
90%	46.2	46.0	45.9	45.8	45.6	45.5	45.3	45.1	44.8	44.4
100%	43.7									

Monsenor Oscar Romero Charter School Noise Monitoring Notes

1. 1110 Berendo Street

The first reading was taken at 11:30 am across from the playing fields of Berendo Middle School at 1110 Berendo St. This site was chosen due to its line of sight and close proximity to the proposed construction. Noise was generally from children playing and a small amount of traffic. Readings were in front of multi-family housing units.

2. 2695 11th Street

The second reading was taken at 11:50 in front of 2695 11th St. This site was chosen due to its proximity to the construction zone and line of sight into the school and playing fields. Noise was primarily from the schoolyard; there was very little traffic along this street.

It should be noted that the playing fields are significantly higher than the street.

3. 1025 Dewey Street

The third reading was taken at 11:55 at 1025 Dewey Street. This site was chosen because on a search of assisted living/ senior centers, this site was identified as such although no signage on the building would indicated any particular use other than apartments. It is closer to Olympic Blvd. than 11th Street so it would also be impacted by Olympic Blvd. Noise was generated by traffic on Olympic and dogs barking. One could still hear children playing at Berendo Middle School.

4. NW Corner of Kenmore and 11th Street

The fourth reading was taken at 12:35 at the northwest corner of Kenmore & 11th Street. This site was chosen to try and simulate what the noise is for the houses abutting the school. Monitoring was not done directly next to the residences (such as 1102 Kenmore) because of the difference in topography- directly next to the residence the sound would be blocked by the large wall. At this time all to he students seemed to be inside; there were now no sounds of children playing and although visual access was limited, no children were seen on the playing fields either.

5. Berendo Middle School

The fifth reading was taken on the sidewalk next to Berendo Middle School across from Dewey Street oat 12:57. There were only a few children playing outside. It should be noted that at this point the school is level with the street and there is a direct line of sight into the school grounds and across to buildings at higher elevation on the other side. Very little traffic was observed.

Overall the temperature was 88 degrees and virtually no wind.

NW Corner of Kenmore & 11th Street

4/8/2014

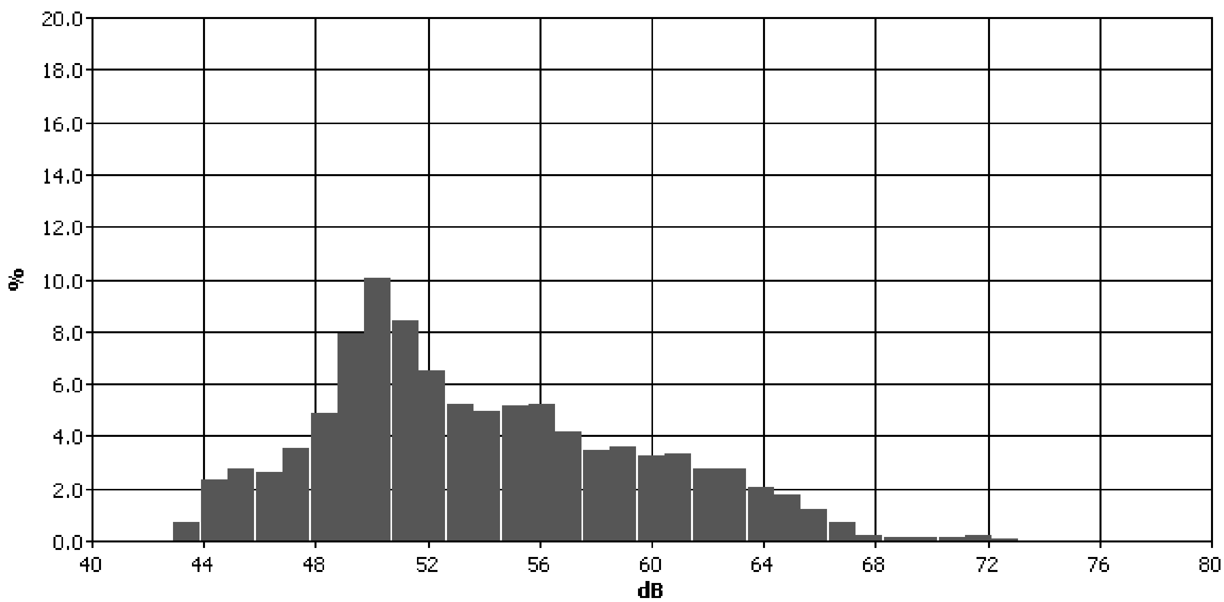
Information Panel

Name	S017_BIJ050019_08042014_185751
Start Time	Tuesday, April 08, 2014 12:36:55
Stop Time	Tuesday, April 08, 2014 12:51:55
Device Model Type	SoundPro DL
Comments	

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	58.4 dB	Dose	1	0 %
Pdose	1	0 %	Lmin	1	42.9 dB
Lmax	1	73.2 dB	Lpk	1	95.2 dB
TWA	1	43.4 dB	OL%	1	0 %
CNEL	1	58.4 dB	ULtime	1	00:00:00
Takt	1	61 dB	SEL	1	88 dB
ExpSec	1	0.2 Pa2-Sec	LDN	1	58.4 dB
UR%	1	0 %	L1	1	67.6 dB
L10	1	62.5 dB	L50	1	52.9 dB
L90	1	47.3 dB	Mntime	1	4/8/2014 12:47:07 PM
Mxtime	1	4/8/2014 12:41:53 PM	PKtime	1	4/8/2014 12:47:57 PM
Projected TWA	1	58.4 dB	Dose8	1	0 %
ExpHrs	1	0.00 Pa2-Hours	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	SLOW

Statistics Chart



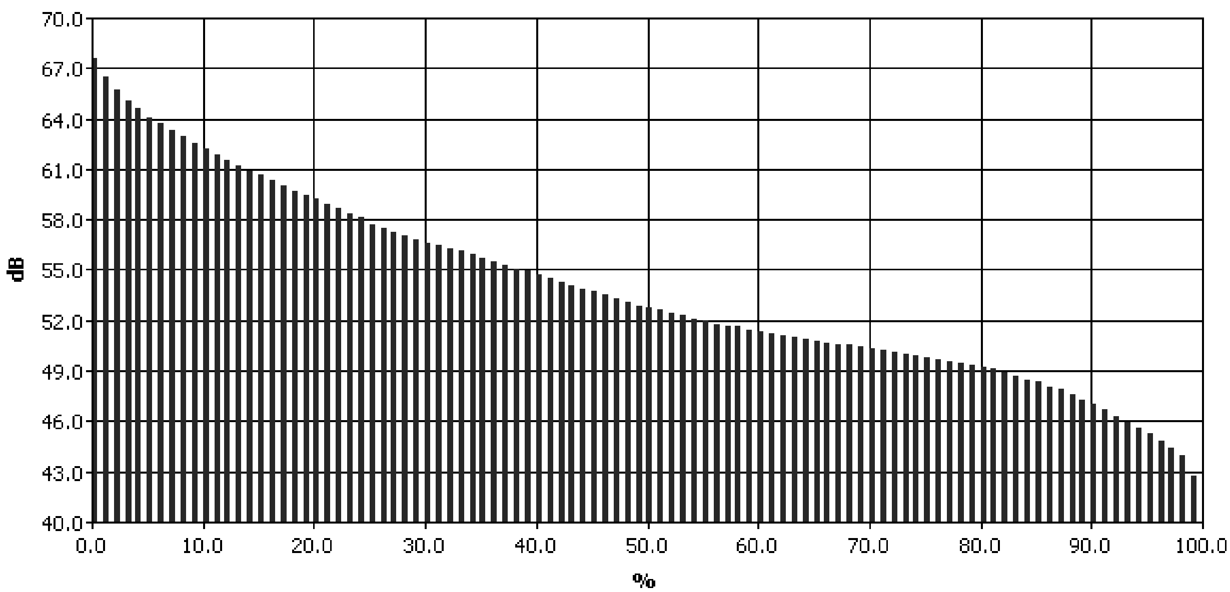
Statistics Table

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.7
44.0	0.1	0.3	0.2	0.3	0.2	0.3	0.3	0.2	0.2	0.2	2.3
45.0	0.2	0.2	0.2	0.3	0.3	0.4	0.3	0.3	0.3	0.3	2.7
46.0	0.3	0.3	0.2	0.3	0.2	0.2	0.3	0.3	0.3	0.3	2.6

Statistics Table (cont'd)

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
47.0	0.3	0.4	0.3	0.3	0.3	0.4	0.3	0.4	0.4	0.4	3.6
48.0	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.4	0.5	0.5	4.9
49.0	0.4	0.5	0.7	0.8	0.8	0.9	1.0	0.9	0.9	1.1	7.9
50.0	1.1	1.0	0.8	1.1	1.0	0.9	1.0	1.1	1.0	1.0	10.0
51.0	1.0	1.0	1.0	0.8	0.8	0.8	0.7	0.7	0.8	0.8	8.4
52.0	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.7	6.5
53.0	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5	5.2
54.0	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.4	0.5	0.4	5.0
55.0	0.4	0.4	0.6	0.5	0.5	0.6	0.6	0.5	0.6	0.5	5.2
56.0	0.5	0.5	0.4	0.4	0.6	0.6	0.5	0.6	0.6	0.5	5.2
57.0	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	4.2
58.0	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.4	0.4	3.5
59.0	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3	3.6
60.0	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.4	0.4	3.2
61.0	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	3.3
62.0	0.4	0.4	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	2.8
63.0	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	2.8
64.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	2.0
65.0	0.2	0.3	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.2	1.7
66.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	1.2
67.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.7
68.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
69.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
70.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
71.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
72.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
73.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Exceedance Chart



Exceedance Table

	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%
0%		67.6	66.5	65.7	65.1	64.6	64.1	63.7	63.3	63.0
10%	62.5	62.2	61.9	61.5	61.2	60.9	60.7	60.3	60.0	59.7
20%	59.4	59.2	58.9	58.7	58.4	58.1	57.7	57.5	57.2	57.0
30%	56.8	56.6	56.5	56.3	56.1	55.9	55.7	55.5	55.3	55.1
40%	54.9	54.7	54.5	54.3	54.1	53.9	53.7	53.5	53.3	53.1
50%	52.9	52.8	52.6	52.4	52.3	52.1	52.0	51.8	51.7	51.6
60%	51.4	51.3	51.2	51.1	51.0	50.9	50.8	50.7	50.6	50.5
70%	50.4	50.3	50.2	50.1	50.0	49.9	49.8	49.7	49.6	49.5
80%	49.3	49.2	49.1	48.9	48.7	48.5	48.3	48.0	47.9	47.6
90%	47.3	47.0	46.7	46.3	45.9	45.6	45.3	44.8	44.4	44.0
100%	42.8									

MORCS Mobile Noise

Existing PM Peak

Road Segment	from:	to:	All Vehicles Total	Vehicle Fleet Assumptions: Auto %	Total	Medium-Duty Trucks %	Total	Heavy-Duty Trucks %	Total	Speed	dBA (from TNM)
Olympic Bl	Catalina	Berendo	3,349	91%	3,048	6%	201	3%	100	35	66.4
Olympic Bl	Berendo	Vermont	3,330	91%	3,030	6%	200	3%	100	35	69.9
Vermont Ave	Olympic	11th	2,350	91%	2,139	6%	141	3%	71	35	72.6
Vermont Ave	12th	Pico	2,612	91%	2,377	6%	157	3%	78	35	73.1
Pico Blvd	Vermont	Berendo	1,734	91%	1,578	6%	104	3%	52	35	70.9
Normandie Ave	11th	12th	1,770	91%	1,611	6%	106	3%	53	35	71.5
11th Ave	Normandie	Mariposa	386	91%	351	6%	23	3%	12	30	64.3

Existing Plus Project PM Peak

Road Segment	from:	to:	All Vehicles Total	Vehicle Fleet Assumptions: Auto Total	Auto Total	dium-Duty Trucks %	Total	Heavy-Duty Trucks %	Total	Speed	dBA (from TNM)	Increase from No Project
Olympic Bl	Catalina	Berendo	3,350	91%	3,049	6%	201	3%	101	35	66.4	0.0
Olympic Bl	Berendo	Vermont	3,332	91%	3,032	6%	200	3%	100	35	69.9	0.0
Vermont Ave	Olympic	11th	2,424	91%	2,206	6%	145	3%	73	35	72.6	0.0
Vermont Ave	12th	Pico	2,691	91%	2,449	6%	161	3%	81	35	73.1	0.0
Pico Blvd	Vermont	Berendo	1,734	91%	1,578	6%	104	3%	52	35	70.9	0.0
Normandie Ave	11th	12th	1,911	91%	1,739	6%	115	3%	57	35	71.5	0.0
11th Ave	Normandie	Mariposa	388	91%	353	6%	23	3%	12	30	64.6	0.3

Future PM Peak

Road Segment	from:	to:	All Vehicles Total	Vehicle Fleet Assumptions: Auto %	Total	Medium-Duty Trucks %	Total	Heavy-Duty Trucks %	Total	Speed	dBA (from TNM)
Olympic Bl	Catalina	Berendo	3,738	91%	3,402	6%	224	3%	112	35	67.0
Olympic Bl	Berendo	Vermont	3,723	91%	3,388	6%	223	3%	112	35	70.4
Vermont Ave	Olympic	11th	2,772	91%	2,523	6%	166	3%	83	35	73.4
Vermont Ave	12th	Pico	2,969	91%	2,702	6%	178	3%	89	35	73.7
Pico Blvd	Vermont	Berendo	1,995	91%	1,815	6%	120	3%	60	35	71.6
Normandie Ave	11th	12th	2,169	91%	1,974	6%	130	3%	65	35	72.3
11th Ave	Normandie	Mariposa	395	91%	359	6%	24	3%	12	30	64.6

Future Plus Project PM Peak

Road Segment	from:	to:	All Vehicles Total	Auto Total	Auto Total	dium-Duty Trucks %	Total	Heavy-Duty Trucks %	Total	Speed	dBA (from TNM)	Increase from No Project
Olympic Bl	Catalina	Berendo	3,744	91%	3,407	6%	225	3%	112	35	67.0	0.0
Olympic Bl	Berendo	Vermont	3,728	91%	3,392	6%	224	3%	112	35	70.4	0.0
Vermont Ave	Olympic	11th	2,706	91%	2,462	6%	162	3%	81	35	73.4	0.0
Vermont Ave	12th	Pico	2,971	91%	2,704	6%	178	3%	89	35	73.7	0.0
Pico Blvd	Vermont	Berendo	1,997	91%	1,817	6%	120	3%	60	35	71.6	0.0
Normandie Ave	11th	12th	2,171	91%	1,976	6%	130	3%	65	35	72.3	0.0
11th Ave	Normandie	Mariposa	397	91%	361	6%	24	3%	12	30	64.8	0.2

MORCS Mobile Noise

Existing AM Peak

Road Segment	from:	to:	All Vehicles Total	Auto %	Total	Medium-Duty Trucks %	Total	Heavy-Duty Trucks %	Total	Speed	dBA (from TNM)
Olympic Bl	Catalina	Berendo	3,198	91%	2,910	6%	192	3%	96	35	66.3
Olympic Bl	Berendo	Vermont	3,235	91%	2,944	6%	194	3%	97	35	69.8
Vermont Ave	Olympic	11th	2,720	91%	2,475	6%	163	3%	82	35	73.2
Vermont Ave	12th	Pico	2,720	91%	2,475	6%	163	3%	82	35	73.2
Pico Blvd	Vermont	Berendo	1,895	91%	1,724	6%	114	3%	57	35	71.5
Normandie Ave	11th	12th	1,714	91%	1,560	6%	103	3%	51	35	71.0
11th Ave	Normandie	Mariposa	208	91%	189	6%	12	3%	6	30	62.3

(Vehicle Fleet Assumptions: Auto through Heavy-Duty Trucks columns)

Existing Plus Project AM Peak

Road Segment	from:	to:	All Vehicles Total	Auto Total	Auto Total	dium-Duty Trucks %	Total	Heavy-Duty Trucks %	Total	Speed	dBA (from TNM)	Increase from No Project
Olympic Bl	Catalina	Berendo	3,203	91%	2,915	6%	192	3%	96	35	66.3	0.0
Olympic Bl	Berendo	Vermont	3,243	91%	2,951	6%	195	3%	97	35	69.8	0.0
Vermont Ave	Olympic	11th	2,695	91%	2,452	6%	162	3%	81	35	73.2	0.0
Vermont Ave	12th	Pico	2,734	91%	2,488	6%	164	3%	82	35	73.2	0.0
Pico Blvd	Vermont	Berendo	1,897	91%	1,726	6%	114	3%	57	35	71.5	0.0
Normandie Ave	11th	12th	1,721	91%	1,566	6%	103	3%	52	35	71	0.0
11th Ave	Normandie	Mariposa	216	91%	197	6%	13	3%	6	30	62.5	0.2

Future AM Peak

Road Segment	from:	to:	All Vehicles Total	Auto %	Total	Medium-Duty Trucks %	Total	Heavy-Duty Trucks %	Total	Speed	dBA (from TNM)
Olympic Bl	Catalina	Berendo	3,453	91%	3,142	6%	207	3%	104	35	66.7
Olympic Bl	Berendo	Vermont	3,502	91%	3,187	6%	210	3%	105	35	70.1
Vermont Ave	Olympic	11th	2,975	91%	2,707	6%	179	3%	89	35	73.6
Vermont Ave	12th	Pico	3,023	91%	2,751	6%	181	3%	91	35	73.6
Pico Blvd	Vermont	Berendo	2,041	91%	1,857	6%	122	3%	61	35	71.8
Normandie Ave	11th	12th	2,023	91%	1,841	6%	121	3%	61	35	71.8
11th Ave	Normandie	Mariposa	211	91%	192	6%	13	3%	6	30	62.6

(Vehicle Fleet Assumptions: Auto through Heavy-Duty Trucks columns)

Future Plus Project AM Peak

Road Segment	from:	to:	All Vehicles Total	Auto Total	Auto Total	dium-Duty Trucks %	Total	Heavy-Duty Trucks %	Total	Speed	dBA (from TNM)	Increase from No Project
Olympic Bl	Catalina	Berendo	3,478	91%	3,165	6%	209	3%	104	35	66.7	0.0
Olympic Bl	Berendo	Vermont	3,522	91%	3,205	6%	211	3%	106	35	70.1	0.0
Vermont Ave	Olympic	11th	2,985	91%	2,716	6%	179	3%	90	35	73.6	0.0
Vermont Ave	12th	Pico	3,031	91%	2,758	6%	182	3%	91	35	73.6	0.0
Pico Blvd	Vermont	Berendo	2,051	91%	1,866	6%	123	3%	62	35	71.8	0.0
Normandie Ave	11th	12th	2,028	91%	1,845	6%	122	3%	61	35	71.8	0.0
11th Ave	Normandie	Mariposa	220	91%	200	6%	13	3%	7	30	62.8	0.2

MORCS - Rooftop HVAC Stationary Noise - Unmitigated

Reference Noise Distance	50
Reference Noise Level	56

Sensitive Receptor	Distance (feet)	Additional Setback of Sources from Property Line (feet)*	Average Distance of Sources (feet)	Attenuation Factors	Maximum Noise Level (dBA)	Existing Ambient (dBA, Leq)	New Ambient (dBA, Leq)	Increase
Apartments at 1110 Berendo	60	183	243	6	48.4	56.9	57.5	0.6
Apartments at 2695 West 11th	65	60	125	9	44.7	57.4	57.6	0.2
Apartments at 1025 Dewey	320	60	380	13.5	26.4	58.0	58.0	0.0
Northwest corner of South Kenmore and 11th	260	183	443	12	29.7	58.4	58.4	0.0

A 6 dBA attenuation was given for a point source over a hard ground surfuce, and 3 dBA reduction was given for the first row of buildings intervening between the construction site and sensitive receptors (1.5 dBA for subsequent intervening structures), as recommended by the Caltrans Technical Noise

MORCS - Parking Lot Noise - Unmitigated

Reference Noise Distance 50

Reference Noise Level 58.1

Sensitive Receptor	Distance (feet)	Attenuation Factors	Maximum Parking Noise Level (dBA)	Existing Ambient (dBA, Leq)	New Ambient (dBA, Leq)	Increase
Apartments at 1110 Berendo	60	6	50.5	56.9	57.8	0.9
Apartments at 2695 West 11th	65	9	46.8	57.4	57.8	0.4
Apartments at 1025 Dewey	320	13.5	28.5	58.0	58.0	0.0
Northwest corner of South Kenmore and 11th	260	12	31.8	58.4	58.4	0.0

A 6 dBA attenuation was given for a point source over a hard ground surfuce, and 3 dBA reduction was given for the first row of buildings intervening between the construction site and sensitive receptors (1.5 dBA for subsequent intervening structures), as recommended by the Caltrans Technical

MORCS - Construction Noise - Unmitigated

Reference Noise Distance	50	feet
Reference Noise Level	92.8	dBA

Sensitive Receptor	Distance (feet)	Additional Setback of Sources from Property Line (feet)*	Average Distance of Sources (feet)	Attenuation Factors
Apartments at 1110 Berendo	60	183	243	6
Apartments at 2695 West 11th	65	60	125	9
Apartments at 1025 Dewey	320	60	380	13.5
Northwest corner of South Kenmore and 11th	260	183	443	12
Berendo Middle School (W. 12th Street)	425	60	485	13.5
Berendo Middle School campus (indoor) demolition and grading	20	60	80	29
Berendo Middle School campus (outdoor) demolition and grading	10	60	70	6
Berendo Middle School campus (indoor) construction	20	60	80	29
Berendo Middle School campus (outdoor) construction	10	200	210	6

Attenuation assumptions:		**Source**
- Hard ground surface	6	dBA FTA "Transit Noise and Vibra
- First row of buildings intevening between construction site and sensitive receptor	3	dBA FTA "Transit Noise and Vibra
- Each subsequent intervening structure	1.5	dBA FTA "Transit Noise and Vibra
- Soft ground surface	2.5	dBA FTA "Transit Noise and Vibra

* Assumes average activity set back 1/3 back on property from applicable property line, except building construction activities that are 200 feet east of the playground west of the Project site

Maximum Construction Noise Level (dBA)	Existing Ambient (dBA, Leq)	New Ambient (dBA, Leq)	Increase
73.1	56.9	73.2	16.3
75.8	57.4	75.9	18.5
61.7	58.0	63.2	5.2
61.8	58.4	63.5	5.1
59.6	55.6	61.0	5.4
59.7	40.6	59.8	19.2
83.9	55.6	83.9	28.3
59.7	40.6	59.8	19.2
74.3	55.6	74.4	18.8

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MORCS - Construction Noise - Mitigated

Reference Noise Distance	50	feet
Reference Noise Level	92.8	dBA

Sensitive Receptor	Distance to site (feet)	Additional Setback of Sources from Property Line (feet)*	Average Distance of Sources (feet)	Attenuation Factors
Apartments at 1110 Berendo	60	183	243	6
Apartments at 2695 West 11th	65	60	125	9
Apartments at 1025 Dewey	320	60	380	13.5
Northwest corner of South Kenmore and 11th	260	183	443	12
Berendo Middle School (W. 12th Street)	425	60	485	13.5
Berendo Middle School campus (indoor) demolition and grading	20	60	80	29
Berendo Middle School campus (outdoor) demolition and grading	10	60	70	6
Berendo Middle School campus (indoor) construction	20	60	80	29
Berendo Middle School campus (outdoor) construction	10	200	210	6

Attenuation assumptions:		**Source**
- Hard ground surface	6	dBA FTA "Transit Noise and Vibra
- First row of buildings intevening between construction site and sensitive receptor	3	dBA FTA "Transit Noise and Vibra
- Each subsequent intervening structure	1.5	dBA FTA "Transit Noise and Vibra
- Soft ground surface	2.5	dBA FTA "Transit Noise and Vibra

Attenuation assumptions:		**Source**
- Installation of mufflers	3	dBA FTA "Transit Noise and Vibra
- Use of sound barrier and blanket	13-23	dBA Consultant assumption
- Avoid use of impact pile driver		
- Use quieter demolition methods		

Mitigation Factors	Maximum Construction Noise Level (dBA)	Existing Ambient (dBA, Leq)	New Ambient (dBA, Leq)	Increase
16.0	57.1	56.9	60.0	3.1
16.0	59.8	57.4	61.8	4.4
3.0	58.7	58.0	61.4	3.4
3.0	58.8	58.4	61.6	3.2
3.0	56.6	55.6	59.1	3.5
18.0	41.7	40.6	44.2	3.6
N/A	N/A	55.6	N/A	N/A
18.0	41.7	40.6	44.2	3.6
16.0	58.3	55.6	60.2	4.6

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CONSTRUCTION NOISE LEVELS OVER KEY CONSTRUCTION PHASES

Demolition	**Equipment**	**Reference**	**Log**	**Assumption**
	Concrete/industrial saw	76	39810717.06	FTA reference level
	Dozer	85	316227766	FTA reference level
	Loader	85	316227766	FTA reference level
	Loader	85	316227766	FTA reference level
	Loader	85	316227766	FTA reference level
	Sum		1304721781	
	control		91.2	

Grading	**Equipment**	**Reference**	**Log**	**Assumption**
	Rubber tired loader	85	316227766	FTA reference level
	Grader	85	316227766	FTA reference level
	Dozer	85	316227766	FTA reference level
	Sum		948683298.1	
	control		89.8	

Construction	**Equipment**	**Reference**	**Log**	**Assumption**
	Generator sets	81	125892541.2	FTA reference level
	Crane	83	199526231.5	FTA reference level for mobile crane
	Forklift	85	316227766	FTA reference level for loader
	Rubber tired loader	85	316227766	Assumes loader reference level
	Welder	85	316227766	Assumes loader reference level for air compressor
	Welder	85	316227766	Assumes loader reference level for air compressor
	Welder	85	316227766	Assumes loader reference level for air compressor
	Sum		1906557603	
	control		92.8	

MORCS - Construction Noise - Mitigated

Reference Noise Distance 50 feet

Reference Noise Level 91.2 dBA

Sensitive Receptor	Distance to site (feet)	Additional Setback of Sources from Property Line (feet)*	Average Distance of Sources (feet)	Attenuation Factors	Mitigation Factors	Maximum Construction Noise Level (dBA)	Existing Ambient (dBA, Leq)	New Ambient (dBA, Leq)	Increase
Apartments at 1110 Berendo	60	183	243	6	16.0	55.5	56.9	59.2	2.3
Apartments at 2695 West 11th	65	60	125	9	16.0	58.2	57.4	60.9	3.5
Apartments at 1025 Dewey	320	60	380	13.5	3.0	57.1	58.0	60.6	2.6
Northwest corner of South Kenmore and 11th	260	183	443	12	3.0	57.2	58.4	60.9	2.5
Berendo Middle School (W. 12th Street)	425	60	485	13.5	3.0	55.0	55.6	58.3	2.7

MORCS - Construction Noise - Unmitigated

Reference Noise Distance 50 feet
Reference Noise Level 91.2 dBA

Sensitive Receptor	Distance (feet)	Additional Setback of Sources from Property Line (feet)*	Average Distance of Sources (feet)	Attenuation Factors	Maximum Construction Noise Level (dBA)	Existing Ambient (dBA, Leq)	New Ambient (dBA, Leq)	Increase
Apartments at 1110 Berendo	60	183	243	6	71.5	56.9	71.6	14.7
Apartments at 2695 West 11th	65	60	125	9	74.2	57.4	74.3	16.9
Apartments at 1025 Dewey	320	60	380	13.5	60.1	58.0	62.2	4.2
Northwest corner of South Kenmore and 11th	260	183	443	12	60.2	58.4	62.4	4.0
Berendo Middle School (W. 12th Street)	425	60	485	13.5	58.0	55.6	60.0	4.4
Berendo Middle School campus (indoor) demolition and grading	20	60	80	29	58.1	40.6	58.2	17.6
Berendo Middle School campus (outdoor) demolition and grading	10	60	70	6	82.3	55.6	82.3	26.7
Berendo Middle School campus (indoor) construction	20	60	80	29	58.1	40.6	58.2	17.6
Berendo Middle School campus (outdoor) construction	10	200	210	6	72.7	55.6	72.8	17.2

Attenuation assumptions:		**Source**
- Hard ground surface	6	dBA FTA "Transit Noise and Vibration Impact Assessment"
- First row of buildings intevening between construction site and sensitive receptor	3	dBA FTA "Transit Noise and Vibration Impact Assessment"
- Each subsequent intervening structure	1.5	dBA FTA "Transit Noise and Vibration Impact Assessment"
- Soft ground surface	2.5	dBA FTA "Transit Noise and Vibration Impact Assessment"

* Assumes average activity set back 1/3 back on property from applicable property line, except building construction activities that are 200 feet east of the playground west of the Project site

MORCS Construction Vibration

Ref=	Reference vibration level (PPV)		
RefD=	Reference distance for Reference vibration level (Feet)		
	Vibration PPV		
	Ref=	0.089	Based on type of equipment
	RefD=	25	
	D=	260	Distance from equipment to sensitive receptor
	Equip=	0.003	
	Annoyance VdB		
	Ref=	87	Based on type of equipment
	RefD=	25	
	D=	260	Distance from equipment to sensitive receptor
	Equip=	56	

MORCS Mitigated Construction Vibration

Ref=	Reference vibration level (PPV)
RefD=	Reference distance for Reference vibration level (Feet)

Vibration PPV

Ref=	0.076	Based on type of equipment
RefD=	25	
D=	62	Distance from equipment to sensitive receptor
Equip=	0.019	

Annoyance VdB

Ref=	86	Based on type of equipment
RefD=	25	
D=	62	Distance from equipment to sensitive receptor
Equip=	74	

APPENDIX D

Traffic Impact Study

Traffic Impact Study for
Monsenor Oscar Romero Charter School (MORCS)
2670 11th Street
Los Angeles, California

May 7, 2014

Prepared for:

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1. Introduction

This study report identifies the potential traffic impacts associated with a proposed charter middle school facility, which will be located at 2670 West 11th Street within the City of Los Angeles.

Prior to the start of the study, KOA Corporation (KOA) coordinated with staff from the Los Angeles Department of Transportation (LADOT) to obtain consensus on the traffic scope, methodology and assumptions. A Memorandum of Understanding (MOU) was prepared and reviewed by LADOT staff. A copy of the final MOU is provided in Appendix A.

1.1 Project Description

The project site is located on the northeastern portion of the existing Berendo Middle School. The proposed development consists of construction of a new two-story, 32,000 square-foot school building with classrooms, administration offices, a multipurpose room, and a lunch shelter. The project will also include a playfield, staff/visitor parking lot, and a student pick-up/drop-off area along 11th Street. The existing school will retain a separate pick-up/drop-off area on Berendo Street.

The proposed middle school, Monsenor Oscar Romero Charter School (MORCS), would provide 450 seats for middle school students (grades 6 to 8) by a planned opening year of 2016. This project is located on the northeastern portion of the existing Berendo Middle School.

Berendo Middle School currently enrolls about 1,200 students in 6th to 8th grades on a single track schedule. In addition, MORCS has used space on the campus for the 2011 to 2013 school years, and approximately 300 students in 6th to 8th grades are currently accommodated in Berendo Middle School facilities. The project, therefore, will allow for an increase in enrollment within the MORCS program by 150 student seats.

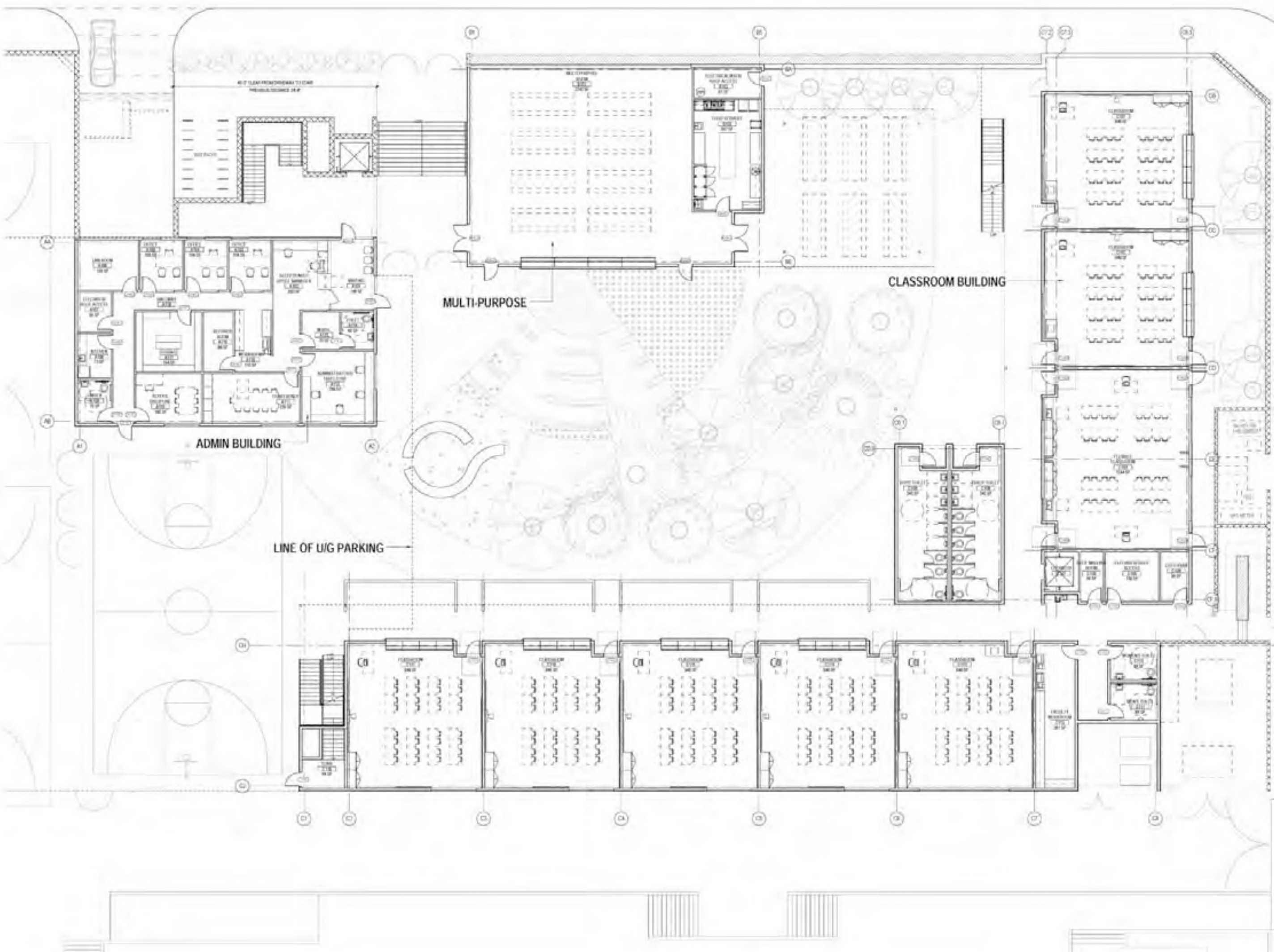
The proposed MORCS project encompasses four areas of the existing middle school campus, identified as Areas A through D. The four areas total approximately 2.36 acres in size and are bordered by South Berendo Street to the east, West 11th Street to the north, and Berendo Middle School to the west and south. The preliminary site plan is provided on Figure 1.

1.2 Project Study Area

The project study area, as defined through consultation with LADOT staff, includes the following five signalized study intersections:

1. Berendo Street & Olympic Boulevard
2. Vermont Avenue & Olympic Boulevard
3. Normandie Avenue & 11th Street
4. Vermont Avenue & 11th Street
5. Vermont Avenue & Pico Boulevard

Figure 2 illustrates the study intersection locations.



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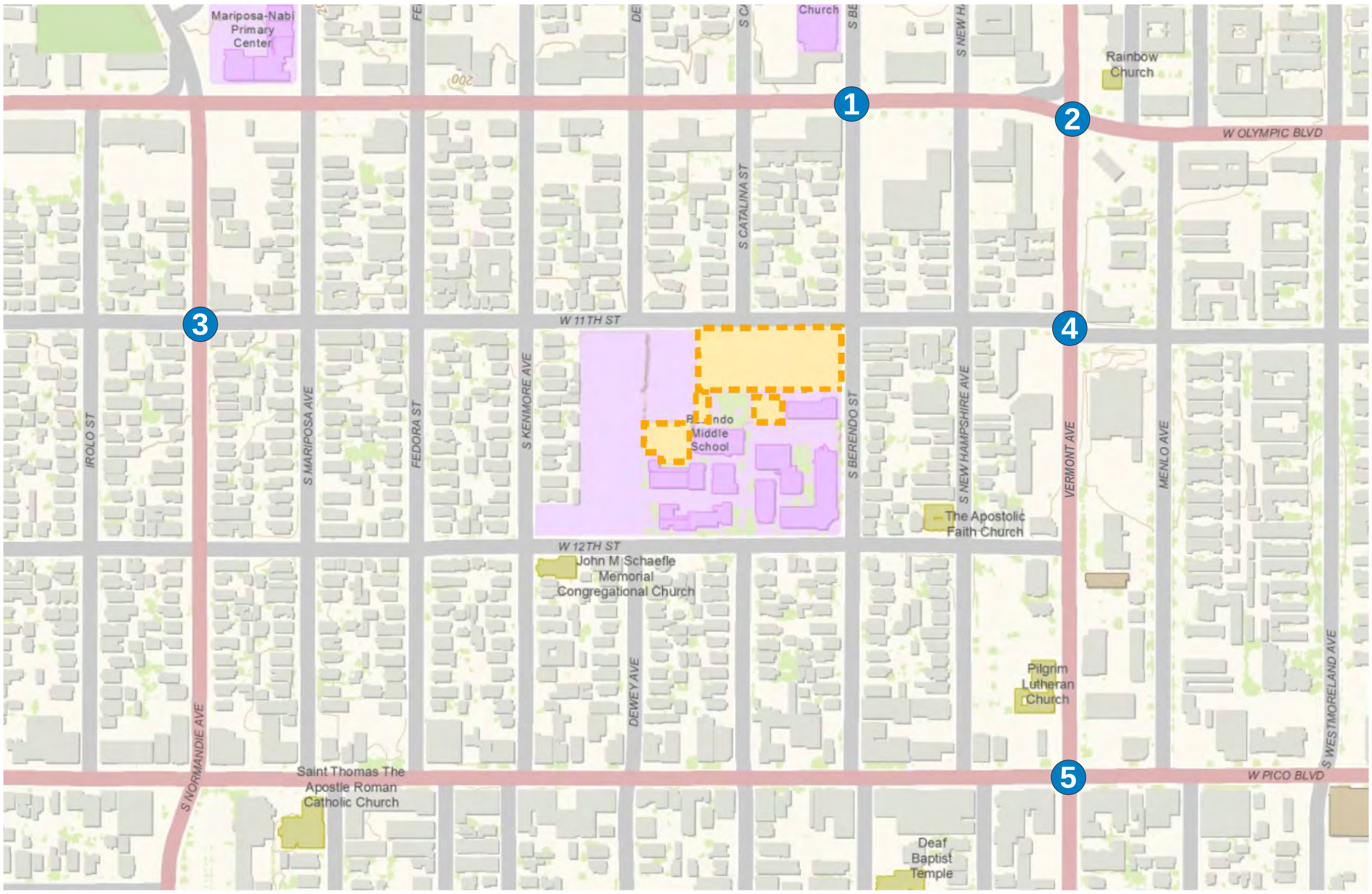
Monsenor Oscar Romero Charter School (MORCS) Traffic Impact Study

Figure 1

Conceptual Project Site Plan



LEGEND

Project Location

Study Intersections

N

Not to Scale

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Monsenor Oscar Romero Charter School (MORCS) Traffic Impact Study

Figure 2

Study Intersection Locations

1.3 Study Scenarios

Project traffic impacts were analyzed for the weekday a.m. and p.m. peak-hour traffic periods at the study intersections. The traffic analysis included the following traffic scenarios:

- Existing Conditions (year 2014)
- Existing with Project (year 2014)
- Future without Project (year 2016)
- Future with Project (year 2016)

1.4 Analysis Methodology

The proposed Project site is located within the City of Los Angeles. KOA coordinated with LADOT at the start of this study to achieve consensus on assumptions such as study intersections, trip generation and trip distribution.

The general methodology and assumptions contained in this report are based on the LADOT *June 2013 Traffic Study Policies and Procedures* document of June 2013. A Memorandum of Understanding (MOU) that included all major traffic study assumptions was submitted to LADOT. An approved MOU executed on April 17, 2014 was received from LADOT.

The list of study intersections is finalized through this process, as are the trip generation and trip distribution assumptions. The following text describes the methodology for this report as defined in the MOU document.

<u>Existing Condition</u>

Fieldwork within the project study area was undertaken to identify the condition of key study area roadways, to identify traffic control and approach lane configuration at each study intersection, and to identify the locations of on-street parking and transit stops.

Traffic counts (including vehicle classifications, bicycles, and pedestrians) were collected in December 2013. New manual intersection turn movement counts were applied to the analysis of existing 2014 traffic conditions at the study intersections. The traffic volume data were factored based on vehicle classification type. Truck volumes were factored by 2.5 and buses were factored by 1.5 to represent the equivalent of one standard vehicle. The traffic count summaries are provided in Appendix C of this report. The existing levels of service at the study intersections are discussed in Section 2 of this report.

<u>Project Trip Generation and Distribution</u>

The applied trip generation rates for Project trips were based on those defined within *Trip Generation (9th Edition),* published by the Institute of Transportation Engineers (ITE). The detailed methodology utilized for the project trip generation and distribution calculations is discussed in Section 3 of this report.

Existing with-Project Conditions

Based on the traffic that is projected for the proposed Project and the existing traffic volumes, a separate existing with-Project conditions scenario was analyzed. This scenario was analyzed in order to comply with rulings in the *Sunnyvale* and *Expo Line* California Environmental Quality Act (CEQA) court cases. The levels of service for existing with-Project conditions at the study intersections are discussed in Section 4 of this report.

Future without-Project Conditions

Typically, regional traffic growth that would affect operations at the study intersections by the anticipated project opening year is added to the study area roadways by applying an ambient/background traffic growth rate to the existing traffic volumes. The opening year of the proposed Project is 2016. Therefore, an annual traffic growth rate of 1% per year was assumed for the analysis of future conditions.

In addition, traffic from area/cumulative projects (approved and pending developments) was included as part of the analysis for future year-2016 conditions. KOA obtained information from LADOT pertaining to projects that would add measurable volumes to the study intersections.

The levels of service for the future without-Project conditions scenario are discussed in Section 5 of this report.

Future with-Project Conditions

Based on the future traffic volumes including traffic from ambient growth, area/related projects and the proposed project, the future with-Project conditions were determined and analyzed. The levels of service for the future with-Project conditions scenario are discussed in Section 6 of this report.

Level-of-Service Methodology

For analysis of Level of Service (LOS) at signalized intersections, LADOT has designated the Circular 212 Planning methodology as the desired tool. The concept of roadway level of service under the Circular 212 method is calculated as the volume of vehicles that pass through the facility divided by the capacity of that facility. A facility is “at capacity” (V/C of 1.00 or greater) when extreme congestion occurs. This volume/capacity ratio value is a function of hourly volumes, signal phasing, and approach lane configuration on each leg of the intersection.

Level of service (LOS) values range from LOS A to LOS F. LOS A indicates excellent operating conditions with little delay to motorists, whereas LOS F represents congested conditions with excessive vehicle delay. LOS E is typically defined as the operating “capacity” of a roadway. Table 1 defines the level of service criteria applied to the study intersections.

Table 1- Level-of-Service Definitions

LOS	Interpretation	Signalized Intersection Volume to Capacity Ratio (CMA)
A	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	0.000 - 0.600
B	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.	0.601 - 0.700
C	Good operation. Occasionally backups may develop behind turning vehicles. Most drivers feel somewhat restricted.	0.701 - 0.800
D	Fair operation. There are no long-standing traffic queues. This level is typically associated with design practice for peak periods.	0.801 - 0.900
E	Poor operation. Some long standing vehicular queues develop on critical approaches.	0.901 - 1.000
F	Forced flow. Represents jammed conditions. Backups from locations downstream or on the cross street may restrict or prevent movements of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop and go type traffic flow.	Over 1.000
Source: Highway Capacity Manual, Special Report 209, Transportation Research Board, Washington D.C., 2000 and Interim Materials on Highway Capacity, NCHRP Circular 212, 1982		

1.5 Traffic Signal Synchronization

Automated Traffic Surveillance and Control (ATSAC) is a computer-based traffic signal control system whereby engineers monitor traffic conditions and system performance, selects appropriate signal timing (control) strategies, and performs equipment diagnostics and alert functions. Sensors in the street detect the passage of vehicles, vehicle speed, and the level of congestion. This information is received on a second-by-second (real-time) basis and is analyzed on a minute-by-minute basis at the ATSAC Operations Center to determine if better traffic flow can be achieved by changing the signal timing. If required, the signal timing is either automatically changed by the ATSAC computers or manually changed by the operator using communication lines that connect the ATSAC Center with each traffic signal. To supplement the information from electronic detectors, closed-circuit television (CCTV) surveillance equipment has been and continues to be installed at critical locations throughout the City.

For capacity analysis, LADOT policies suggest a 0.07 reduction in volume-to-capacity ratio with the implementation of ATSAC. This reduction represents field-measured benefits in flow and capacity increase by operation of this program. All of the study intersections are operated with ATSAC.

1.6 Significant Traffic Impacts

As defined by the LADOT traffic study guidelines, significant impacts of a proposed project on a facility must be mitigated to a level of insignificance, where feasible. Potential significant traffic impacts at the study intersections due to the proposed Project are discussed in Section 7 of this report.

2. Existing Conditions

This section describes the existing conditions within the study area, in terms of roadway facilities and operating conditions.

2.1 Existing Roadway System

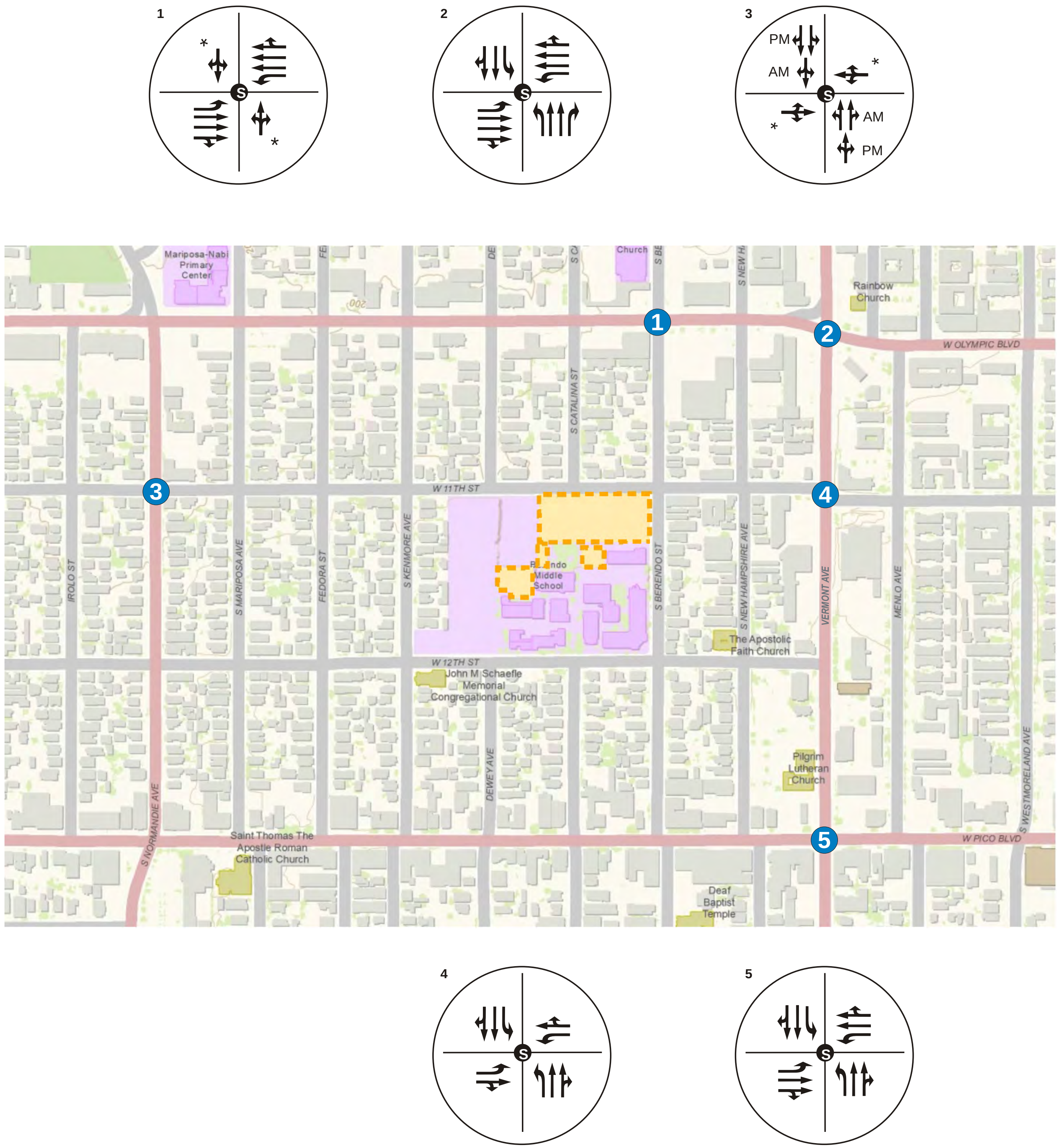
Fieldwork within the Project study area was undertaken to identify traffic control and approach lane configuration at each study intersection, and to identify the locations of on-street parking availability and locations of transit stops. Figure 3 illustrates the existing study intersection approach geometries.

The discussion presented here is limited to specific roadways that traverse the study intersections and serve the project site. The primary roadways within the study area are described below in Table 2.

Table 2 – Study Area Roadway Description

Segment	From	To	# Lanes		Median Type	Parking Restrictions		General Land Use	Posted Speed Limit
			NB / EB	SB / WB		NB / WB	SB / EB		
Normandie Avenue	Olympic Blvd	Pico Blvd	1 / 2	1 / 2	ST	No Stopping 7-9AM	No Stopping 4-7PM	Residential	30
Berendo Street	Olympic Blvd	Pico Blvd	1	1	NS	Permitted	Permitted	Residential / Institutional	-
Vermont Avenue	Olympic Blvd	Pico Blvd	2	2	2LT / ST	No Stopping 7-9AM & 4-7PM / One Hr Pkg 9AM-4PM	No Stopping 7-9AM & 4-7PM / One Hr Pkg 9A-4PM	Commercial	35
Olympic Boulevard	Normandie Ave	Vermont Ave	2 / 3	2 / 3	ST	No Stopping 7-9AM & 3-7PM	No Stopping 7-10AM & 3-7PM	Commercial	35
11th Street	Normandie Ave	Vermont Ave	1	1	ST	Permitted	Permitted	Residential	-
Pico Boulevard	Normandie Ave	Vermont Ave	2	2	ST	No Stopping 4-6PM / One Hr Pkg 8AM-4PM	No Stopping 7-9AM / One Hr Pkg 9AM-6PM	Commercial	35

DY - Double Yellow
2LT - Dual Left Turn
ST - Striped
NS - Not Striped



LEGEND

Project Location

Study Intersections

Signalized Intersection

Intersection Lane Geometry

Note:
* A de facto right-turn lane was assumed due to a wide curb lane.

N

Not to Scale

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Monsenor Oscar Romero Charter School (MORCS) Traffic Impact Study

Figure 3

Existing Intersection Geometry

2.2 Existing Transit Service

Table 3 provides a description of the transit lines that traverse the study area. The existing transit lines are illustrated on Figure 4.

Table 3 – Transit Service Summary

Agency	Line	From	To	Via	Peak Frequency
Metro	28	Century City	Los Angeles	Olympic Boulevard	6 - 15 Minutes
Metro	30	West Hollywood	East Los Angeles	Pico Boulevard	6 - 12 Minutes
Metro	204	Athens	Hollywood	Vermont Avenue	6 - 10 Minutes
Metro	206	Athens	Hollywood	Normandie Avenue	8 - 16 Minutes
Metro	330	West Hollywood	East Los Angeles	Pico Boulevard	20 - 30 Minutes
Metro Rapid	728	Century City	Los Angeles	Olympic Boulevard	10 - 12 Minutes
Metro Rapid	754	Athens	Hollywood	Vermont Avenue	5 - 12 Minutes
LADOT Commuter Express	534	West Los Angeles	Downtown Los Angeles	Olympic Boulevard	20 - 40 Minutes
LADOT DASH	Wilshire Center / Koreatown	Montclair	Los Angeles	Vermont Avenue / Olympic Boulevard / Catalina Street	20 Minutes

2.3 Existing Intersection Levels of Service

The existing weekday a.m. and p.m. peak hour turn movement volumes are provided on Figures 5 and 6, respectively. Based on the existing traffic volumes and the intersection geometries depicted on Figure 3, volume-to-capacity ratios and corresponding levels of service (LOS) were determined for the five study intersections during the weekday a.m. and p.m. peak hours. The LADOT Critical Movement Analysis (CMA) calculation worksheets are provided in Appendix C of this report.

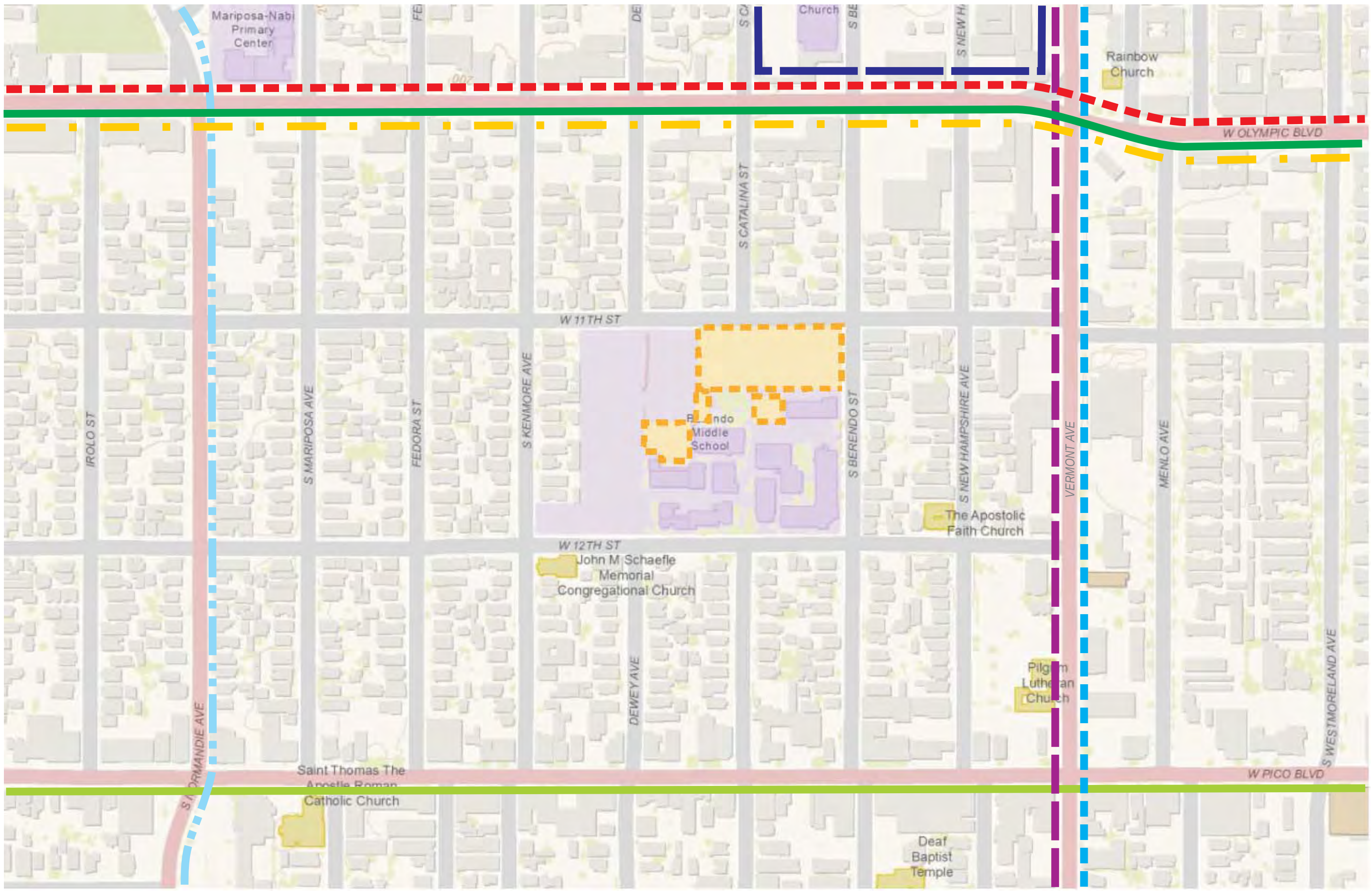
Table 4 summarizes the volume/capacity ratios and LOS values. As indicated by the data within this table, all of the study intersections are currently operating at good levels of service (LOS D or better) during the weekday a.m. and p.m. peak hours. The Vermont Avenue/Olympic Boulevard intersection is the only intersection operating at LOS D during both the weekday a.m. and p.m. peak hours.

Table 4 – Study Intersection Operations - Existing Conditions

Study Intersections		AM Peak		PM Peak	
		V/C	LOS	V/C	LOS
1	Berendo St & Olympic Blvd	0.442	A	0.507	A
2	Vermont Ave & Olympic Blvd	0.898	D	0.865	D
3	Normandie ave & 11th St	0.462	A	0.617	B
4	Vermont Ave & 11th St	0.593	A	0.544	A
5	Vermont Ave & Pico Blvd	0.782	C	0.724	C

LOS = Level of Service

V/C = Volume-to-Capacity Ratio



LEGEND

Project Location
Metro 28
Metro 30/330
Metro 204
Metro 206
Metro Rapid 728
Metro Rapid 754
CE 534
DASH WCK

N
Not to Scale

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Figure 4

Existing Transit Lines

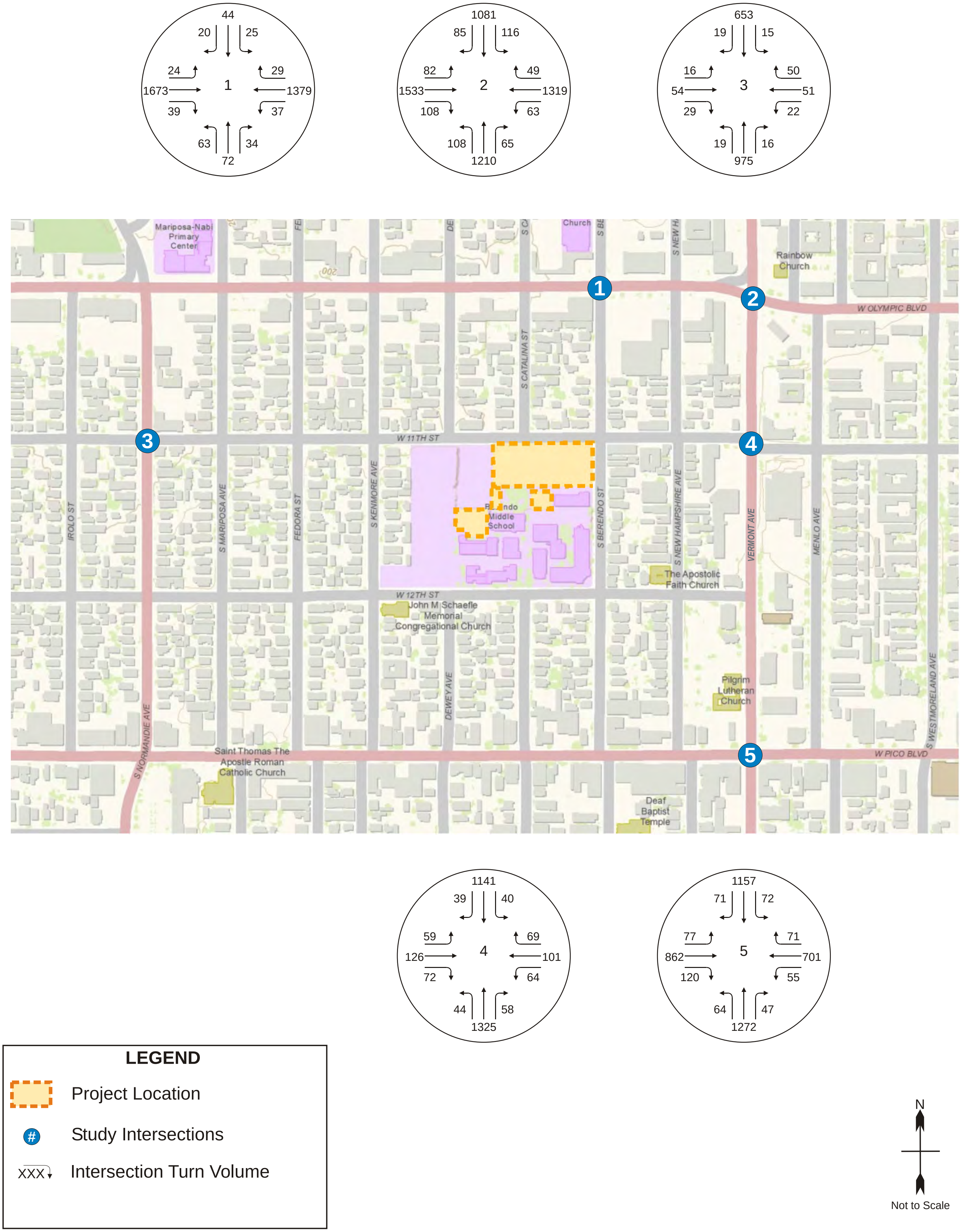

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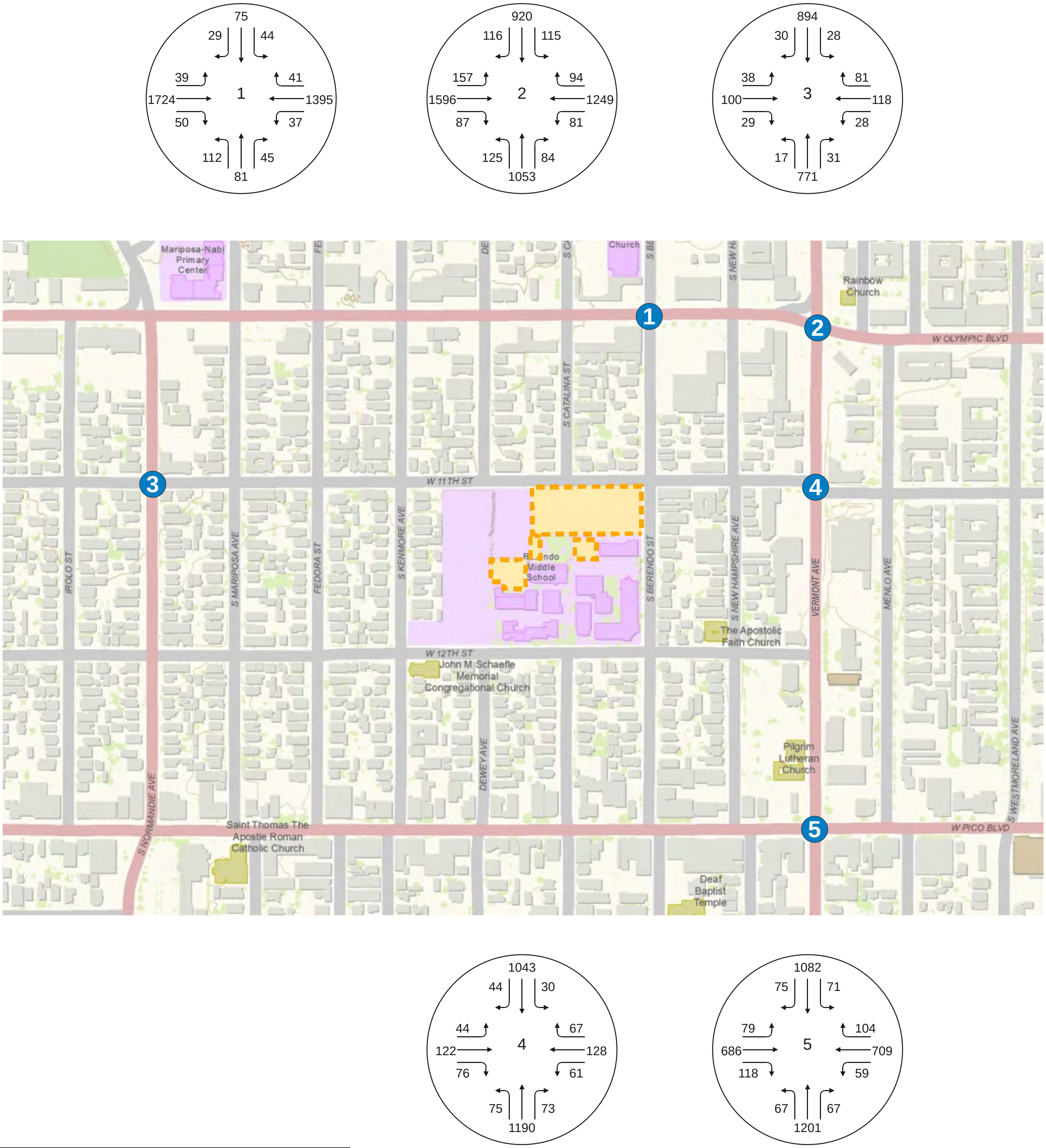
Figure 5

Existing Weekday AM Peak Hour Turn Volumes



LEGEND

Project Location

Study Intersections

XXX Intersection Turn Volume

N

Not to Scale

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Figure 6

Existing Weekday PM Peak Hour Turn Volumes

3. Project Traffic

This section defines the traffic that would be generated by the proposed Project in a three-step process including trip generation, trip distribution and trip assignment.

3.1 Project Trip Generation

The proposed Project will provide 450 seats for middle school students (6th to 8th grades) located on the northeastern portion of the existing Berendo Middle School. The Project currently enrolls 300 students in facilities within the existing campus. The Project, therefore, will allow for an increase in enrollment within the MORCS program by 150 student seats.

Traffic volumes that are expected to be generated by the Project during the weekday a.m. and p.m. peak hours and daily periods were estimated based on trip rates defined in *Trip Generation (9th Edition)*. Public school rates were applied to the proposed charter school use, based on the distribution of waiting list students, as analyzed for the approved MOU. The trip rates and the associated traffic generation forecast for the proposed project are provided in Table 5.

Table 5 – Project Trip Generation

Land Use	Intensity	Units	Daily	AM Peak			PM Peak		
			Total	Total	In	Out	Total	In	Out
Trip Generation Rates									
Middle School	-	students	1.62	0.54	55%	45%	0.16	49%	51%
Trip Generation Estimates									
Middle School	150	students	243	81	45	36	24	12	12
		Subtotal	243	81	45	36	24	12	12
Net Total			**243**	**81**	**45**	**36**	**24**	**12**	**12**

Trip generation rates source: ITE Trip Generation (9th Edition)

The proposed new middle school facility is projected to generate approximately 243 weekday daily trips, including 81 trips during the a.m. peak hour and 24 trips during the p.m. peak hour.

3.2 Project Trip Distribution

Trip distribution is the process of assigning the directions from which traffic will access a project site. Trip distribution is dependent upon the land use characteristics of the project, the local roadway network, and the general locations of other land uses to which project trips would originate or terminate.

Based on consultation with LADOT staff during development of the MOU, a trip distribution pattern was developed specifically for this project based on existing student zip codes. Figure 7 illustrates the intersection trip distribution percentages that were applied to the Project trip generation.

3.3 Project Trip Assignment

Based on the trip generation and distribution assumptions described above, Project traffic was assigned to the roadway system based on site driveway locations, the pick-up/drop-off location, and the roadways that would likely be used to access the regional highway system.

Figures 8 and 9 illustrate the assigned project trips for the weekday a.m. and p.m. peak hours, respectively.

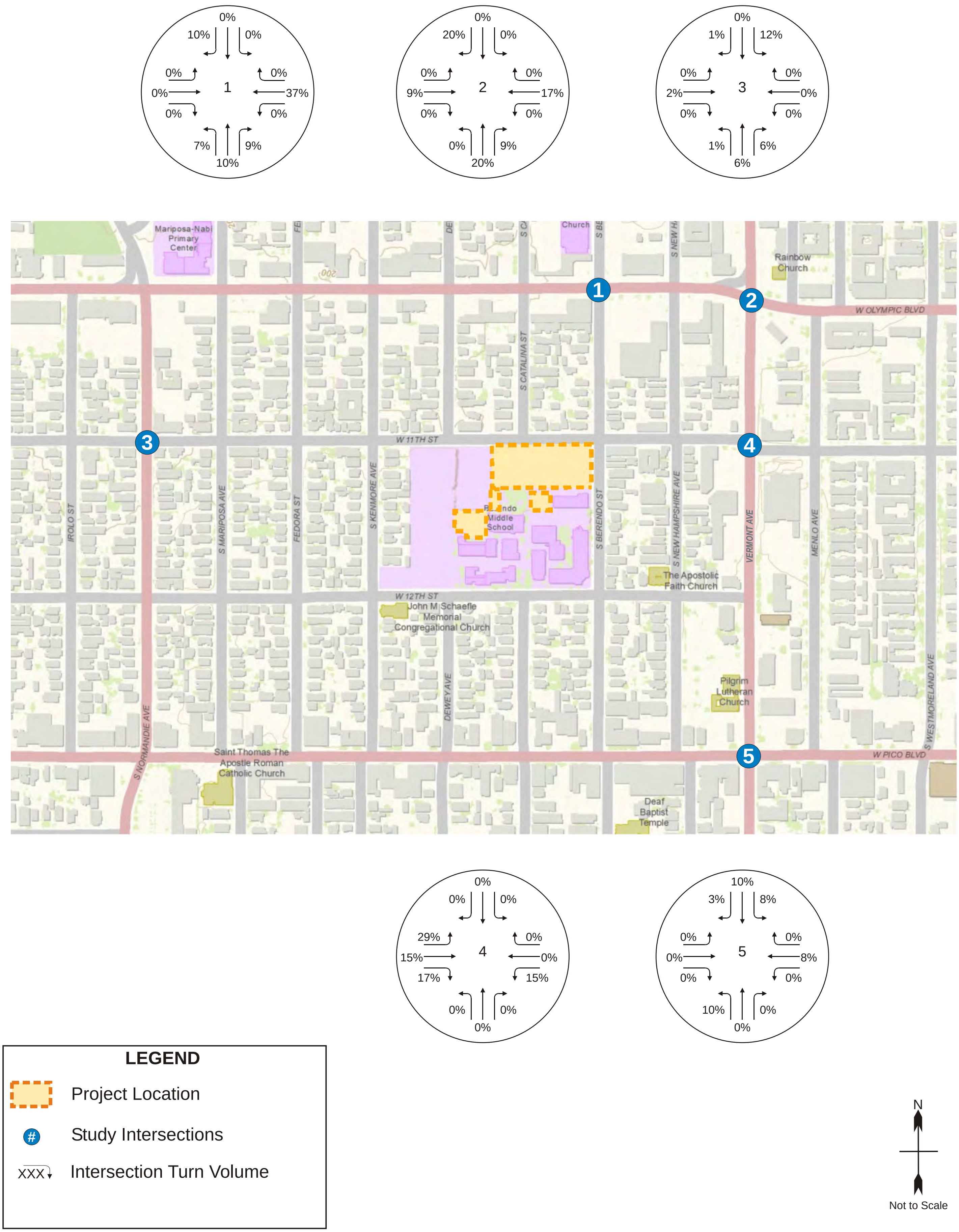

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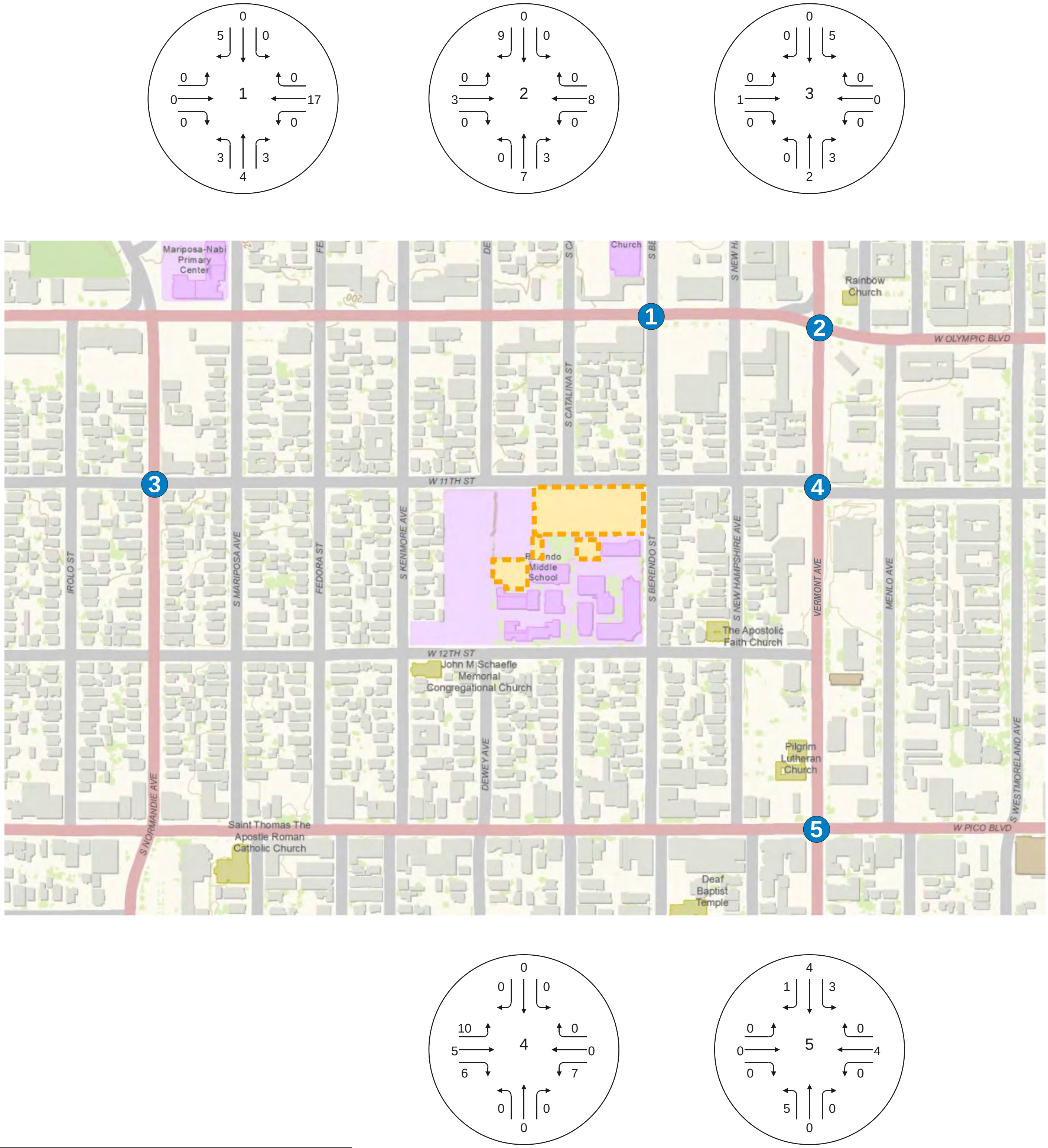
Figure 7

Project Trip Distribution



LEGEND

Project Location

Study Intersections

XXX Intersection Turn Volume

N

Not to Scale

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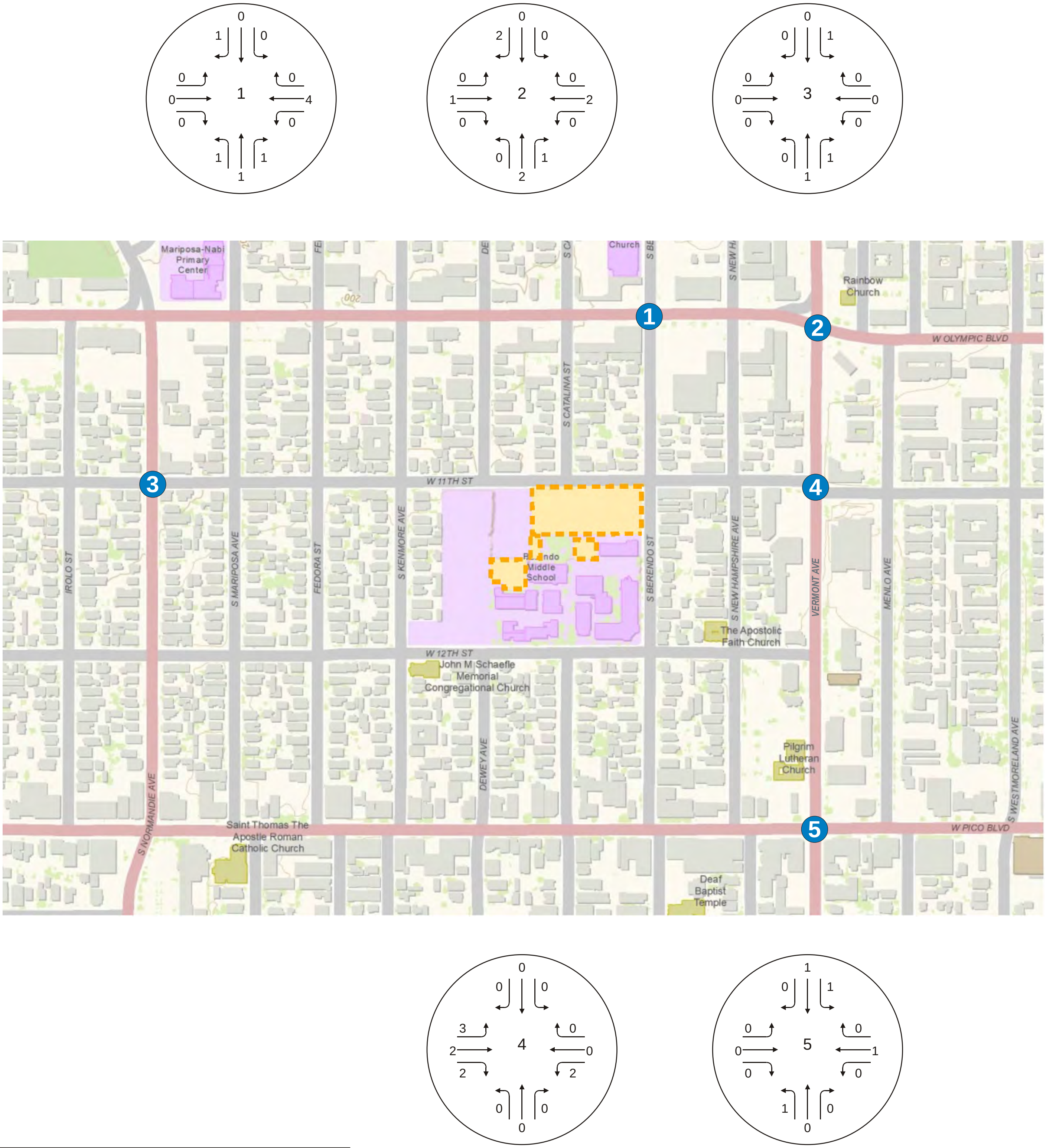
Figure 8

Weekday AM Peak Hour Trip Assignment - Net Project Traffic



LEGEND

Project Location

Study Intersections

XXX Intersection Turn Volume

N

Not to Scale

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Figure 9

Weekday PM Peak Hour Trip Assignment - Net Project Traffic

4. Existing with-Project Conditions

This section documents existing traffic conditions at the study intersections with the addition of project-generated traffic. This scenario was analyzed in order to comply with rulings in the *Sunnyvale* and *Expo Line* CEQA court cases.

Traffic volumes for these conditions were derived by adding the net project trips to the existing traffic volumes. The existing with-Project traffic volumes are illustrated on Figure 10 (a.m. peak hour) and Figure 11 (p.m. peak hour).

Table 6 summarizes the resulting V/C and LOS values at the study intersections for the existing with Project conditions. The LADOT Critical Movement Analysis (CMA) calculation worksheets are provided in Appendix C of this report.

Table 6 – Study Intersection Operations – Existing With Project Conditions

Study Intersections		AM Peak		PM Peak	
		V/C	LOS	V/C	LOS
1	Berendo St & Olympic Blvd	0.447	A	0.508	A
2	Vermont Ave & Olympic Blvd	0.901	**E**	0.865	D
3	Normandie ave & 11th St	0.465	A	0.619	B
4	Vermont Ave & 11th St	0.600	A	0.546	A
5	Vermont Ave & Pico Blvd	0.785	C	0.725	C

LOS = Level of Service

V/C = Volume-to-Capacity Ratio

Four of the study intersections are projected to operate at a good level of service (LOS D or better) under existing with-Project conditions during the weekday a.m. and p.m. peak hours. The Vermont Avenue/Olympic Boulevard intersection is projected to be the only intersection to degrade in operations from LOS D to LOS E with Project traffic, which would occur during the weekday a.m. peak hour.

Determinations of significant traffic impacts created by Project traffic are discussed in Section 7 of this report.

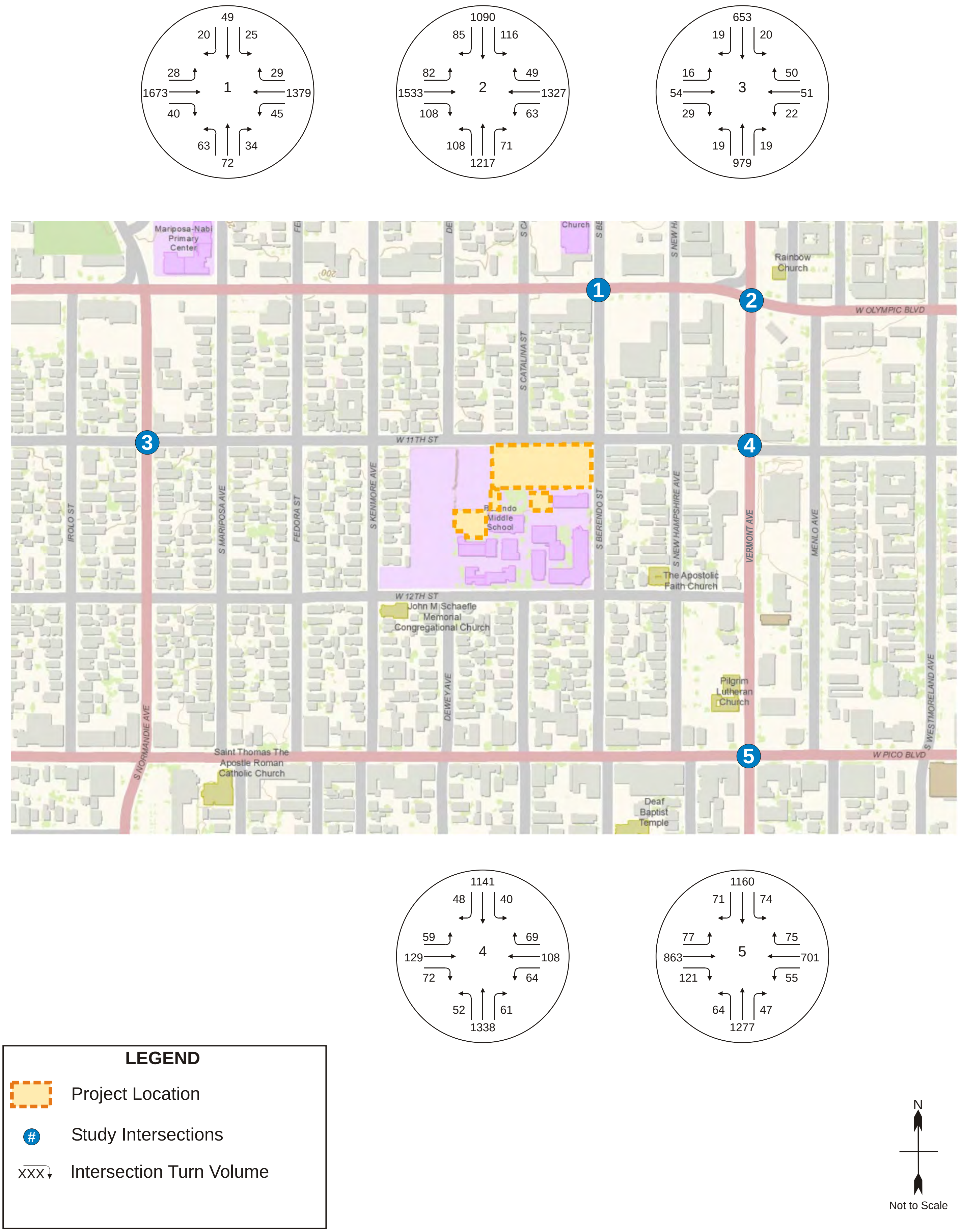

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Figure 10

Existing with Project - AM Peak Hour Turn Volumes

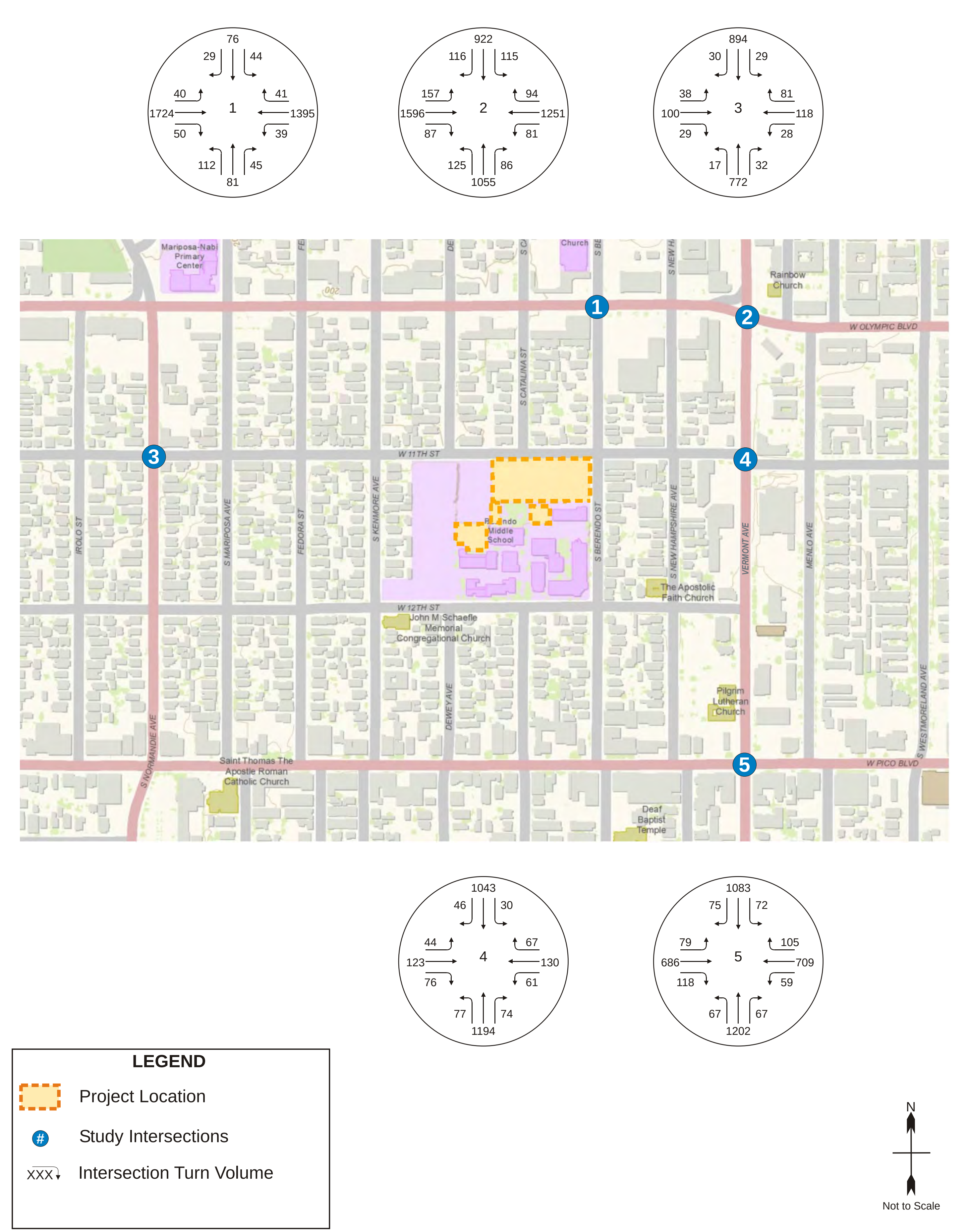

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Figure 11

Existing with Project - PM Peak Hour Turn Volumes

5. Future 2016 without-Project Conditions

This section provides an analysis of future traffic conditions in the study area with ambient growth and area/cumulative projects added but without the proposed Project. The year 2016 was selected for analysis based on the anticipated completion date of the Project.

5.1 Ambient Growth

For the analysis of background traffic for year 2016, an annual traffic growth factor of one percent was utilized to provide for increases in traffic from the existing (2014) traffic volumes. This growth rate was included in the approved MOU.

To apply this ambient growth rate to the existing traffic volumes, a factor of 1.02 was utilized. This factor simulates a two percent increase over the two-year period between existing (2014) and future (2016) conditions.

5.2 Area/Cumulative Projects

Based on a review of the area project list provided by LADOT Development Review, 37 area projects in the City of Los Angeles were included in the traffic analysis. These projects are all located within an approximate one-mile radius from the Project site.

Figure 12 illustrates the locations of the area projects, and Table 7 provides the area project trip generation calculations, by defined zones that were used to conglomerate the projects into trip generation points within the roadway network.

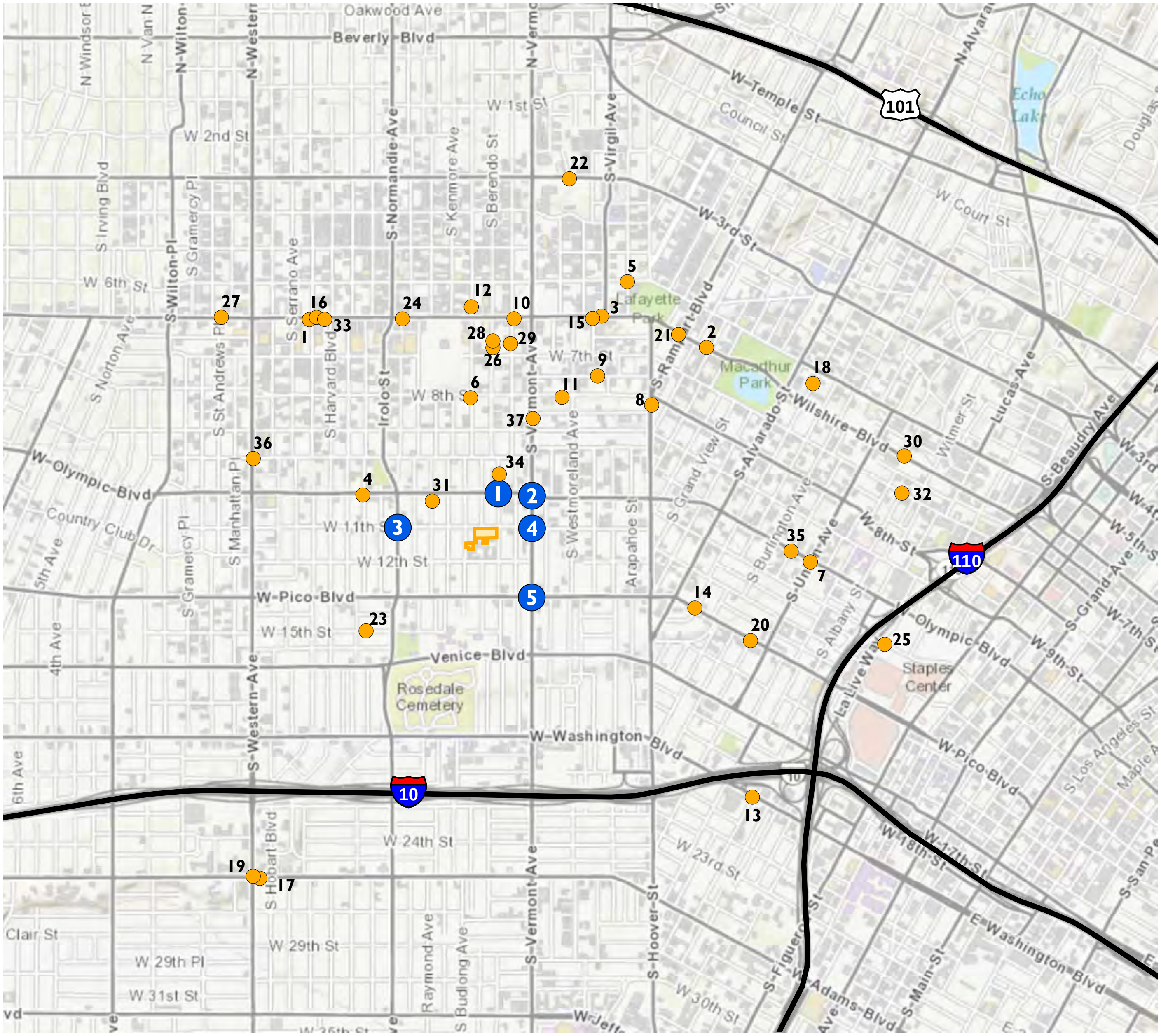
Table 7 – Area/Cumulative Projects Trip Generation

ID	Project Title	Address	Land Use	Size	Unit	Daily	AM Peak Hour			PM Peak Hour		
							Total	In	Out	Total	In	Out
1	Mixed Use	3670 W Wilshire Blvd	Condominiums Retail	378 8.000	DU KSF	**2,480**	**197**	55	142	**220**	144	76
2	Mixed Use (Wilshire Coronado)	2525 Wilshire Blvd	Condominiums Retail	160 7.500	DU KSF	**1,160**	**76**	16	60	**97**	61	36
3	Mixed Use	3033 W Wilshire Blvd	Condominiums Retail	189 5.540	DU KSF	**816**	**61**	12	49	**74**	45	29
4	Shopping Center	3060 W Olympic Blvd	Retail	109.006	KSF	**4,134**	**86**	60	26	**360**	169	191
5	Wilshire Parkview	2950 W 6th St	Hotel Hotel Condo Condominiums Retail Restaurant	80 112 165 7.500 13.00	Rooms Units Units KSF KSF	**2,628**	**163**	78	85	**206**	121	85
6	Mixed Use	805 S Catalina St	Condominiums Retail	300 5.000	DU KSF	**1,935**	**161**	137	24	**167**	110	57
7	Gas Station / Mini Market Expansion	1600 W Olympic Blvd	Gas Station	8	Fueling Positions	**1,302**	**81**	40	41	**107**	53	54
8	Mixed Use	820 S Hoover St	Condominiums Retail	32 4.500	DU KSF	**414**	**22**	7	15	**32**	18	14
9	Residential	2929 W Leeward Ave	Apartments	125	DU	**692**	**32**	11	21	**72**	48	24
10	Mixed Use (Condo Hotel)	3240 Wilshire Blvd	Condominiums Hotel Quality Restaurant Retail	169 57 4.500 1.700	DU Rooms KSF KSF	**1,523**	**93**	28	65	**126**	80	46
11	Affordable Housing & Assisted Living	2924 W 8th St	Apartments Assisted Living	37 48	DU DU	**416**	**23**	6	17	**28**	18	10
12	Mixed Use (Condo Hotel)	635 Catalina St	Apartments Hotel Quality Restaurant	7 75 1.547	DU Rooms KSF	**643**	**39**	21	18	**50**	27	23
13	Oak Village Residence Project	902 W Washington Blvd	Condominiums	142	DU	**482**	**27**	2	25	**51**	35	16
14	Laborers Local 300 Headquarters	2005 W Pico Blvd	Office	30.300	KSF	**224**	**32**	28	4	**30**	5	25
15	Southwestern Law School Expansion	3050 W Wilshire Blvd	Apartments School Lecture Hall	133 43.400 450	DU KSF Seats	**-1,337**	**-51**	-35	-16	**-97**	-45	-52

Table 7 – Related Project Trip Generation (Continued)

ID	Project Title	Address	Land Use	Size	Unit	Daily	AM Peak Hour			PM Peak Hour		
							Total	In	Out	Total	In	Out
16	Wilshire Temple Master Plan	3663 W Wilshire Blvd	Office Nursery School Elementary School	55.380 216 420	KSF Seats Seats	**825**	**138**	94	44	**23**	20	3
17	South LA Redevelopment 4B	1982 W Adams Blvd	Retail Office	10.000 22.000	KSF KSF	**457**	**39**	34	5	**52**	9	43
18	Residential & Public Parking Project	619 S Westlake Ave	Apartments	52	DU	**254**	**20**	3	17	**24**	16	8
19	West Adams Office	1999 W Adams Blvd	Office	75.000	KSF	**826**	**116**	102	14	**112**	19	93
20	PCSD - Pacific Charter Elementary School	1700 W Pico Blvd	School	450	Seats	**492**	**195**	106	89	**60**	31	29
21	Chuck E Cheese	2706 W Wilshire Blvd	Restaurant	16.452	KSF	**1,002**	**9**	6	3	**83**	51	32
22	Charter School Relocation (Camino Nuevo)	3400 W 3RD ST	Elementary School K-8	696	Seats	**764**	**266**	146	120	**88**	43	45
23	15th St Charter School	2755 W 15TH ST	Middle School	300	Seats	**486**	**123**	67	56	**48**	24	24
24	Health Club	3470 W Wilshire Blvd	Health Club	20.178	KSF	**231**	**-7**	-13	6	**21**	22	-1
25	Convention Center Modernization & Farmers Field	1110 W 11th St	Stadium Event Center - Rentable Exhibition Space Event Center - Meeting Room Weekday Sold-Out NFL game	76,250 143.500 102,150 -	Seats KSF KSF -	**19,460**	**n/a**	n/a	n/a	**10,002**	9,777	225
26	Berendo Apartments	688 S Berendo St	Apartments	136	DU	**678**	**52**	10	42	**63**	41	22
27	Apartments	3869 W Wilshire Blvd	Apartments	84	DU	**538**	**39**	8	31	**55**	36	19
28	Apartments	680 S Berendo St	Apartments	177	DU	**1,000**	**75**	15	60	**94**	62	32
29	Apartments	685 S New Hampshire Ave	Apartments	177	DU	**1,000**	**76**	15	61	**93**	61	32
30	Mixed Use (Valencia Project)	1501 W Wilshire Blvd	Apartments Retail Restaurant	218 6.000 1.500	DU KSF KSF	**1,163**	**7**	-11	18	**61**	38	23
31	Fedora Street Hotel	1020 S Fedora St	Hotel	86	Rooms	**616**	**42**	28	14	**44**	23	21
32	Mixed Use	1329 W 7th St	Apartments High-Turnover Restaurant	94 2.000	DU KSF	**662**	**53**	16	37	**61**	39	22
33	Residential	3640 W Wilshire Blvd	Apartments	209	DU	**1,182**	**90**	18	72	**113**	73	40
34	Church	968 S Berendo St	Church	85.308	KSF	**535**	**31**	23	8	**12**	3	9
35	Hotel	1700 W Olympic Blvd	Hotel	160	Rooms	**1,157**	**76**	44	32	**87**	45	42
36	Mixed Use	940 S Western Ave	Apartments Retail	79 8.000	DU KSF	**380**	**37**	6	31	**37**	26	11
37	Mixed Use	864 S Vermont Ave	Apartments Retail	411 43.800	DU KSF	**3,202**	**153**	24	129	**265**	164	101

Figures 13 and 14 illustrate the total a.m. and p.m. trips generated by the area projects at the study intersections.



Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

LEGEND

Project Site

Study Intersection with Reference Number

Related Project Location with Reference Number

Feet
0 1,375 2,750

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MORCS Charter School - 1157 S. Berendo Street

Figure 12

Location of Related Projects

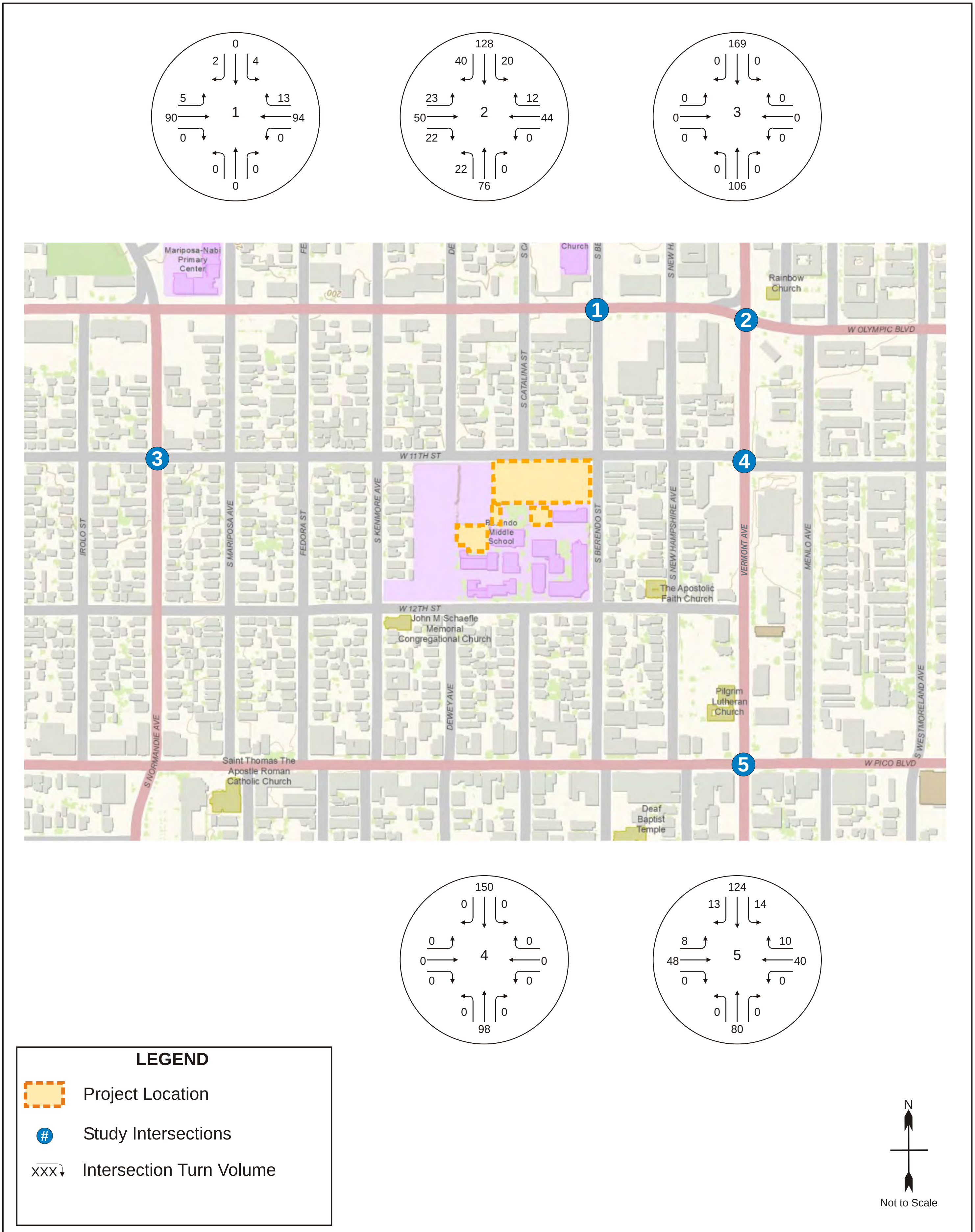

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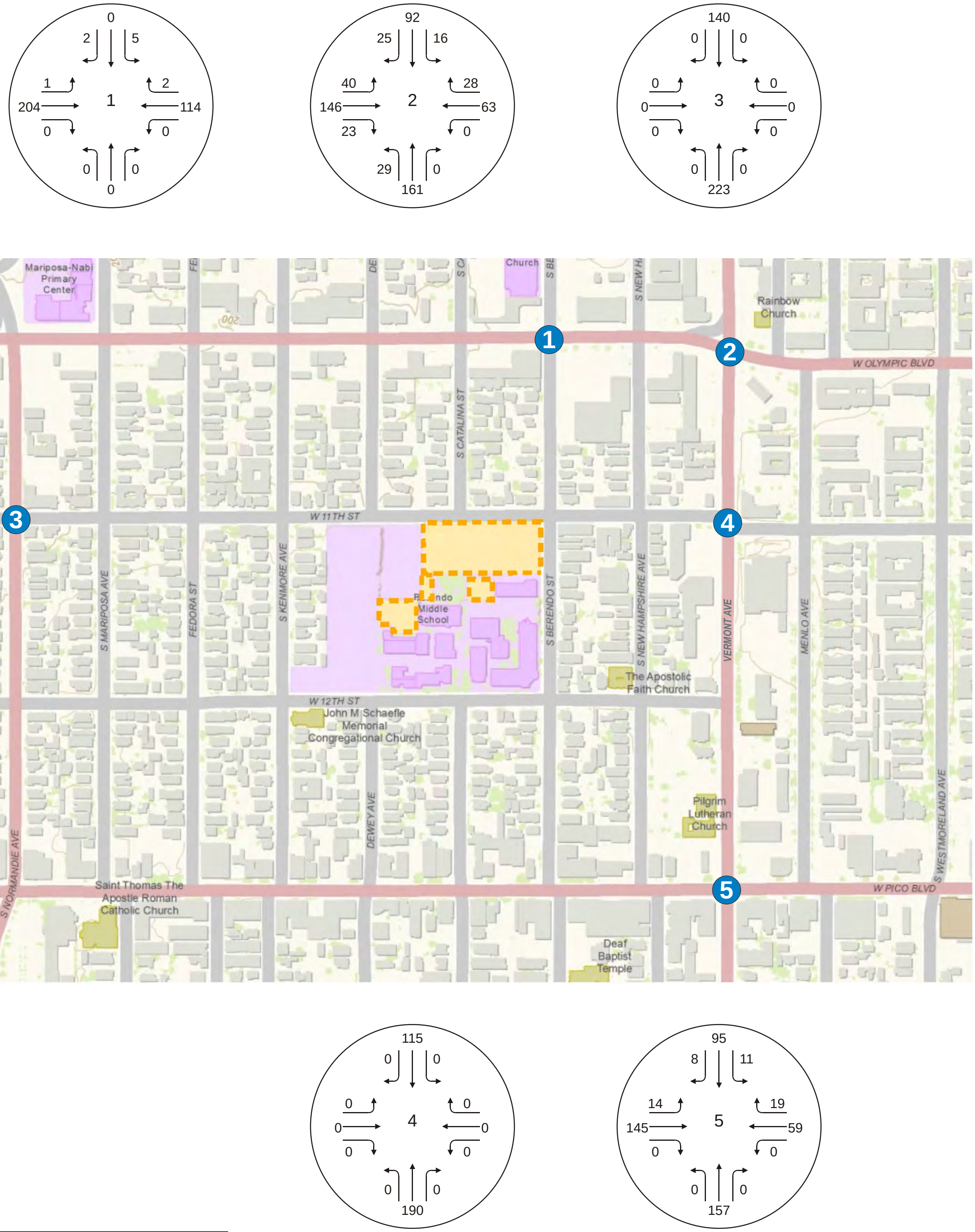
Figure 13

Related Project AM Peak Hour Turn Volumes



LEGEND

Project Location

Study Intersections

XXX Intersection Turn Volume

N

Not to Scale

5.3 Future without Project Intersection Levels of Service

The future 2016 without-Project traffic volumes are illustrated on Figure 15 (a.m. peak hour) and Figure 16 (p.m. peak hour). The LADOT Critical Movement Analysis (CMA) calculation worksheets are provided in Appendix C of this report.

Table 8 summarizes the V/C and LOS values at the study intersections for this scenario.

Table 8 – Study Intersection Operations –
Future (Year 2016) Without Project Conditions

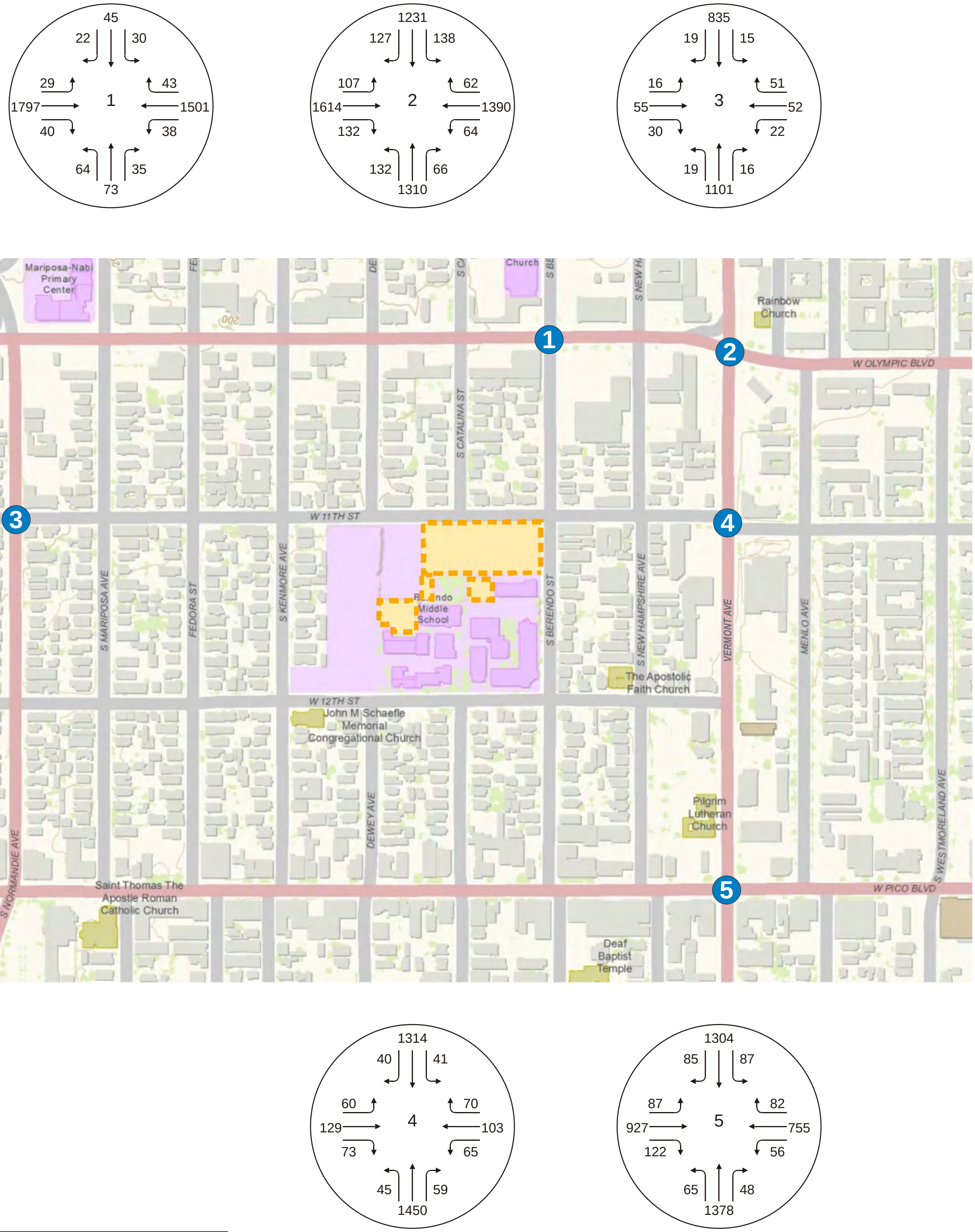
Study Intersections		AM Peak		PM Peak	
		V/C	LOS	V/C	LOS
1	Berendo St & Olympic Blvd	0.445	A	0.537	A
2	Vermont Ave & Olympic Blvd	0.960	**E**	0.964	**E**
3	Normandie Ave & 11th St	0.554	A	0.750	C
4	Vermont Ave & 11th St	0.609	B	0.589	A
5	Vermont Ave & Pico Blvd	0.821	D	0.805	D

LOS = Level of Service

V/C = Volume-to-Capacity Ratio

With the exception of the Vermont Avenue/Olympic Boulevard intersection, the study intersections are projected to continue to operate at good levels of service (LOS D or better) for the analyzed scenario.

The Vermont Avenue/Olympic Boulevard intersection is projected to degrade from LOS D to LOS E in both analyzed peak hours with the addition of ambient growth and trip generation from area projects.



LEGEND

Project Location

Study Intersections

XXX Intersection Turn Volume

N

Not to Scale

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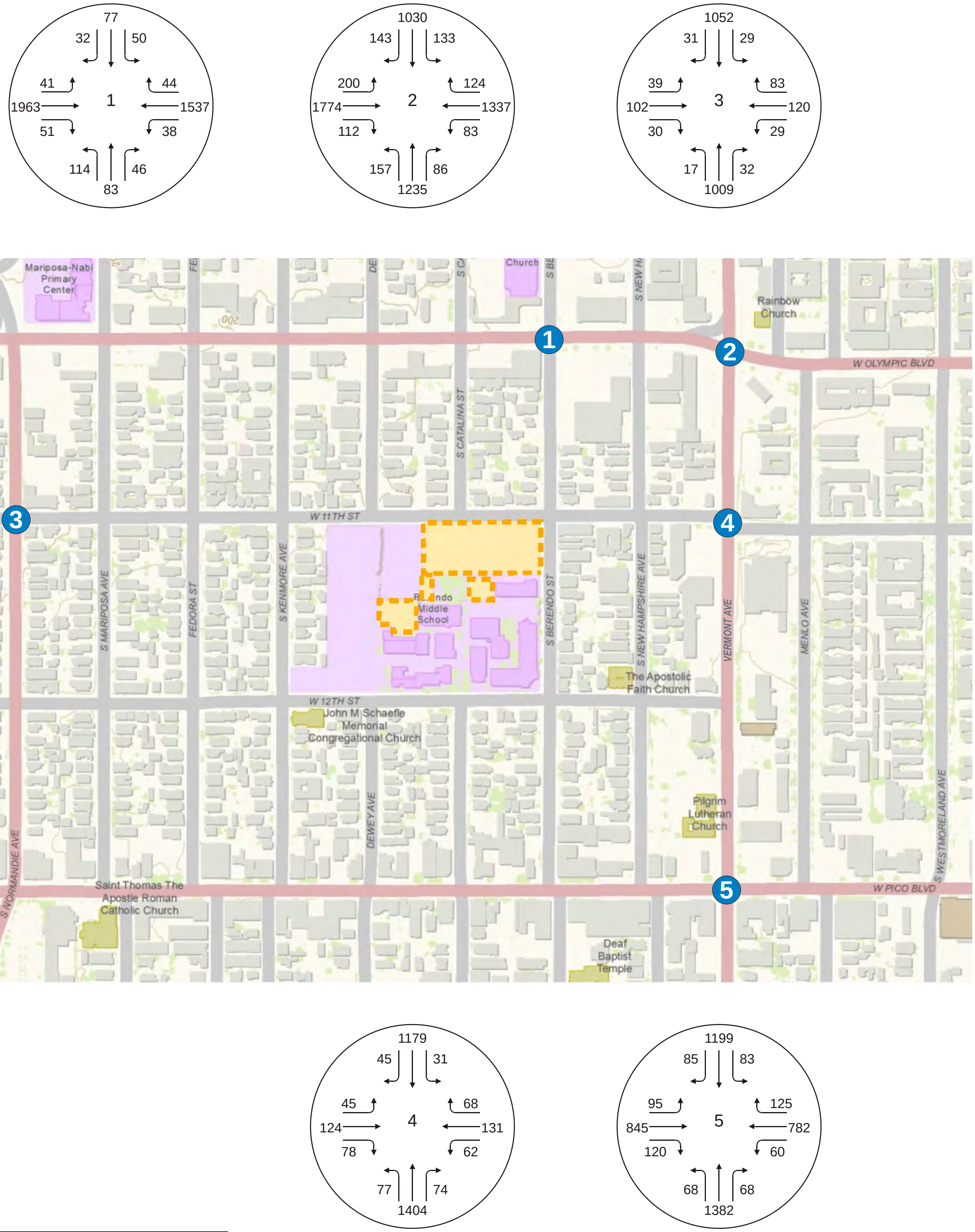
Figure 15

Future (2016) without Project - Weekday AM Peak Hour Turn Volumes



LEGEND

Project Location

Study Intersections

XXX Intersection Turn Volume

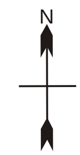


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Figure 16

Future (2016) without Project - Weekday PM Peak Hour Turn Volumes

6. Future 2016 with-Project Conditions

This section documents future traffic conditions at the study intersections with the addition of Project-generated traffic. Traffic volumes for these conditions were derived by adding the net Project trips to the future without-Project volumes.

The future with-Project traffic volumes are illustrated on Figure 17 (a.m. peak hour) and Figure 18 (p.m. peak hour). The LADOT Critical Movement Analysis (CMA) calculation worksheets are provided in Appendix C of this report.

Table 9 summarizes the resulting V/C and LOS values at the study intersections.

Table 9 – Study Intersection Operations –
Future (Year 2016) With Project Conditions

Study Intersections		AM Peak		PM Peak	
		V/C	LOS	V/C	LOS
1	Berendo St & Olympic Blvd	0.449	A	0.539	A
2	Vermont Ave & Olympic Blvd	0.964	**E**	0.965	**E**
3	Normandie Ave & 11th St	0.558	A	0.752	C
4	Vermont Ave & 11th St	0.621	B	0.593	A
5	Vermont Ave & Pico Blvd	0.823	D	0.805	D

LOS = Level of Service

V/C = Volume-to-Capacity Ratio

With the exception of the Vermont Avenue/Olympic Boulevard intersection, the study intersections are projected to continue to operate at good levels of service (LOS D or better) for this scenario.

Determinations of significant traffic impacts created by Project traffic are discussed in the next report section.

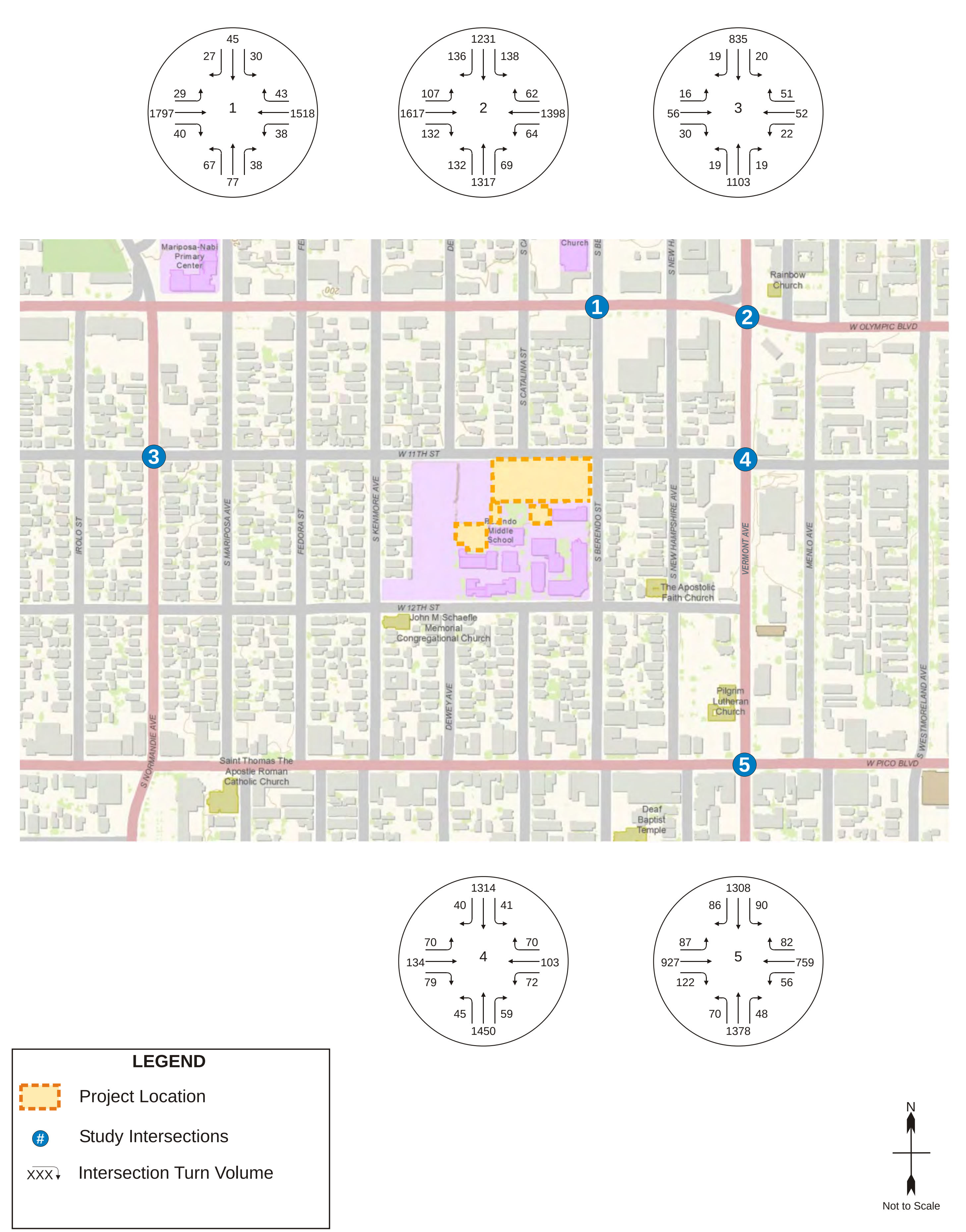

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Figure 17

Future (2016) with Project - Weekday AM Peak Hour Turn Volumes

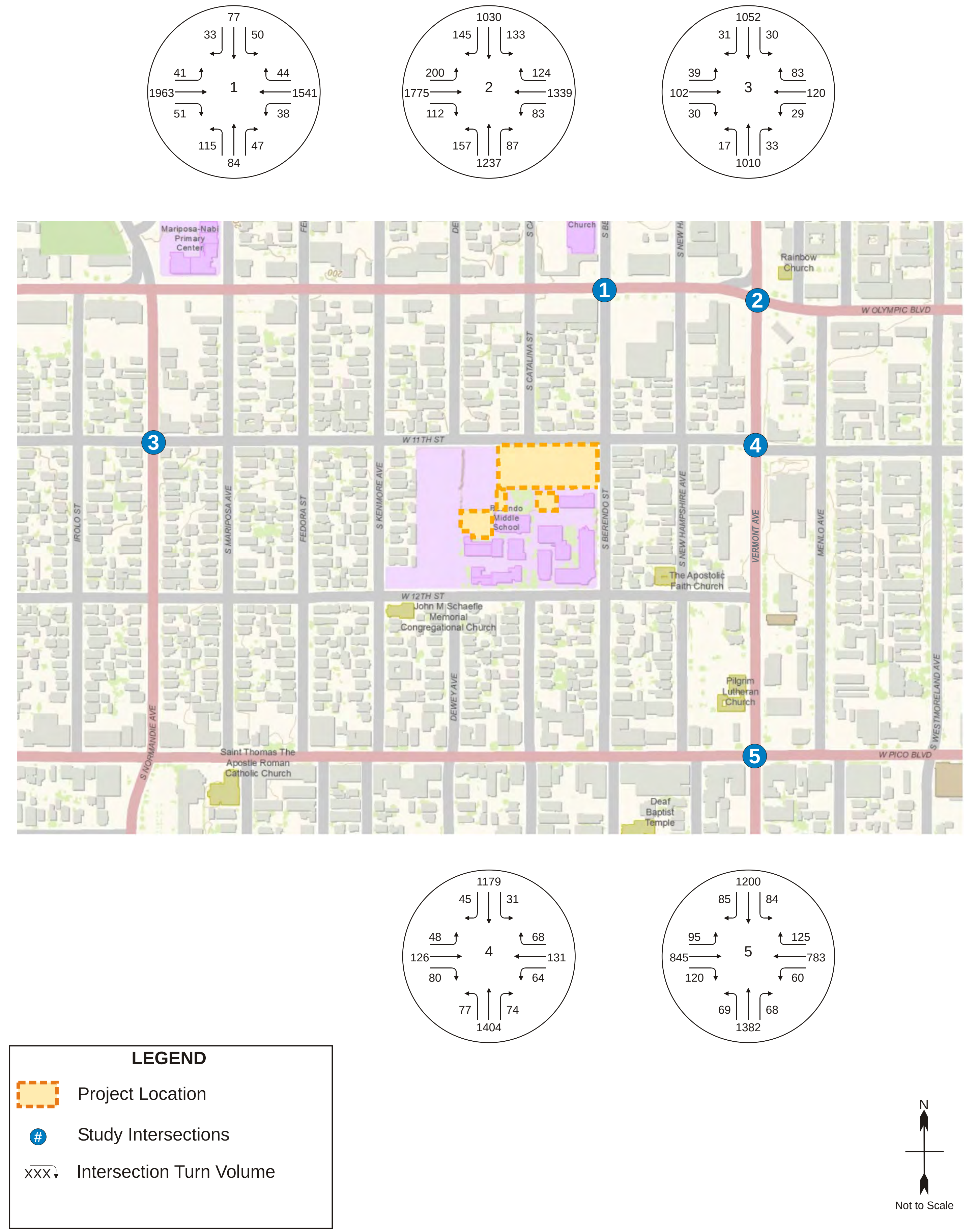

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Figure 18

Future (2016) with Project - Weekday PM Peak Hour Turn Volumes

7. Project Traffic Impacts

7.1 Determination of Traffic Impacts

Traffic impacts are identified if a proposed development will result in a significant change in traffic conditions at a study intersection. A significant impact is typically identified if project-related traffic will cause service levels to deteriorate beyond a threshold limit specified by the overseeing agency. Impacts can also be significant if an intersection is already operating below an acceptable level of service and project related traffic will worsen conditions within the specified threshold range.

The City of Los Angeles Department of Transportation has established specific thresholds for project-related increases in the volume-to-capacity ratio (V/C) of signalized study intersections. The following increases in peak-hour V/C ratios are considered significant impacts:

Level of Service	Final V/C*	Project Related v/c increase
C	< 0.70 – 0.80	Equal to or greater than 0.040
D	< 0.80 – 0.90	Equal to or greater than 0.020
E and F	0.90 or more	Equal to or greater than 0.010

Note: Final V/C is the V/C ratio at an intersection, considering impacts from the project, ambient growth, trips from area/cumulative projects, but without proposed traffic impact mitigations.

7.2 Project Traffic Impacts – Existing With Project Conditions

A summary of the existing and existing with-Project V/C and LOS values is provided by Table 10. Traffic impacts created by the proposed Project are determined by comparing the existing conditions to the existing with-Project conditions.

Table 10 – Assessment of Project Impacts Based on Existing Conditions

Study Intersections		Peak Hour	Existing (2014) Conditions		Existing (2014) + Project		Change in V/C	Sig Impact?
			V/C	LOS	V/C	LOS		
1	Berendo St & Olympic Blvd	AM	0.442	A	0.447	A	0.005	No
		PM	0.507	A	0.508	A	0.001	No
2	Vermont Ave & Olympic Blvd	AM	0.898	D	0.902	**E**	0.004	No
		PM	0.865	D	0.865	D	0.000	No
3	Normandie Ave & 11th St	AM	0.462	A	0.466	A	0.004	No
		PM	0.617	B	0.619	B	0.002	No
4	Vermont Ave & 11th St	AM	0.593	A	0.605	B	0.012	No
		PM	0.544	A	0.548	A	0.004	No
5	Vermont Ave & Pico Blvd	AM	0.782	C	0.784	C	0.002	No
		PM	0.724	C	0.725	C	0.001	No

LOS = Level of Service

V/C = Volume-to-Capacity Ratio

The proposed Project is not anticipated to create significant traffic impacts at any of the study intersections under the analyzed existing traffic conditions.

7.3 Project Traffic Impacts – Future with Project Conditions

Table 11 provides a summary of the future with-Project V/C and LOS values. Traffic impacts created by the Project are determined by comparing the future without-Project conditions to the future with-Project conditions.

Table 11 – Assessment of Project Impacts Based on Future Conditions (Year 2016)

Study Intersections		Peak Hour	Existing (2014) Conditions		Future 2016 No Project		Future 2016 With Project		Change in V/C	Sig Impact?
			V/C	LOS	V/C	LOS	V/C	LOS		
1	Berendo St & Olympic Blvd	AM	0.442	A	0.445	A	0.449	A	0.004	No
		PM	0.507	A	0.537	A	0.539	A	0.002	No
2	Vermont Ave & Olympic Blvd	AM	0.898	D	0.960	**E**	0.964	**E**	0.004	No
		PM	0.865	D	0.964	**E**	0.965	**E**	0.001	No
3	Normandie Ave & 11th St	AM	0.462	A	0.554	A	0.558	A	0.004	No
		PM	0.617	B	0.750	C	0.752	C	0.002	No
4	Vermont Ave & 11th St	AM	0.593	A	0.609	B	0.621	B	0.012	No
		PM	0.544	A	0.589	A	0.593	A	0.004	No
5	Vermont Ave & Pico Blvd	AM	0.782	C	0.821	D	0.823	D	0.002	No
		PM	0.724	C	0.805	D	0.805	D	0.000	No

LOS = Level of Service

V/C = Volume-to-Capacity Ratio

The proposed Project is not anticipated to have a significant traffic impact at any of the study intersections under analyzed future conditions.

7.4 Project Pedestrian Access

The Project driveway for the underground parking structure would be on 11th Street. If the driveway does not have open areas at the approach to 11th Street where sight lines down each sidewalk are provided, it is recommended that parabolic mirrors be installed for better visibility of approaching pedestrians. A warning light system should also be considered, to warn pedestrians of approaching vehicles.

The Dewey Avenue/11th Street and Berendo Street/11th Street intersections are unsignalized, all-way stop control intersections. All-way stop control provides for safe crossing points for pedestrians.

Student pick-up/drop-off area for the proposed school site would be on 11th Street. The proposed charter middle school would have this separate pick-up/drop-off area from the existing public school campus, which would retain a pick-up/drop-off area on Berendo Street.

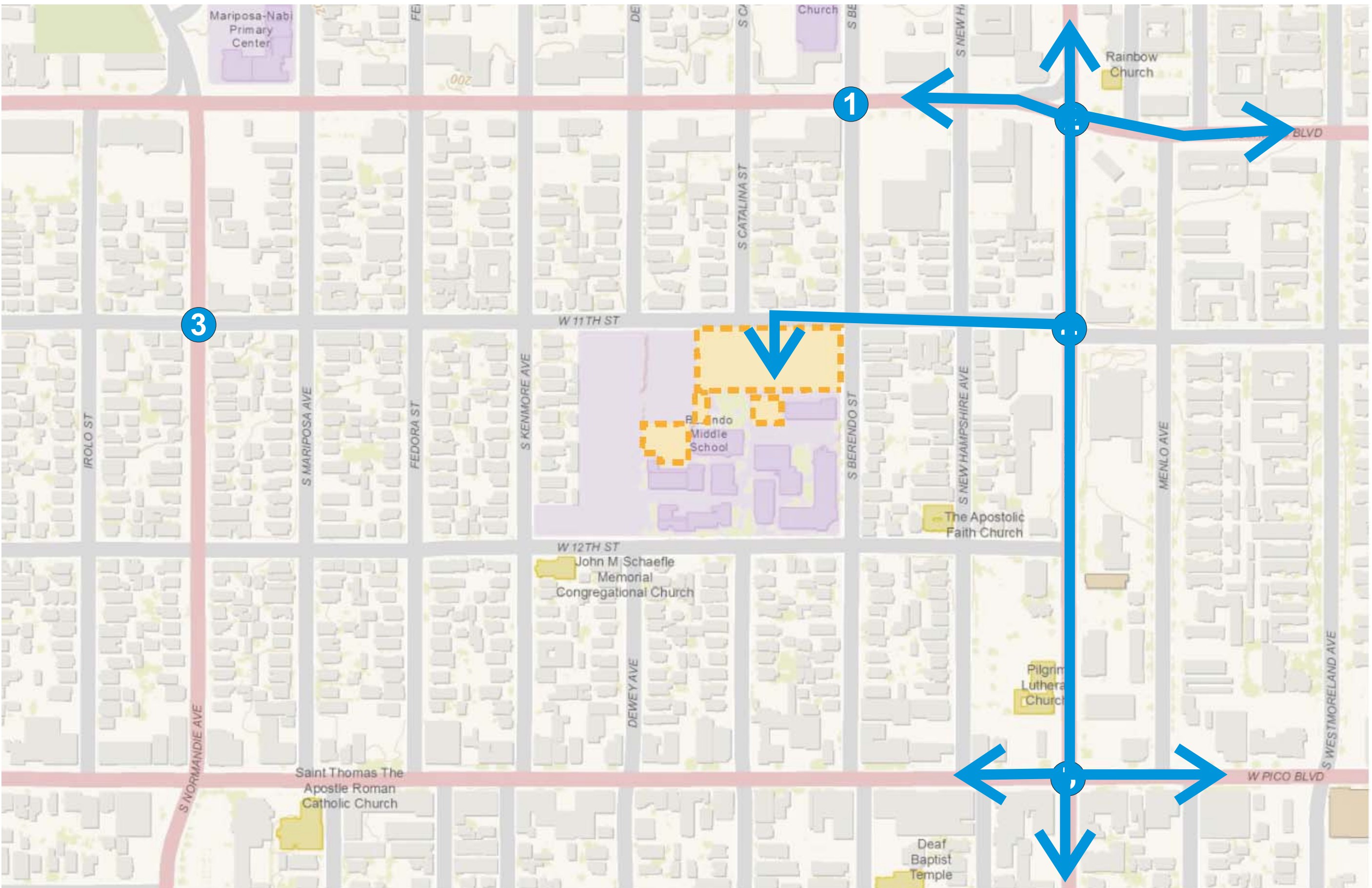
The proposed Project is located at the northeastern portion of the existing Berendo Middle School campus. Therefore, it is suggested that pedestrians utilize the city-generated pedestrian routes for Berendo Middle School, which is provided in Appendix D.

7.5 Project Construction Traffic

During Project construction, trucks for dirt hauling and materials delivery will need to access the site and reach regional truck routes as well. Figure 19 provides recommended truck routing options, which use a signalized intersection (Vermont Avenue/11thStreet) to access the neighborhood and also are based on a minimal distance of travel within the local residential neighborhood.

Between Vermont Avenue and the site access point, trucks will encounter intersections that are not controlled by traffic signals. During the construction period, truck operators should be directed by the construction manager to obey residential area speed limits, either as posted or the prima facie speed limit of 25 mph if not posted.

During times of dirt hauling or equipment deliveries where street loading by construction trucks may be necessary, pedestrian access along the south curb of 11th Street adjacent to the Project site should be closed and pedestrian detour signs that lead pedestrians to the north side of the roadway should be posted at the next intersections in both directions.



LEGEND

Project Location

Study Intersections

XXX Intersection Turn Volume

N

Not to Scale

KOA CORPORATION
PLANNING & ENGINEERING

Monsenor Oscar Romero Charter School (MORCS) Traffic Impact Study

Figure 19

Potential Construction Truck Routes

8. Signal Warrant Analysis

This report section summarizes the traffic signal warrant analysis calculated for the nearby unsignalized intersection of Berendo Street/11th Street. This analysis was performed to determine if requirements would be met for a new traffic signal at the intersection based on future (2016) traffic volumes with the Proposed Project.

KOA compiled new manual intersection vehicle turn movement counts that were conducted at this intersection in December 2013 between the hours of 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. The results of the counts were utilized to determine existing weekday a.m. and p.m. peak-hour conditions for the signal warrant analysis.

8.1 Signal Warrant Criteria

The analysis was based on the Manual on Uniform Traffic Control Devices (MUTCD) published by the Federal Highway Administration and amended for use in California by Caltrans. The installation of a new traffic signal should improve the overall safety and/or operation of an intersection, and should not seriously disrupt progressive traffic flow. The MUTCD states that engineering judgment must be used for final decisions on implementing new signalization, whether or not warrants are met, and this judgment would be applied by the City.

Based on the collected vehicle and pedestrian count data, the intersection was evaluated for traffic warrants for peak-hour conditions and pedestrian crossing. The following signal warrant was analyzed.

- <u>Warrant 3 - Peak Hour Volume</u> – This is to determine that for one hour of the day minor street traffic suffers undue delay in entering or crossing the major street. Part A examines the total volume and vehicle hours of delay on the minor approach. Part B evaluates the peak hour volumes of both approaches of the major street and highest approach of the minor street. Warrant 3 would be met if Part A or Part B is met.

8.2. Signal Warrant Analysis Conclusions

The future conditions volumes were based on traffic growth and trips generated by area project trips, as defined within Section 3 of this report. The result of the signal warrant analysis indicated that warrant 3 (Peak Hour Volume) was not satisfied.

Traffic signal warrants for a new potential traffic signal at this location would not be satisfied under projected post-Project conditions Therefore, it is recommended that this intersection remains unsignalized.

The signal warrant analysis calculations are provided in Appendix E.

9. Congestion Management Plan Conformance

This section demonstrates the ways in which this traffic study was prepared to be in conformance with the procedures mandated by the County of Los Angeles Congestion Management Program (CMP).

The CMP was created statewide by Proposition 111 and was implemented locally by the Los Angeles County Metropolitan Transportation Authority (Metro). The CMP for Los Angeles County requires that the traffic impact of individual development projects of potentially regional significance be analyzed. A specific system of arterial roadways plus all freeways comprises the CMP system. Per CMP Transportation Impact Analysis (TIA) Guidelines, a traffic impact analysis is conducted where:

- At CMP arterial monitoring intersections, including freeway on-ramps or off-ramps, where the proposed project will add 50 or more vehicle trips during either a.m. or p.m. weekday peak hours.

- At CMP mainline freeway-monitoring locations, where the project will add 150 or more trips, in either direction, during the either the a.m. or p.m. weekday peak hours.

The nearest CMP arterial monitoring intersections to the project site are:

- CMP ID #85 – Wilshire Boulevard at Alvarado Street
- CMP ID #89 – Wilshire Boulevard at Western Avenue

The nearest CMP arterial monitoring intersections are located approximately one to two miles northwest and northeast from the project site. Based on the project trip generation and the distance of this location from the project site, it is not expected that 50 or more new trips per hour would be added at these CMP intersections. Therefore, no further analysis of potential CMP impacts is required.

There are no freeway CMP monitoring stations in the project vicinity. Therefore, no further analysis of CMP freeway monitoring stations is required.

10. Analysis Summary and Project Recommendations

10.1 Analysis Summary

The following summarizes the traffic study results and conclusions:

- The proposed Project will provide 450 seats for middle school students (6th to 8th grades) and would be located on the northeastern portion of the existing Berendo Middle School. The Project currently enrolls 300 students in facilities within the existing campus. The Project, therefore, will allow for an increase in enrollment within the MORCS program by 150 student seats.

- The project study area included five signalized intersections. Traffic counts were collected in December 2013 and existing conditions were considered to be the year 2014. The future analysis year was 2016, matching the planned opening date of the Project.

- For analysis of pre-project conditions, an ambient growth rate was applied, along with the trip generation from 37 area projects.

- The proposed new middle school facility is projected to generate approximately 243 weekday daily trips, including 81 trips during the a.m. peak hour and 24 trips during the p.m. peak hour.

- Under existing 2014 conditions, four of the five study intersections are operating at LOS C or better during the a.m. and p.m. peak hours. One intersection is operating at LOS D during the a.m. and p.m. peak hours.

- Under future without and with project conditions, all but one of the study intersections would operate at LOS D or better. Operations at one intersection would worsen within LOS E.

- Based on the City of Los Angeles significant traffic impact criteria, the proposed project would not result in significant traffic impacts at any of the analyzed study intersections, for either the analyzed existing with-Project conditions or future with-Project conditions.

- The proposed project is not anticipated to cause a significant traffic impact at any CMP arterial monitoring intersections and mainline freeway-monitoring locations.

- Pedestrian routes to and from campus should be encouraged by the school to be taken via 11th Street or 12th Street, and at locations with traffic signals, all-way stop control, or marked crosswalks, as shown in the Pedestrian Routes Map produced by the City.

- The analyzed peak-hour warrant for a new traffic signal at the Berendo Street/11th Street intersection was not satisfied. Therefore, it is recommended that this intersection remains unsignalized.

10.2 Vehicle and Pedestrian Access Circulation Plan

The following text provides a summary of vehicle circulation and pedestrian to the proposed site.

Vehicle Circulation

The proposed school entrance and student pick-up/drop-off area would be located on 11th Street. The existing school pick-up/drop-off area for the existing Berendo middle school facility is on Berendo Street and would remain.

On-street parking is currently permitted along the southern curb of 11th Street. The distance from the western end of the project site to Berendo Street is approximately 250 feet, which is equivalent to 13 vehicles. It is recommended to that on-street parking be restricted in this area for pick-up/drop-off operations during appropriate time periods, through the use of regulatory signage.

The following was concluded from a queuing analysis conducted for the proposed Project pick-up/drop-off area:

- The total peak inbound trip demand during the morning peak hour will be 134 vehicles, for the entire 450-student charter school operation after expansion.

- Assuming a 25-second average unloading time per vehicle, the service rate of the pick-up/drop-off area would be (60 minutes x 60 seconds or 3600)/25 seconds), equaling 144 vehicles/hour.

- A queuing analysis of this data indicated that a probable queue would be slightly more than 13 vehicles. A faster loading time for some vehicles would lower this total queue.

The expected average queue, based on project volumes, is expected to not exceed the pick-up/drop-off area storage length under normal and typical conditions. A depiction of the calculated along the frontage of the Project site is provided in Attachment F.

Pedestrian Access

The Dewey Avenue/11th Street and Berendo Street/11th Street intersections are unsignalized, all-way stop control intersections. All-way stop control provides for safe crossing points for pedestrians.

The unsignalized intersection of Catalina Street/11th Street is adjacent to the project driveway. It is recommended that parabolic mirrors be installed for better visibility of approaching pedestrians. A warning light system should also be considered.

Peak access times to the underground parking structure by staff vehicles will occur before student drop-off times and after pick-up times, due to typical staff schedules. Therefore, conflicts are not anticipated between access to the garage and student drop-off/pick-up activity.

A marked crosswalk at Catalina Street is not necessary, as the nearby crosswalk location at the Berendo Street intersection is less than 300 feet from campus site access points.

Project Construction Traffic

During Project construction, trucks for dirt hauling and materials delivery will need to access the site and reach regional truck routes as well. Recommended truck routing options have been provided in this document that use a signalized intersection to access the neighborhood and also are based on a minimal distance of travel within the local residential neighborhood.

Between Vermont Avenue and the site access point, trucks will encounter intersections that are not controlled by traffic signals. During the construction period, truck operators should be directed by the construction manager to obey residential area speed limits, either as posted or the prima facie speed limit of 25 mph if not posted.

During times of dirt hauling or equipment deliveries where street loading by construction trucks may be necessary, pedestrian access along the south curb of 11th Street adjacent to the Project site should be closed and pedestrian detour signs that lead pedestrians to the north side of the roadway should be posted at the next intersections in both directions.

Project Memorandum of Understanding with LADOT

SCOPING FOR TRAFFIC STUDY
MORCS Charter School – 2670 West 11th Street
April 14, 2014

This Memorandum of Understanding (MOU) acknowledges Los Angeles Department of Transportation (LADOT) requirements of traffic impact analysis for the following project:

DOT Case No. ________________
Project Name: Monsenor Oscar Romero Charter School (MORCS)
Project Address: 2670 West 11th Street *(formerly identified as 1157 South Berendo Street)*

Project Description and Analysis:

The project site is located on the northeastern portion of the existing Berendo Middle School. The proposed development consists of construction of a new two-story, 32,000 square-foot school building with classrooms, administration offices, a multipurpose room, and a lunch shelter. The project will also include a playfield, staff/visitor underground parking garage, and a student pick-up/drop-off area. Once completed, the MORCS will enroll approximately 450 students in 6th to 8th grades.

Berendo Middle School currently enrolls about 1,200 students in 6th to 8th grades on a single track schedule. In addition, MORCS has used space on the campus for the 2011 and 2012 school years, and approximately 300 students in 6th to 8th grades are currently accommodated in temporary facilities.

The project, therefore, will allow for an increase in enrollment within the MORCS program by 150 student seats. The planned opening year is 2016.

The proposed MORCS project encompasses four areas of the existing middle school campus, identified as Areas A through D and cumulatively referred to as the "Site." The four areas total approximately 2.36 acres in size and are bordered by South Berendo Street to the east, West 11th Street to the north, and Berendo Middle School to the west and south.

A site plan is provided in Attachment A. The school entrance and proposed pick-up/drop-off area for the MORCS facility would be located on 11th Street. The existing school pick-up/drop-off area for the Berendo MS facility is on Berendo Street and would remain.

The overall circulation effects of the school traffic operations including staff/faculty and delivery/trash vehicle access and loading/pick-up and drop-off zones would be examined in a circulation analysis. Potential queuing issues and conflicts between different site traffic flows and adjacent roadway traffic flows would be examined. Pedestrian access to and from the project site will be evaluated for sidewalk conditions, safe crossing locations, and other safety issues.

Geographic Distribution: North – 40%, South – 15%, East – 40%, West – 5%,
(The distribution was based on the zip code data for existing students)

Trip Generation Rate(s): (Source): Public school rates defined by *Trip Generation (9th Edition)*

Proposed Land Use New charter middle school facility, with increase in available seats from 300 to 450.

Existing Land Use Leased facility with current enrollment of 450 students . Credits are not applied in the trip generation analysis, as the base level of students would remain.

SCOPING FOR TRAFFIC STUDY
MORCS Charter School – 2670 West 11th Street
April 14, 2014

Project Trips:

The trip generation summary below is based on public middle school rates. The local-serving nature of this facility was verified by ZIP code distribution of students at the nearby existing school. A majority of the students were determined to be within 1.5 miles from the site. Attachment C illustrates the student distribution. Approximately 62 percent of the students live within 1.5 miles of the site with a large number of students located just to the northeast near the 1.5 mile radius.

Land Use	Intensity	Units	Daily Total	AM Peak			PM Peak		
				Total	In	Out	Total	In	Out
Trip Generation Rates									
Middle School	-	students	1.62	0.54	55%	45%	0.16	49%	51%
Trip Generation Estimates									
Middle School	150	students	243	81	45	36	24	12	12
		Subtotal	243	81	45	36	24	12	12
Net Total			**243**	**81**	**45**	**36**	**24**	**12**	**12**

Trip generation rates source: ITE Trip Generation (9th Edition)

Project Buildout Year(s): 2016 **Ambient or CMP Growth Rate:** 1%

Area/Related Projects: Project list to be obtained from LADOT.

Subject to Freeway Impact Analysis Screening review: No

Distribution to nearest I-110 freeway interchange was analyzed (as 40% of traffic would potentially be to/from the east), and was assumed to be 10 percent, with the potential for multiple routes to be taken and many living closer to the school site that would not use the freeway.

In the higher peak (a.m.), this would equate to five inbound trips and four outbound trips. This would not likely trigger the screening thresholds for freeway analysis defined by Caltrans.

Study intersections: Locations illustrated on Attachment B figure and listed below.
(Subject to revision after CMP requirement, related projects, trip generation and distribution are determined)

1. Berendo St. & Olympic Blvd.
2. Vermont Ave. & Olympic Blvd.
3. Normandie Ave. & 11st St.
4. Vermont Ave. & 11st St.
5. Vermont Ave. & Pico Blvd.

Traffic Signal Warrant Analysis: In addition to the level of service analysis for the five study intersections, a peak-hour traffic signal warrant analysis would be conducted for the intersection of Berendo Street & 11th Street.

Standards of the California Edition of the Manual of Uniform Traffic Control Devices would be applied to the peak-hour warrant category, based on standard peak-period vehicle turning movement volumes. Pedestrian crossing and school crossing warrants would not be examined, as the intersection is currently all-way stop controlled and provides a pedestrian crossing point.

Study Residential Streets: None

Bordering streets are Local/residential streets - West 11th Street and South Berendo Street, but for school studies, these types of roadways are usually excluded due to the need for pick-up/drop-off routes.

Trip Credits: (Exact amount of credit subject to approval by LADOT)

Transportation Demand Management (TDM)	~~yes~~	**no**
Existing Active Land Use	~~yes~~	**no**
Previous Land Use	~~yes~~	**no**
Internal Trip	~~yes~~	**no**
Pass-By Trip	~~yes~~	**no**

This analysis must follow all current established LADOT traffic study guidelines that are applicable to this project.

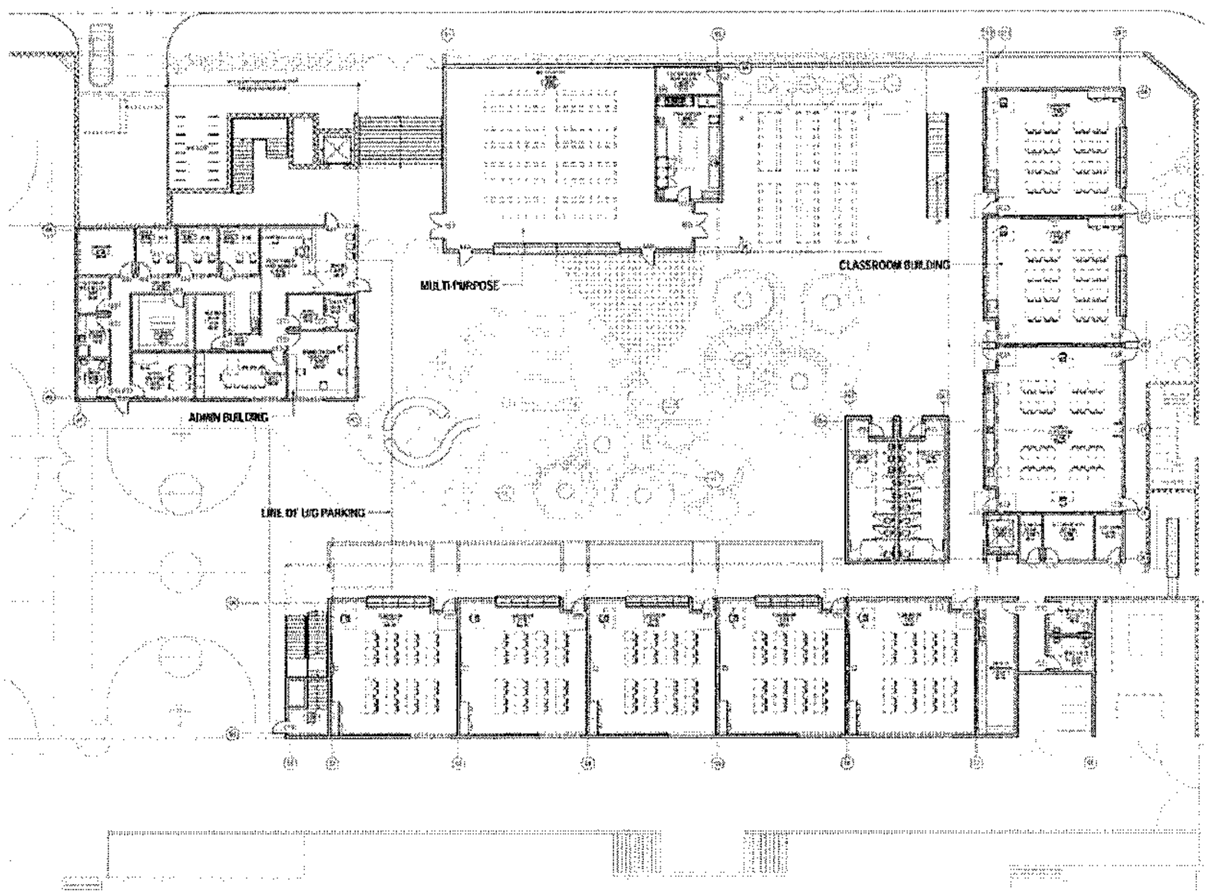
	Consultant:	**Applicant:**
Name	KOA Corporation	YPI Charter Schools, Inc. c/o Pacific Charter School Development
Address	1100 Corporate Center Dr., Suite 201 Monterey Park, CA 91754	811 West 7th Street, Suite 310 Los Angeles, CA 90017
Contact:	Brian Marchetti, (323) 260-4703	in care of Hope Fang, (213) 542-4715

Approved by:

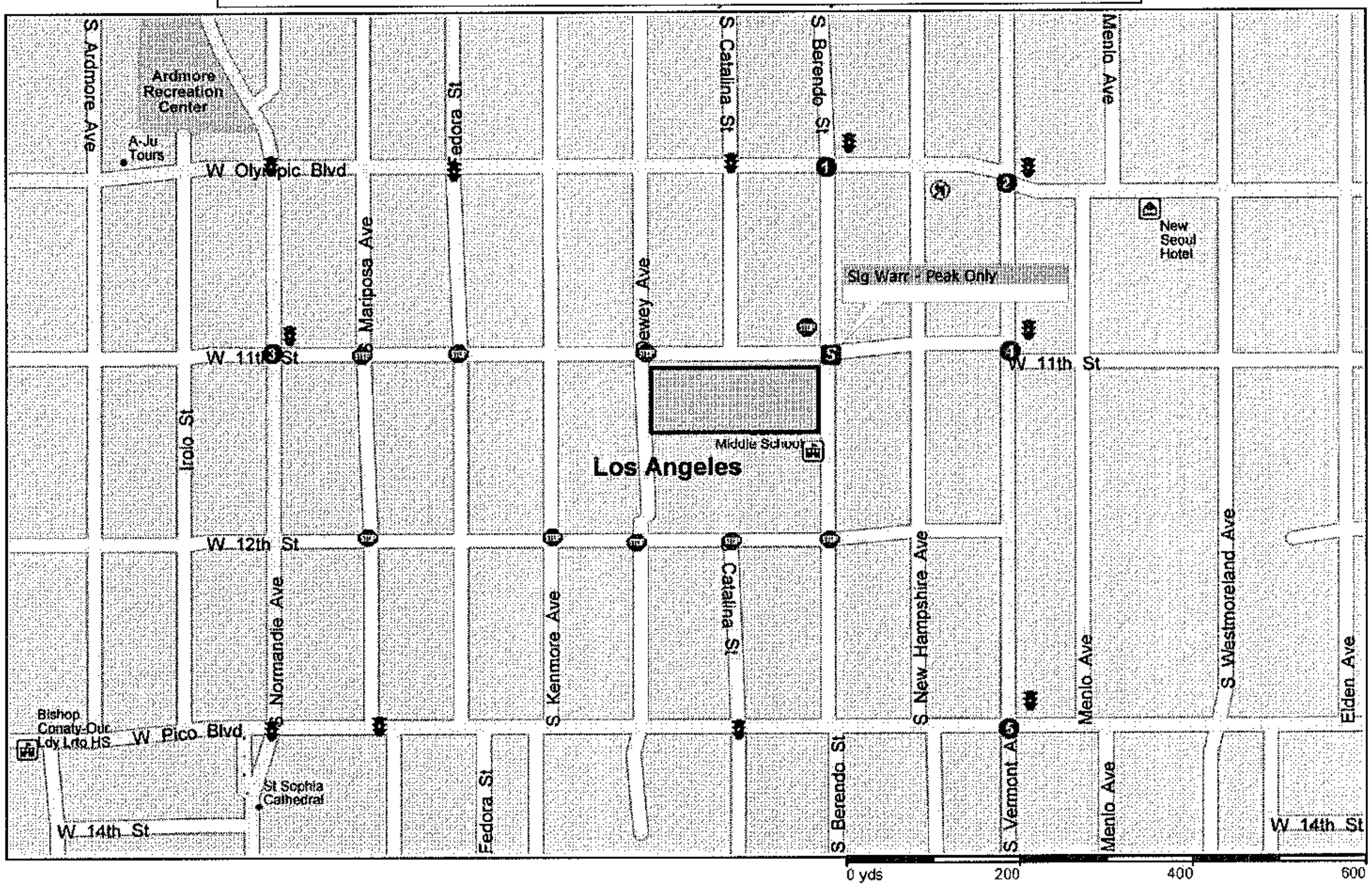
4/15/14
Consultant's Representative Date

4-17-14
LADOT's Representative Date

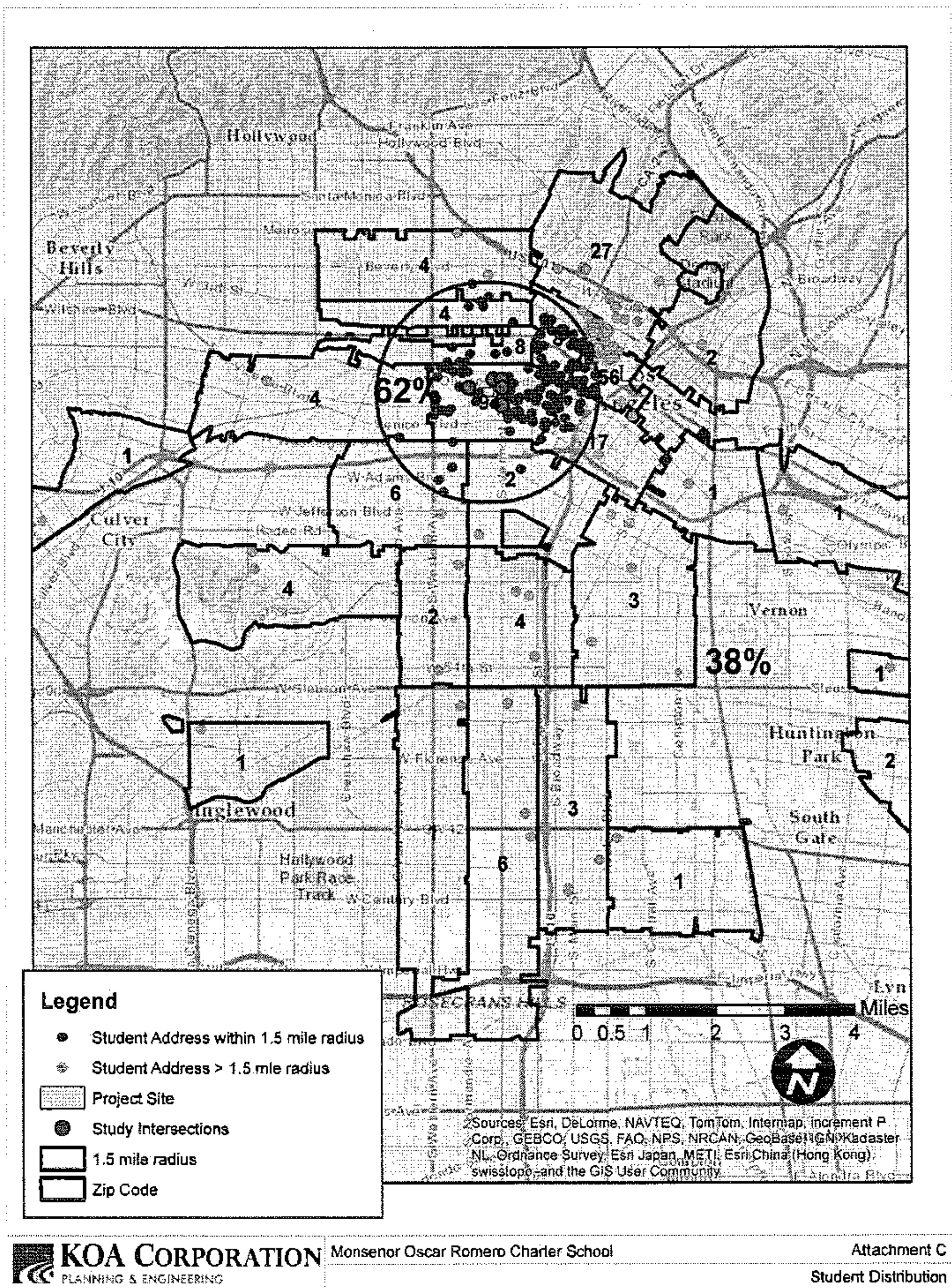
ATTACHMENT A
PROJECT SITE DIAGRAM



ATTACHMENT B
PROJECT STUDY AREA



ATTACHMENT C - EXISTING STUDENT TRIP DISTRIBUTION



APPENDIX B
Traffic Counts Data

JB31104 BERENDO STREET - CHARTER SCHOOL

TOTAL AM PEAK HOUR with Factor

2014	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
1	63	72	34	25	44	20	24	1673	39	37	1379	29	3439
2	108	1210	65	116	1081	85	82	1533	108	63	1319	49	5819
3	19	975	16	15	653	19	16	54	29	22	51	50	1919
4	44	1325	58	40	1141	39	59	126	72	64	101	69	3138
5	64	1272	47	72	1157	71	77	862	120	55	701	71	4569

TOTAL PM PEAK HOUR with Factor

2014	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
1	112	81	45	44	75	29	39	1724	50	37	1395	41	3672
2	125	1053	84	115	920	116	157	1596	87	81	1249	94	5677
3	17	771	31	28	894	30	38	100	29	28	118	81	2165
4	75	1190	73	30	1043	44	44	122	76	61	128	67	2953
5	67	1201	67	71	1082	75	79	686	118	59	709	104	4318

CARS - AM PEAK HOUR

2013	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
1	58	64	34	25	44	17	24	1630	31	34	1317	29	3307
2	105	1126	48	112	1004	75	74	1490	102	59	1250	46	5491
3	19	947	16	12	634	19	16	51	29	22	38	50	1853
4	39	1221	53	40	1073	39	53	123	72	60	99	66	2938
5	57	1193	45	72	1077	71	77	832	117	45	664	63	4313

CARS - PM PEAK HOUR

2013	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
1	112	81	45	44	75	29	39	1643	50	37	1363	41	3559
2	125	1007	82	111	874	113	150	1532	84	78	1220	92	5468
3	17	754	31	28	866	30	35	100	29	28	118	81	2117
4	75	1142	70	27	993	44	44	118	73	59	128	67	2840
5	67	1160	67	71	1039	72	79	663	115	56	686	101	4176

BUS - AM PEAK HOUR

2013	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
1	0	0	0	0	0	0	0	15	0	2	16	0	33
2	0	19	1	1	23	0	2	12	4	1	26	0	89
3	0	5	0	0	9	0	0	0	0	0	0	0	14
4	0	24	0	0	27	0	2	2	0	1	1	0	57
5	1	19	1	0	30	0	0	13	0	3	11	0	78

BUS - PM PEAK HOUR

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
1	0	0	0	0	0	0	0	17	0	0	11	0	28
2	0	19	1	1	17	0	3	16	0	0	9	1	67
3	0	6	0	0	7	0	0	0	0	0	0	0	13
4	0	20	0	0	18	0	0	1	0	1	0	0	40
5	0	19	0	0	20	0	0	10	0	0	10	0	59

TRUCKS - AM PEAK HOUR

2013	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
1	2	3	0	0	0	1	0	8	3	0	15	0	32
2	1	22	6	1	17	4	2	10	0	1	12	1	77
3	0	8	0	1	2	0	0	1	0	0	5	0	17
4	2	27	2	0	11	0	1	0	0	1	0	1	45
5	2	20	0	0	14	0	0	4	1	2	8	3	54

TRUCKS - PM PEAK HOUR

2013	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
1	0	0	0	0	0	0	0	22	0	0	6	0	28
2	0	7	0	1	8	1	1	16	1	1	6	0	42
3	0	3	0	0	7	0	1	0	0	0	0	0	11
4	0	7	1	1	9	0	0	1	1	0	0	0	20
5	0	5	0	0	5	1	0	3	1	1	3	1	20

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Berendo St

East/West Olympic Blvd

Day: Wednesday Date: December 11, 2013 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	14	10	91	98
BIKES	19	5	58	46
BUSES	0	0	120	87

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	53	7.45	39	7.45	454	8.30	427	7.30
PM PK 15 MIN	69	15.15	39	17.00	474	17.45	395	17.00
AM PK HOUR	186	7.30	111	7.15	1711	8.00	1609	7.00
PM PK HOUR	243	15.00	148	17.00	1771	17.00	1458	17.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	48	46	50	144
8-9	60	67	34	161
9-10	51	58	18	127
15-16	115	65	63	243
16-17	112	62	59	233
17-18	112	81	45	238
TOTAL	498	379	269	1146

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	27	43	22	92
8-9	25	44	18	87
9-10	18	52	28	98
15-16	42	48	27	117
16-17	38	53	33	124
17-18	44	75	29	148
TOTAL	194	315	157	666

Hours	**TOTAL** N-S	**XING S/L** Ped	Sch	**XING N/L** Ped	Sch
7-8	236	42	0	34	0
8-9	248	45	0	33	0
9-10	225	36	0	28	0
15-16	360	67	2	32	0
16-17	357	73	2	37	0
17-18	386	66	1	35	0
TOTAL	1812	329	5	199	0

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	11	1227	29	1267
8-9	24	1653	34	1711
9-10	25	1312	45	1382
15-16	38	1525	71	1634
16-17	42	1538	69	1649
17-18	39	1682	50	1771
TOTAL	179	8937	298	9414

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	64	1532	13	1609
8-9	36	1348	29	1413
9-10	19	1442	23	1484
15-16	41	1161	40	1242
16-17	41	1214	34	1289
17-18	37	1380	41	1458
TOTAL	238	8077	180	8495

Hours	**TOTAL** E-W	**XING W/L** Ped	Sch	**XING E/L** Ped	Sch
7-8	2876	24	0	19	0
8-9	3124	10	0	14	0
9-10	2866	15	0	20	0
15-16	2876	19	2	19	0
16-17	2938	21	1	35	1
17-18	3229	19	0	27	1
TOTAL	17909	108	3	134	2

N/L

Sch
0
0
0
0
0
0

0

E/L

Sch
0
0
0
0
1
1

2

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Berendo St and Olympic Blvd , Los Angeles

Date:	12/11/2013
Day:	Wednesday
Project #:	13-5664-001
City:	Los Angeles

N

AM Peak Hour	800 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Total Peak Hour Summary

CONTROL: Signalized

Southbound Approach (Berendo St)

	Lanes 0	Lanes 1	Lanes 0	Out
AM	18	44	25	120
NOON	0	0	0	0
PM	29	75	44	161

Eastbound Approach (Olympic Blvd)

	AM	NOON	PM
Out	1426	0	1521

Lanes	AM	NOON	PM
1	24	0	39
3	1653	0	1682
0	34	0	50

Westbound Approach

	AM	NOON	PM	Lanes
	29	0	41	0
	1348	0	1380	3
	36	0	37	1

	AM	NOON	PM
In	1712	0	1771

Northbound Approach

	Out			
AM	114	60	67	34
NOON	0	0	0	0
PM	162	112	81	45
Lanes		0	1	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	87	120
North Leg	NOON	0	0
North Leg	PM	148	161
West Leg	AM	1426	1711
West Leg	NOON	0	0
West Leg	PM	1521	1771
East Leg	AM	1413	1712
East Leg	NOON	0	0
East Leg	PM	1458	1771
South Leg	AM	114	161
South Leg	NOON	0	0
South Leg	PM	162	238

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	207	0	309
West Leg	3137	0	3292
East Leg	3125	0	3229
South Leg	275	0	400

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-001 | Day: Wednesday

TOTALS

City: Los Angeles | Date: 12/11/2013

AM

NS/EW Streets:	Berendo St			Berendo St			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
7:00 AM	3	8	7	0	5	4	1	229	4	16	388	4	669
7:15 AM	15	7	10	6	6	10	3	267	9	10	397	1	741
7:30 AM	13	15	13	13	6	3	3	354	6	20	401	6	853
7:45 AM	17	16	20	8	26	5	4	377	10	18	346	2	849
8:00 AM	15	18	18	9	16	3	2	392	7	14	324	3	821
8:15 AM	19	16	6	2	10	4	5	413	10	12	313	8	818
8:30 AM	13	9	7	6	7	5	9	439	6	7	344	8	860
8:45 AM	13	24	3	8	11	6	8	409	11	3	367	10	873
9:00 AM	18	19	6	7	12	9	7	363	13	5	348	6	813
9:15 AM	12	15	4	6	17	9	9	343	12	6	360	9	802
9:30 AM	11	13	5	3	13	5	6	318	9	5	379	7	774
9:45 AM	10	11	3	2	10	5	3	288	11	3	355	1	702

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	159	171	102	70	139	68	60	4192	108	119	4322	65	9575
APPROACH %'s :	36.81%	39.58%	23.61%	25.27%	50.18%	24.55%	1.38%	96.15%	2.48%	2.64%	95.92%	1.44%	

PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	60	67	34	25	44	18	24	1653	34	36	1348	29	3372
PEAK HR FACTOR :		0.789			0.777			0.942			0.930		0.966

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-001

TOTALS

City: Los Angeles

Day: Wednesday

Date: 12/11/2013

PM

NS/EW Streets:	Berendo St			Berendo St			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
3:00 PM	30	14	20	14	7	10	9	366	10	10	267	6	763
3:15 PM	30	19	20	10	14	2	11	380	23	15	318	9	851
3:30 PM	23	15	10	5	9	9	6	385	16	9	278	13	778
3:45 PM	32	17	13	13	18	6	12	394	22	7	298	12	844
4:00 PM	29	12	17	11	10	11	10	368	12	13	263	8	764
4:15 PM	32	18	17	11	15	5	13	386	21	9	335	13	875
4:30 PM	21	17	11	6	12	8	9	412	19	9	314	7	845
4:45 PM	30	15	14	10	16	9	10	372	17	10	302	6	811
5:00 PM	28	14	17	12	18	9	8	390	11	8	380	7	902
5:15 PM	35	17	11	14	18	5	13	423	13	5	330	11	895
5:30 PM	24	17	11	13	16	6	8	416	15	11	356	14	907
5:45 PM	25	33	6	5	23	9	10	453	11	13	314	9	911

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	339	208	167	124	176	89	119	4745	190	119	3755	115	10146
APPROACH %'s :	47.48%	29.13%	23.39%	31.88%	45.24%	22.88%	2.35%	93.89%	3.76%	2.98%	94.13%	2.88%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	112	81	45	44	75	29	39	1682	50	37	1380	41	3615
PEAK HR FACTOR :	0.930			0.949			0.934			0.923			0.992

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-001 | Day: Wednesday

CARS

City: Los Angeles | Date: 12/11/2013

AM

NS/EW Streets:	Berendo St			Berendo St			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
7:00 AM	3	7	7	0	5	4	1	223	4	15	373	3	645
7:15 AM	15	7	10	6	6	9	3	260	7	10	389	1	723
7:30 AM	13	15	13	13	6	3	3	347	5	19	392	6	835
7:45 AM	15	16	20	8	26	5	4	367	9	18	332	2	822
8:00 AM	14	17	18	9	16	3	2	384	7	14	316	3	803
8:15 AM	19	16	6	2	10	3	5	410	10	10	304	8	803
8:30 AM	13	8	7	6	7	5	9	431	4	7	337	8	842
8:45 AM	12	23	3	8	11	6	8	405	10	3	360	10	859
9:00 AM	18	18	6	7	10	9	7	356	13	5	338	6	793
9:15 AM	12	15	4	6	17	9	9	334	11	6	349	9	781
9:30 AM	10	13	4	3	12	5	6	309	7	5	366	7	747
9:45 AM	10	11	3	2	8	4	3	284	11	3	346	1	686

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	154	166	101	70	134	65	60	4110	98	115	4202	64	9339
APPROACH %'s :	36.58%	39.43%	23.99%	26.02%	49.81%	24.16%	1.41%	96.30%	2.30%	2.62%	95.91%	1.46%	

PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	58	64	34	25	44	17	24	1630	31	34	1317	29	3307
PEAK HR FACTOR :		0.796			0.768			0.949			0.925		0.962

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-001 | Day: Wednesday

CARS

City: Los Angeles | Date: 12/11/2013

PM

NS/EW Streets:	Berendo St			Berendo St			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
3:00 PM	29	14	20	14	7	10	9	360	10	10	262	6	751
3:15 PM	30	19	20	10	14	2	11	369	23	15	311	9	833
3:30 PM	23	15	10	5	9	9	6	372	16	9	275	13	762
3:45 PM	32	17	13	12	18	6	12	382	21	5	292	12	822
4:00 PM	28	12	17	11	10	11	10	356	11	11	260	8	745
4:15 PM	32	18	17	10	15	5	13	378	21	9	330	12	860
4:30 PM	21	17	11	6	12	8	9	407	19	8	310	7	835
4:45 PM	29	15	14	10	16	9	9	362	17	9	299	6	795
5:00 PM	28	14	17	12	18	9	8	379	11	8	374	7	885
5:15 PM	35	17	11	14	18	5	13	420	13	5	325	11	887
5:30 PM	24	17	11	13	16	6	8	405	15	11	353	14	893
5:45 PM	25	33	6	5	23	9	10	439	11	13	311	9	894

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	336	208	167	122	176	89	118	4629	188	113	3702	114	9962
APPROACH %'s :	47.26%	29.25%	23.49%	31.52%	45.48%	23.00%	2.39%	93.80%	3.81%	2.88%	94.22%	2.90%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	112	81	45	44	75	29	39	1643	50	37	1363	41	3559
PEAK HR FACTOR :		0.930			0.949			0.941			0.926		0.995

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5664-001
N/S Street: Berendo St
E/W Street: Olympic Blvd
DATE: 12/11/2013 DAY: Wednesday
CITY: Los Angeles

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	5	3	8	2	1	6	1	1
7:15 AM	2	5	6	6	0	1	2	0
7:30 AM	1	5	3	4	6	3	4	5
7:45 AM	5	8	9	4	2	0	4	7
8:00 AM	6	6	16	6	1	0	2	4
8:15 AM	3	4	1	2	0	2	2	0
8:30 AM	2	4	7	0	0	4	0	1
8:45 AM	4	4	7	6	3	4	0	1
9:00 AM	4	5	6	9	2	1	3	7
9:15 AM	2	2	3	1	0	3	0	0
9:30 AM	3	1	5	1	1	3	0	2
9:45 AM	5	6	9	2	4	6	1	2
TOTALS	42	53	80	43	20	33	19	30

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	0	0	0	0

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	6	6	6	14	3	1	3	2
3:15 PM	2	3	15	8	3	1	1	1
3:30 PM	1	4	2	7	4	1	8	0
3:45 PM	3	7	7	8	5	1	4	0
4:00 PM	5	2	15	14	2	4	8	2
4:15 PM	4	8	8	7	4	2	2	2
4:30 PM	5	2	6	7	4	4	2	1
4:45 PM	6	5	9	7	6	9	2	2
5:00 PM	2	5	5	8	8	1	4	2
5:15 PM	7	2	11	6	1	5	1	0
5:30 PM	4	4	8	6	1	0	3	1
5:45 PM	5	6	15	7	7	4	2	6
TOTALS	50	54	107	99	48	33	40	19

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	2	0	0	2	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	1	0	0	1	0	0
4:30 PM	0	0	0	0	0	0	1	0
4:45 PM	0	0	1	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	1	0	0	1	0	0
TOTALS	0	0	3	2	0	2	3	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-001 | Day: Wednesday

BIKES

City: Los Angeles | Date: 12/11/2013

AM

NS/EW Streets:	Berendo St			Berendo St			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
7:00 AM	0	0	0	1	0		0	0	0	0	1	1	3
7:15 AM	0	1	0	0	0		0	1	0	0	4	0	6
7:30 AM	0	0	0	0	0		0	4	0	0	2	0	6
7:45 AM	0	0	0	0	0		0	1	0	0	3	0	4
8:00 AM	0	0	0	0	0		0	1	0	0	3	0	4
8:15 AM	1	0	0	0	0		0	2	0	0	1	0	4
8:30 AM	0	1	0	0	1		0	0	0	0	2	0	4
8:45 AM	0	0	0	0	0		0	2	0	0	1	0	3
9:00 AM	0	0	0	0	0		0	0	0	0	1	0	1
9:15 AM	0	1	0	0	1		0	1	0	0	0	0	3
9:30 AM	0	0	1	0	0		0	2	0	0	0	0	3
9:45 AM	0	0	1	0	0		1	0	1	1	0	1	5

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	3	2	1	2	0	1	14	1	1	18	2	46
APPROACH %'s :	16.67%	50.00%	33.33%	33.33%	66.67%	0.00%	6.25%	87.50%	6.25%	4.76%	85.71%	9.52%	

PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	1	1	0	0	1	0	0	5	0	0	7	0	15
PEAK HR FACTOR :	0.500			0.250			0.625			0.583			0.938

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-001

Day: Wednesday

BIKES

City: Los Angeles

Date: 12/11/2013

PM

NS/EW Streets:	Berendo St			Berendo St			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
3:00 PM	1	0	0		1		0	5	1	0	0	0	8
3:15 PM	1	1	0		0		1	2	1	0	0	0	6
3:30 PM	0	0	1		1		0	6	0	0	2	1	11
3:45 PM	0	0	0		0		0	0	1	0	4	0	5
4:00 PM	0	1	2		0		0	0	0	0	0	0	3
4:15 PM	1	0	0		0		0	2	0	0	3	1	7
4:30 PM	0	0	0		0		0	5	1	0	2	0	8
4:45 PM	1	1	0		0		0	1	1	1	0	0	5
5:00 PM	1	0	0		0		0	1	0	0	4	0	6
5:15 PM	0	0	0		0		0	3	1	0	0	0	4
5:30 PM	1	0	0		0		0	4	0	0	5	0	10
5:45 PM	0	1	0		0		0	6	0	1	1	0	9

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	6	4	3	0	2	0	1	35	6	2	21	2	82
APPROACH %'s :	46.15%	30.77%	23.08%	0.00%	100.00%	0.00%	2.38%	83.33%	14.29%	8.00%	84.00%	8.00%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	2	1	0	0	0	0	0	14	1	1	10	0	29
PEAK HR FACTOR :	0.750			0.000			0.625			0.550			0.725

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-001

Day: Wednesday

BUSES

City: Los Angeles

Date: 12/11/2013

AM

NS/EW Streets:	Berendo St			Berendo St			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
7:00 AM								4	0	1	9		14
7:15 AM								5	1	0	4		10
7:30 AM								5	0	1	6		12
7:45 AM								6	0	0	8		14
8:00 AM								4	0	0	3		7
8:15 AM								3	0	2	6		11
8:30 AM								5	0	0	4		9
8:45 AM								3	0	0	3		6
9:00 AM								3	0	0	2		5
9:15 AM								5	0	0	1		6
9:30 AM								3	0	0	1		4
9:45 AM								2	0	0	0		2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	48	1	4	47	0	100
APPROACH %'s :							0.00%	97.96%	2.04%	7.84%	92.16%	0.00%	

PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	15	0	2	16	0	33
PEAK HR FACTOR :		0.000			0.000			0.750			0.563		0.750

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-001 | Day: Wednesday

BUSES

City: Los Angeles | Date: 12/11/2013

PM

NS/EW Streets:	Berendo St			Berendo St			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
3:00 PM								1	0	0	3		4
3:15 PM								8	0	0	2		10
3:30 PM								9	0	0	2		11
3:45 PM								8	1	1	2		12
4:00 PM								6	1	2	2		11
4:15 PM								7	0	0	5		12
4:30 PM								4	0	1	3		8
4:45 PM								9	0	1	1		11
5:00 PM								5	0	0	3		8
5:15 PM								2	0	0	3		5
5:30 PM								2	0	0	2		4
5:45 PM								8	0	0	3		11

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	69	2	5	31	0	107
APPROACH %'s :							0.00%	97.18%	2.82%	13.89%	86.11%	0.00%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	17	0	0	11	0	28
PEAK HR FACTOR :	0.000			0.000			0.531			0.917			0.636

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-001

Day: Wednesday

HEAVY TRUCKS

City: Los Angeles

Date: 12/11/2013

AM

NS/EW Streets:	Berendo St			Berendo St			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
7:00 AM	0	1	0		0	0		2	0		6	1	10
7:15 AM	0	0	0		0	1		2	1		4	0	8
7:30 AM	0	0	0		0	0		2	1		3	0	6
7:45 AM	2	0	0		0	0		4	1		6	0	13
8:00 AM	1	1	0		0	0		4	0		5	0	11
8:15 AM	0	0	0		0	1		0	0		3	0	4
8:30 AM	0	1	0		0	0		3	2		3	0	9
8:45 AM	1	1	0		0	0		1	1		4	0	8
9:00 AM	0	1	0		2	0		4	0		8	0	15
9:15 AM	0	0	0		0	0		4	1		10	0	15
9:30 AM	1	0	1		1	0		6	2		12	0	23
9:45 AM	0	0	0		2	1		2	0		9	0	14

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	5	5	1	0	5	3	0	34	9	0	73	1	136
APPROACH %'s :	45.45%	45.45%	9.09%	0.00%	62.50%	37.50%	0.00%	79.07%	20.93%	0.00%	98.65%	1.35%	

PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	2	3	0	0	0	1	0	8	3	0	15	0	32
PEAK HR FACTOR :	0.625			0.250			0.550			0.750			0.727

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-001 | Day: Wednesday

HEAVY TRUCKS

City: Los Angeles | Date: 12/11/2013

PM

NS/EW Streets:	Berendo St			Berendo St			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
3:00 PM	1			0			0	5		0	2	0	8
3:15 PM	0			0			0	3		0	5	0	8
3:30 PM	0			0			0	4		0	1	0	5
3:45 PM	0			1			0	4		1	4	0	10
4:00 PM	1			0			0	6		0	1	0	8
4:15 PM	0			1			0	1		0	0	1	3
4:30 PM	0			0			0	1		0	1	0	2
4:45 PM	1			0			1	1		0	2	0	5
5:00 PM	0			0			0	6		0	3	0	9
5:15 PM	0			0			0	1		0	2	0	3
5:30 PM	0			0			0	9		0	1	0	10
5:45 PM	0			0			0	6		0	0	0	6

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	0	0	2	0	0	1	47	0	1	22	1	77
APPROACH %'s :	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	2.08%	97.92%	0.00%	4.17%	91.67%	4.17%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	22	0	0	6	0	28
PEAK HR FACTOR :	0.000			0.000			0.611			0.500			0.700

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Vermont Ave

East/West Olympic Blvd

Day: Wednesday Date: December 11, 2013 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	136	104	85	103
BIKES	94	67	48	27
BUSES	133	140	120	88

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	368	9.00	351	7.45	477	8.30	416	7.30
PM PK 15 MIN	332	17.00	318	16.00	466	17.15	372	17.30
AM PK HOUR	1364	7.15	1262	7.00	1771	7.45	1509	7.00
PM PK HOUR	1247	16.45	1206	16.00	1803	17.00	1410	16.45

NORTHBOUND Approach / **SOUTHBOUND Approach** / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	132	1143	50	1325	*7-8*	96	1082	84	1262	2587	190	2	74	1
8-9	79	1148	57	1284	*8-9*	136	908	108	1152	2436	128	0	58	2
9-10	94	1119	79	1292	*9-10*	126	807	144	1077	2369	108	1	55	0
15-16	83	943	70	1096	*15-16*	116	902	156	1174	2270	231	0	105	1
16-17	74	1025	85	1184	*16-17*	113	979	114	1206	2390	234	4	98	1
17-18	125	1033	83	1241	*17-18*	113	899	114	1126	2367	217	3	86	2
TOTAL	587	6411	424	7422	TOTAL	700	5577	720	6997	14419	1108	10	476	7

EASTBOUND Approach / **WESTBOUND Approach** / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	84	1166	91	1341	*7-8*	60	1408	41	1509	2850	105	0	190	1
8-9	79	1580	88	1747	*8-9*	62	1213	62	1337	3084	72	3	128	3
9-10	95	1152	55	1302	*9-10*	78	1243	63	1384	2686	36	2	108	1
15-16	159	1323	119	1601	*15-16*	69	931	79	1079	2680	129	1	231	0
16-17	124	1408	85	1617	*16-17*	78	1131	82	1291	2908	123	0	234	2
17-18	154	1564	85	1803	*17-18*	79	1235	93	1407	3210	87	0	217	2
TOTAL	695	8193	523	9411	TOTAL	426	7161	420	8007	17418	552	6	1108	9

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Vermont Ave and Olympic Blvd , Los Angeles

Date: 12/11/2013

Day: Wednesday

Project #: 13-5664-002

City: Los Angeles

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Total Peak Hour Summary

CONTROL: Signalized

Vermont Ave / Olympic Blvd

Southbound Approach

	Left	Through	Right	Departing
Lanes	0	2	1	
AM	79	1044	114	1292
NOON	0	0	0	0
PM	114	899	113	1280

Eastbound Approach

	AM	NOON	PM
Departing	1473	0	1474

Lanes		AM	NOON	PM
1	Left	78	0	154
3	Through	1512	0	1564
0	Right	106	0	85

Westbound Approach

	AM	NOON	PM	Lanes
Right	47	0	93	0
Through	1288	0	1235	3
Left	61	0	79	1
Departing	1681	0	1760	

Northbound Approach

	Departing	Left	Through	Right
AM	1211	106	1167	55
NOON	0	0	0	0
PM	1063	125	1033	83
Lanes		1	2	1

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg

	In	Out
AM	1237	1292
NOON	0	0
PM	1126	1280

West Leg

	AM	NOON	PM
Out	1473	0	1474
In	1696	0	1803

East Leg

	AM	NOON	PM
In	1396	0	1407
Out	1681	0	1760

South Leg

	Out	In
AM	1211	1328
NOON	0	0
PM	1063	1241

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	2529	0	2406
West Leg	3169	0	3277
East Leg	3077	0	3167
South Leg	2539	0	2304

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-002 | Day: Wednesday

TOTALS

City: Los Angeles | Date: 12/11/2013

AM

NS/EW Streets:	Vermont Ave			Vermont Ave			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	0	1	3	0	1	3	0	
7:00 AM	44	242	10	19	266	28	24	190	14	12	345	11	1205
7:15 AM	29	323	7	22	260	25	26	249	17	18	345	8	1329
7:30 AM	34	293	12	26	250	15	20	361	21	17	389	10	1448
7:45 AM	25	285	21	29	306	16	14	366	39	13	329	12	1455
8:00 AM	30	295	10	25	251	27	24	391	23	17	276	10	1379
8:15 AM	17	294	12	34	237	21	20	394	23	14	294	15	1375
8:30 AM	20	270	17	28	214	27	15	439	23	16	323	21	1413
8:45 AM	12	289	18	49	206	33	20	356	19	15	320	16	1353
9:00 AM	27	324	17	30	202	28	33	319	14	14	304	13	1325
9:15 AM	20	250	17	25	197	32	21	305	16	16	330	17	1246
9:30 AM	26	285	19	34	185	28	18	280	14	26	337	13	1265
9:45 AM	21	260	26	37	223	56	23	248	11	22	272	20	1219

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	305	3410	186	358	2797	336	258	3898	234	200	3864	166	16012
APPROACH %'s :	7.82%	87.41%	4.77%	10.25%	80.12%	9.62%	5.88%	88.79%	5.33%	4.73%	91.35%	3.92%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	106	1167	55	114	1044	79	78	1512	106	61	1288	47	5657
PEAK HR FACTOR :		0.979			0.881			0.968			0.839		0.972

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-002 | Day: Wednesday

TOTALS

City: Los Angeles | Date: 12/11/2013

PM

NS/EW Streets:	Vermont Ave			Vermont Ave			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	0	1	3	0	1	3	0	
3:00 PM	25	203	10	30	221	37	35	340	29	16	220	24	1190
3:15 PM	17	222	18	33	221	46	45	323	27	26	243	16	1237
3:30 PM	16	268	26	30	245	34	38	324	28	17	244	16	1286
3:45 PM	25	250	16	23	215	39	41	336	35	10	224	23	1237
4:00 PM	16	253	23	37	248	33	35	356	21	22	248	23	1315
4:15 PM	20	236	21	19	233	30	35	338	28	25	293	18	1296
4:30 PM	22	260	26	31	255	26	31	376	14	19	298	17	1375
4:45 PM	16	276	15	26	243	25	23	338	22	12	292	24	1312
5:00 PM	31	275	26	32	228	29	33	367	27	16	320	24	1408
5:15 PM	26	233	18	31	246	24	46	403	17	16	311	23	1394
5:30 PM	33	281	17	21	212	35	44	387	17	25	324	23	1419
5:45 PM	35	244	22	29	213	26	31	407	24	22	280	23	1356

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	282	3001	238	342	2780	384	437	4295	289	226	3297	254	15825
APPROACH %'s :	8.01%	85.23%	6.76%	9.75%	79.29%	10.95%	8.70%	85.54%	5.76%	5.98%	87.29%	6.72%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	125	1033	83	113	899	114	154	1564	85	79	1235	93	5577
PEAK HR FACTOR :		0.934			0.935			0.967			0.946		0.983

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-002

Day: Wednesday

CARS

City: Los Angeles

Date: 12/11/2013

AM

NS/EW Streets:	Vermont Ave			Vermont Ave			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	0	1	3	0	1	3	0	
7:00 AM	38	225	9	17	259	28	21	187	14	12	333	10	1153
7:15 AM	28	303	7	21	252	25	24	245	16	17	338	7	1283
7:30 AM	34	278	11	26	242	15	20	355	20	17	379	10	1407
7:45 AM	24	278	18	28	296	14	11	360	37	13	318	11	1408
8:00 AM	30	284	8	25	245	26	23	383	23	16	270	10	1343
8:15 AM	17	286	11	33	221	20	20	392	22	13	283	15	1333
8:30 AM	20	257	16	26	207	26	13	433	22	16	318	17	1371
8:45 AM	10	278	18	49	200	33	19	353	19	12	316	15	1322
9:00 AM	26	316	17	30	195	27	31	315	14	14	296	12	1293
9:15 AM	20	235	17	24	185	31	20	296	16	15	320	14	1193
9:30 AM	25	277	19	34	176	27	18	272	14	25	325	12	1224
9:45 AM	21	247	24	37	214	54	21	245	10	21	264	18	1176

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	293	3264	175	350	2692	326	241	3836	227	191	3760	151	15506
APPROACH %'s :	7.85%	87.46%	4.69%	10.39%	79.93%	9.68%	5.60%	89.13%	5.27%	4.66%	91.66%	3.68%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	105	1126	48	112	1004	75	74	1490	102	59	1250	46	5491
PEAK HR FACTOR :		0.990			0.881			0.960			0.834		0.975

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-002 | Day: Wednesday

CARS

City: Los Angeles | Date: 12/11/2013

PM

NS/EW Streets:	Vermont Ave			Vermont Ave			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	0	1	3	0	1	3	0	
3:00 PM	25	194	10	30	213	37	34	336	28	16	217	24	1164
3:15 PM	16	216	18	33	213	46	44	308	27	26	235	15	1197
3:30 PM	16	261	25	30	238	33	37	316	27	16	241	16	1256
3:45 PM	25	241	14	21	202	37	39	326	35	9	218	22	1189
4:00 PM	16	245	22	37	236	32	35	350	18	21	244	22	1278
4:15 PM	20	228	21	19	218	28	32	332	26	24	288	18	1254
4:30 PM	22	249	26	31	246	25	31	367	14	19	294	15	1339
4:45 PM	16	266	15	26	231	25	22	330	22	12	288	24	1277
5:00 PM	31	268	25	31	223	28	32	358	27	16	314	24	1377
5:15 PM	26	225	18	31	237	24	46	399	17	15	308	22	1368
5:30 PM	33	275	17	21	204	35	44	378	16	25	320	23	1391
5:45 PM	35	239	22	28	210	26	28	397	24	22	278	23	1332

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	281	2907	233	338	2671	376	424	4197	281	221	3245	248	15422
APPROACH %'s :	8.21%	84.98%	6.81%	9.99%	78.91%	11.11%	8.65%	85.62%	5.73%	5.95%	87.37%	6.68%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	125	1007	82	111	874	113	150	1532	84	78	1220	92	5468
PEAK HR FACTOR :		0.934			0.940			0.956			0.944		0.983

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5664-002
N/S Street: Vermont Ave
E/W Street: Olympic Blvd
DATE: 12/11/2013 DAY: Wednesday
CITY: Los Angeles

A M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	10	12	15	17	15	17	3	10
7:15 AM	8	15	21	17	21	17	11	14
7:30 AM	7	8	14	30	14	30	18	14
7:45 AM	3	11	39	37	39	37	15	20
8:00 AM	15	9	27	21	27	21	16	9
8:15 AM	8	4	21	12	21	12	8	9
8:30 AM	7	5	11	12	11	12	9	8
8:45 AM	5	5	14	10	14	10	3	10
9:00 AM	4	1	13	11	13	11	9	2
9:15 AM	10	6	15	8	15	8	6	1
9:30 AM	10	12	22	11	22	11	6	5
9:45 AM	10	2	16	12	16	12	6	1
TOTALS	97	90	228	198	228	198	110	103

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	1	0	0
7:45 AM	0	1	0	2	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	3
8:15 AM	1	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	3	0	0
8:45 AM	0	1	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	1	0	1	0	0	2
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	1	2	1	2	1	4	0	5

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	7	8	22	8	22	8	13	8
3:15 PM	18	12	73	19	73	19	19	25
3:30 PM	19	9	29	16	29	16	18	18
3:45 PM	20	12	37	27	37	27	12	16
4:00 PM	10	14	64	13	64	13	12	15
4:15 PM	14	15	34	20	34	20	15	16
4:30 PM	14	10	24	24	24	24	22	16
4:45 PM	13	8	31	24	31	24	17	10
5:00 PM	19	8	34	10	34	10	10	13
5:15 PM	14	3	35	35	35	35	16	7
5:30 PM	16	8	34	28	34	28	19	9
5:45 PM	5	13	28	13	28	13	6	7
TOTALS	169	120	445	237	445	237	179	160

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	1	0	0	0	0	0	0
4:00 PM	0	0	0	3	0	0	0	0
4:15 PM	1	0	0	0	0	2	0	0
4:30 PM	0	0	0	1	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	2	0	0	0	0	0	0
5:15 PM	0	0	2	0	0	0	0	0
5:30 PM	0	0	0	1	0	2	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	1	3	2	5	0	4	0	1

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-002 | Day: Wednesday

BIKES

City: Los Angeles | Date: 12/11/2013

AM

NS/EW Streets:	Vermont Ave			Vermont Ave			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	0	1	3	0	1	3	0	
7:00 AM	0	1	0	0	1	0	1	1	0	0	0	0	4
7:15 AM	0	5	0	0	2	0	0	2	1	0	1	0	11
7:30 AM	0	3	0	0	6	0	0	0	0	0	2	0	11
7:45 AM	0	4	0	2	2	0	1	1	0	0	0	0	10
8:00 AM	0	1	0	0	3	0	0	0	0	0	2	1	7
8:15 AM	0	3	0	0	0	0	0	2	0	0	2	0	7
8:30 AM	1	4	0	1	2	0	0	2	0	1	0	0	11
8:45 AM	1	4	0	0	1	1	1	1	0	0	0	1	10
9:00 AM	0	2	0	0	4	0	1	1	0	0	2	0	10
9:15 AM	1	3	0	0	2	0	0	0	0	0	2	0	8
9:30 AM	0	3	1	1	3	0	0	3	0	0	0	0	11
9:45 AM	0	4	0	0	0	0	0	0	0	0	0	0	4

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	37	1	4	26	1	4	13	1	1	11	2	104
APPROACH %'s :	7.32%	90.24%	2.44%	12.90%	83.87%	3.23%	22.22%	72.22%	5.56%	7.14%	78.57%	14.29%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	11	0	2	11	0	1	3	0	0	6	1	35
PEAK HR FACTOR :	0.688			0.542			0.500			0.583			0.795

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-002 | Day: Wednesday

BIKES

City: Los Angeles | Date: 12/11/2013

PM

NS/EW Streets:	Vermont Ave			Vermont Ave			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	0	1	3	0	1	3	0	
3:00 PM	0	2	0	1	1	1	1	2	0	0	1	0	9
3:15 PM	0	3	1	2	2	0	0	3	1	0	0	1	13
3:30 PM	0	2	1	1	2	0	0	3	1	0	2	0	12
3:45 PM	0	1	0	0	3	0	0	0	0	0	0	0	4
4:00 PM	0	1	0	0	1	0	0	0	0	0	2	0	4
4:15 PM	0	8	0	0	1	0	0	0	0	0	1	1	11
4:30 PM	1	4	0	0	8	0	0	4	0	0	1	0	18
4:45 PM	0	8	0	1	3	0	0	3	0	1	0	0	16
5:00 PM	0	3	0	0	5	0	0	0	0	0	1	0	9
5:15 PM	0	4	0	0	1	0	1	4	0	0	0	1	11
5:30 PM	2	5	1	0	1	0	0	4	2	0	0	0	15
5:45 PM	1	5	0	0	2	0	0	1	0	1	0	0	10

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	46	3	5	30	1	2	24	4	2	8	3	132
APPROACH %'s :	7.55%	86.79%	5.66%	13.89%	83.33%	2.78%	6.67%	80.00%	13.33%	15.38%	61.54%	23.08%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	3	17	1	0	9	0	1	9	2	1	1	1	45
PEAK HR FACTOR :	0.656			0.450			0.500			0.750			0.750

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-002 | Day: Wednesday

BUSES

City: Los Angeles | Date: 12/11/2013

AM

NS/EW Streets:	Vermont Ave			Vermont Ave			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	0	1	3	0	1	3	0	
7:00 AM	2	7	1	2	5		2	3	0	0	9	0	31
7:15 AM	0	8	0	1	5		1	3	1	1	4	1	25
7:30 AM	0	7	0	0	5		0	3	1	0	8	0	24
7:45 AM	0	3	1	0	5		1	4	2	0	7	0	23
8:00 AM	0	6	0	0	5		1	3	0	1	3	0	19
8:15 AM	0	3	0	1	8		0	2	1	0	8	0	23
8:30 AM	0	6	0	0	4		1	5	0	0	3	1	20
8:45 AM	0	4	0	0	4		1	2	0	0	2	0	13
9:00 AM	0	3	0	0	5		1	3	0	0	2	0	14
9:15 AM	0	4	0	0	5		1	3	0	0	1	0	14
9:30 AM	0	1	0	0	3		0	3	0	0	2	0	9
9:45 AM	0	5	1	0	3		1	1	0	0	0	0	11

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	57	3	4	57	0	10	35	5	2	49	2	226
APPROACH %'s :	3.23%	91.94%	4.84%	6.56%	93.44%	0.00%	20.00%	70.00%	10.00%	3.77%	92.45%	3.77%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	19	1	1	23	0	2	12	4	1	26	0	89
PEAK HR FACTOR :		0.714			0.667			0.643			0.844		0.927

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-002 | Day: Wednesday

BUSES

City: Los Angeles | Date: 12/11/2013

PM

NS/EW Streets:	Vermont Ave			Vermont Ave			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	0	1	3	0	1	3	0	
3:00 PM		6	0	0	3	0	1	0	0	0	2	0	12
3:15 PM		5	0	0	5	0	1	7	0	0	3	0	21
3:30 PM		6	1	0	4	1	1	7	0	0	1	0	21
3:45 PM		8	2	0	9	0	2	6	0	1	3	0	31
4:00 PM		6	0	0	8	1	0	3	3	0	2	0	23
4:15 PM		6	0	0	13	1	2	4	1	0	5	0	32
4:30 PM		5	0	0	7	1	0	5	0	0	3	2	23
4:45 PM		6	0	0	8	0	1	7	0	0	3	0	25
5:00 PM		6	1	1	2	0	1	5	0	0	3	0	19
5:15 PM		5	0	0	6	0	0	2	0	0	2	1	16
5:30 PM		5	0	0	7	0	0	3	0	0	2	0	17
5:45 PM		3	0	0	2	0	2	6	0	0	2	0	15

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	67	4	1	74	4	11	55	4	1	31	3	255
APPROACH %'s :	0.00%	94.37%	5.63%	1.27%	93.67%	5.06%	15.71%	78.57%	5.71%	2.86%	88.57%	8.57%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	19	1	1	17	0	3	16	0	0	9	1	67
PEAK HR FACTOR :	0.714			0.643			0.594			0.833			0.882

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-002

Day: Wednesday

HEAVY TRUCKS

City: Los Angeles

Date: 12/11/2013

AM

NS/EW Streets:	Vermont Ave			Vermont Ave			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	0	1	3	0	1	3	0	
7:00 AM	4	10	0	0	2	0	1	0	0	0	3	1	21
7:15 AM	1	12	0	0	3	0	1	1	0	0	3	0	21
7:30 AM	0	8	1	0	3	0	0	3	0	0	2	0	17
7:45 AM	1	4	2	1	5	2	2	2	0	0	4	1	24
8:00 AM	0	5	2	0	1	1	0	5	0	0	3	0	17
8:15 AM	0	5	1	0	8	1	0	0	0	1	3	0	19
8:30 AM	0	7	1	2	3	1	1	1	1	0	2	3	22
8:45 AM	2	7	0	0	2	0	0	1	0	3	2	1	18
9:00 AM	1	5	0	0	2	1	1	1	0	0	6	1	18
9:15 AM	0	11	0	1	7	1	0	6	0	1	9	3	39
9:30 AM	1	7	0	0	6	1	0	5	0	1	10	1	32
9:45 AM	0	8	1	0	6	2	1	2	1	1	8	2	32

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	10	89	8	4	48	10	7	27	2	7	55	13	280
APPROACH %'s :	9.35%	83.18%	7.48%	6.45%	77.42%	16.13%	19.44%	75.00%	5.56%	9.33%	73.33%	17.33%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	1	22	6	1	17	4	2	10	0	1	12	1	77
PEAK HR FACTOR :		0.806			0.611			0.600			0.700		0.802

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-002 | Day: Wednesday

HEAVY TRUCKS

City: Los Angeles | Date: 12/11/2013

PM

NS/EW Streets:	Vermont Ave			Vermont Ave			Olympic Blvd			Olympic Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	0	1	3	0	1	3	0	
3:00 PM	0	3	0	0	5	0	0	4	1	0	1	0	14
3:15 PM	1	1	0	0	3	0	0	8	0	0	5	1	19
3:30 PM	0	1	0	0	3	0	0	1	1	1	2	0	9
3:45 PM	0	1	0	2	4	2	0	4	0	0	3	1	17
4:00 PM	0	2	1	0	4	0	0	3	0	1	2	1	14
4:15 PM	0	2	0	0	2	1	1	2	1	1	0	0	10
4:30 PM	0	6	0	0	2	0	0	4	0	0	1	0	13
4:45 PM	0	4	0	0	4	0	0	1	0	0	1	0	10
5:00 PM	0	1	0	0	3	1	0	4	0	0	3	0	12
5:15 PM	0	3	0	0	3	0	0	2	0	1	1	0	10
5:30 PM	0	1	0	0	1	0	0	6	1	0	2	0	11
5:45 PM	0	2	0	1	1	0	1	4	0	0	0	0	9

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	27	1	3	35	4	2	43	4	4	21	3	148
APPROACH %'s :	3.45%	93.10%	3.45%	7.14%	83.33%	9.52%	4.08%	87.76%	8.16%	14.29%	75.00%	10.71%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	7	0	1	8	1	1	16	1	1	6	0	42
PEAK HR FACTOR :		0.583			0.625			0.643			0.583		0.875

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation

MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Normandie Ave

East/West 11th St

Day: Wednesday Date: December 11, 2013 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	47	33	8	10
BIKES	29	33	9	4
BUSES	47	48	2	1

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	291	8.45	200	8.00	37	8.00	39	9.45
PM PK 15 MIN	207	17.30	255	17.15	51	17.30	71	15.00
AM PK HOUR	1026	8.30	730	7.30	113	7.15	141	9.00
PM PK HOUR	811	16.45	938	16.45	178	17.00	240	16.00

NORTHBOUND Approach					**SOUTHBOUND Approach**					**TOTAL**	**XING S/L**		**XING N/L**	
Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	12	742	18	772	*7-8*	15	634	14	663	1435	8	1	13	0
8-9	19	960	16	995	*8-9*	13	645	19	677	1672	10	3	19	1
9-10	12	889	16	917	*9-10*	26	514	14	554	1471	12	0	12	0
15-16	20	700	19	739	*15-16*	17	685	24	726	1465	23	1	10	0
16-17	17	712	32	761	*16-17*	30	825	26	881	1642	17	0	32	2
17-18	22	748	33	803	*17-18*	27	854	31	912	1715	12	0	8	0
TOTAL	102	4751	134	4987	TOTAL	128	4157	128	4413	9400	82	5	94	3

EASTBOUND Approach					**WESTBOUND Approach**					**TOTAL**	**XING W/L**		**XING E/L**	
Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	17	57	17	91	*7-8*	20	41	43	104	195	18	0	40	3
8-9	16	52	29	97	*8-9*	22	43	50	115	212	19	0	46	7
9-10	20	40	23	83	*9-10*	18	61	62	141	224	13	1	18	0
15-16	27	77	32	136	*15-16*	23	124	83	230	366	28	0	35	1
16-17	33	97	26	156	*16-17*	31	108	101	240	396	27	1	48	5
17-18	35	110	33	178	*17-18*	28	127	80	235	413	36	1	56	4
TOTAL	148	433	160	741	TOTAL	142	504	419	1065	1806	141	3	243	20

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Normandie Ave and 11th St , Los Angeles

Date:	12/11/2013
Day:	Wednesday
Project #:	13-5664-003
City:	Los Angeles

AM Peak Hour	800 AM
NOON Peak Hour	
PM Peak Hour	445 PM

Total Peak Hour Summary

Normandie Ave

11th St

N

Southbound Approach

	Right	Through	Left	Departing
Lanes	0	2	0	
AM	19	645	13	1026
NOON	0	0	0	0
PM	30	880	28	880

Eastbound Approach

	Lanes	AM	NOON	PM
Departing		81	0	165
Left	0	16	0	36
Through	1	52	0	100
Right	0	29	0	29

Westbound Approach

	AM	NOON	PM	Lanes
Right	50	0	81	0
Through	43	0	118	1
Left	22	0	28	0
Departing	81	0	159	

Northbound Approach

	Departing	Left	Through	Right
AM	696	19	960	16
NOON	0	0	0	0
PM	937	17	763	31
Lanes		0	2	0

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg	In	Out
AM	677	1026
NOON	0	0
PM	938	880

West Leg	AM	NOON	PM
Out	81	0	165
In	97	0	165

East Leg	AM	NOON	PM
In	115	0	227
Out	81	0	159

South Leg	Out	In
AM	696	995
NOON	0	0
PM	937	811

Total Volume Per Leg

	AM	NOON	PM
North Leg	1703	0	1818
West Leg	178	0	330
East Leg	196	0	386
South Leg	1691	0	1748

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-003 | Day: Wednesday

TOTALS

City: Los Angeles | Date: 12/11/2013

AM

NS/EW Streets:	Normandie Ave			Normandie Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	1	0	0	1	0	
7:00 AM	5	181	6	5	144	1	2	9	4	3	7	9	376
7:15 AM	2	158	3	2	148	2	6	12	4	5	6	9	357
7:30 AM	4	211	5	7	186	5	6	10	6	7	14	13	474
7:45 AM	1	192	4	1	156	6	3	26	3	5	14	12	423
8:00 AM	5	193	4	4	188	8	4	22	11	5	12	14	470
8:15 AM	3	240	4	4	160	5	3	13	6	6	10	9	463
8:30 AM	3	250	2	3	147	1	4	10	4	4	13	11	452
8:45 AM	8	277	6	2	150	5	5	7	8	7	8	16	499
9:00 AM	1	225	5	6	117	2	8	7	5	6	12	16	410
9:15 AM	3	245	1	6	134	1	3	9	8	6	12	12	440
9:30 AM	3	213	2	5	138	5	4	11	4	2	19	17	423
9:45 AM	5	206	8	9	125	6	5	13	6	4	18	17	422

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	43	2591	50	54	1793	47	53	149	69	60	145	155	5209
APPROACH %'s :	1.60%	96.54%	1.86%	2.85%	94.67%	2.48%	19.56%	54.98%	25.46%	16.67%	40.28%	43.06%	

PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	19	960	16	13	645	19	16	52	29	22	43	50	1884
PEAK HR FACTOR :		0.855			0.846			0.655			0.927		0.944

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-003 | Day: Wednesday

TOTALS

City: Los Angeles | Date: 12/11/2013

PM

NS/EW Streets:	Normandie Ave			Normandie Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	1	0	0	1	0	
3:00 PM	5	134	2	3	155	3	5	18	9	6	37	28	405
3:15 PM	8	179	5	7	177	6	8	17	8	9	40	21	485
3:30 PM	5	188	7	6	174	8	10	11	8	4	21	19	461
3:45 PM	2	199	5	1	179	7	4	31	7	4	26	15	480
4:00 PM	6	169	7	4	205	6	3	25	10	9	26	25	495
4:15 PM	4	171	5	9	201	9	5	29	8	7	29	27	504
4:30 PM	4	181	13	8	206	3	14	20	4	7	30	23	513
4:45 PM	3	191	7	9	213	8	11	23	4	8	23	26	526
5:00 PM	3	196	7	5	212	5	6	23	7	6	30	18	518
5:15 PM	4	183	10	8	241	6	7	23	10	4	29	20	545
5:30 PM	7	193	7	6	214	11	12	31	8	10	36	17	552
5:45 PM	8	176	9	8	187	9	10	33	8	8	32	25	513

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	59	2160	84	74	2364	81	95	284	91	82	359	264	5997
APPROACH %'s :	2.56%	93.79%	3.65%	2.94%	93.85%	3.22%	20.21%	60.43%	19.36%	11.63%	50.92%	37.45%	

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	17	763	31	28	880	30	36	100	29	28	118	81	2141
PEAK HR FACTOR :		0.979			0.920			0.809			0.901		0.970

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-003 | Day: Wednesday

CARS

City: Los Angeles | Date: 12/11/2013

AM

NS/EW Streets:	Normandie Ave			Normandie Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	1	0	0	1	0	
7:00 AM	5	175	6	5	140	1	2	8	4	3	7	9	365
7:15 AM	2	155	3	2	146	2	6	11	4	5	5	9	350
7:30 AM	4	208	5	7	182	5	6	10	6	7	13	13	466
7:45 AM	1	188	3	1	151	6	2	25	3	5	13	12	410
8:00 AM	5	189	4	4	186	8	4	22	11	5	12	14	464
8:15 AM	3	239	4	4	156	5	3	13	6	6	8	9	456
8:30 AM	3	245	2	3	144	1	4	10	4	4	12	11	443
8:45 AM	8	274	6	1	148	5	5	6	8	7	6	16	490
9:00 AM	1	220	5	6	114	2	7	7	5	6	12	16	401
9:15 AM	2	237	1	6	133	1	3	8	8	6	12	12	429
9:30 AM	3	209	2	5	132	5	4	11	4	2	19	17	413
9:45 AM	5	204	8	9	124	6	5	13	6	4	17	17	418

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	42	2543	49	53	1756	47	51	144	69	60	136	155	5105
APPROACH %'s :	1.59%	96.55%	1.86%	2.86%	94.61%	2.53%	19.32%	54.55%	26.14%	17.09%	38.75%	44.16%	

PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	19	947	16	12	634	19	16	51	29	22	38	50	1853
PEAK HR FACTOR :		0.852			0.840			0.649			0.887		0.945

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-003 | Day: Wednesday

CARS

City: Los Angeles | Date: 12/11/2013

PM

NS/EW Streets:	Normandie Ave			Normandie Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	1	0	0	1	0	
3:00 PM	5	130	2	3	151	2	5	18	9	6	37	28	396
3:15 PM	8	176	5	5	175	6	7	17	8	9	40	20	476
3:30 PM	4	185	7	6	168	8	10	11	8	4	21	18	450
3:45 PM	2	195	5	1	177	7	4	30	7	4	26	15	473
4:00 PM	5	166	7	4	197	6	3	25	10	9	26	25	483
4:15 PM	4	164	5	9	199	9	5	29	8	7	29	27	495
4:30 PM	4	175	13	8	204	3	14	20	4	7	30	23	505
4:45 PM	3	188	7	9	210	8	11	23	4	8	23	26	520
5:00 PM	3	194	7	5	208	5	6	23	7	6	30	18	512
5:15 PM	4	183	10	8	237	6	7	23	10	4	29	20	541
5:30 PM	7	189	7	6	211	11	11	31	8	10	36	17	544
5:45 PM	8	174	8	8	187	9	10	33	8	8	32	25	510

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	57	2119	83	72	2324	80	93	283	91	82	359	262	5905
APPROACH %'s :	2.52%	93.80%	3.67%	2.91%	93.86%	3.23%	19.91%	60.60%	19.49%	11.66%	51.07%	37.27%	

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	17	754	31	28	866	30	35	100	29	28	118	81	2117
PEAK HR FACTOR :		0.983			0.920			0.820			0.901		0.973

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5664-003
N/S Street: Normandie Ave
E/W Street: 11th St
DATE: 12/11/2013 DAY: Wednesday
CITY: Los Angeles

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	1	0	12	2	1	2
7:15 AM	1	1	1	1	5	4	1	1
7:30 AM	5	3	2	0	5	1	3	2
7:45 AM	2	1	1	2	7	4	3	5
8:00 AM	2	4	2	3	12	11	1	6
8:15 AM	4	2	1	0	5	4	4	3
8:30 AM	2	0	2	2	5	3	1	1
8:45 AM	1	4	0	0	3	3	2	1
9:00 AM	3	0	2	1	2	3	0	2
9:15 AM	1	1	3	1	4	3	4	2
9:30 AM	2	2	0	0	1	1	0	1
9:45 AM	0	3	0	5	3	1	3	1
TOTALS	23	21	15	15	64	40	23	27

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	2	0	0	0
7:45 AM	0	0	0	1	1	0	0	0
8:00 AM	0	0	0	3	3	4	0	0
8:15 AM	1	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	1	0
TOTALS	1	0	0	4	6	4	1	0

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	4	0	3	3	4	5	4	3
3:15 PM	0	1	7	3	6	3	7	3
3:30 PM	1	1	0	2	11	1	2	3
3:45 PM	2	1	2	3	4	1	2	4
4:00 PM	0	1	1	3	6	1	2	4
4:15 PM	4	11	2	2	6	12	3	3
4:30 PM	6	0	0	4	4	1	4	5
4:45 PM	5	5	3	2	6	12	1	5
5:00 PM	0	2	0	1	3	6	2	4
5:15 PM	1	2	5	1	6	10	3	8
5:30 PM	2	0	0	3	1	5	2	12
5:45 PM	1	0	2	0	7	18	0	5
TOTALS	26	24	25	27	64	75	32	59

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	1	0	0	0	0	0
3:30 PM	0	0	0	0	1	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	1	0	0	1	2	0	0
4:30 PM	1	0	0	0	0	0	1	0
4:45 PM	0	0	0	0	2	0	0	0
5:00 PM	0	0	0	0	0	1	0	0
5:15 PM	0	0	0	0	0	1	0	0
5:30 PM	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	1	1	0	0
TOTALS	1	1	1	0	5	5	1	1

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-003 | Day: Wednesday

BIKES

City: Los Angeles | Date: 12/11/2013

AM

NS/EW Streets:	Normandie Ave			Normandie Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	1	0	0	1	0	
7:00 AM		1	0	0	0		0	0		0	0	0	1
7:15 AM		1	0	0	0		0	0		1	0	0	2
7:30 AM		1	0	1	1		0	0		0	0	0	3
7:45 AM		1	0	2	1		0	1		0	0	0	5
8:00 AM		1	0	0	0		0	0		0	0	0	1
8:15 AM		1	0	0	1		0	0		0	0	0	2
8:30 AM		0	0	0	0		2	0		0	0	0	2
8:45 AM		0	0	0	0		0	0		0	0	1	1
9:00 AM		1	1	0	0		0	0		0	0	0	2
9:15 AM		2	0	0	0		0	0		0	0	0	2
9:30 AM		0	0	0	1		0	1		0	0	0	2
9:45 AM		2	0	0	1		1	0		0	0	0	4

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	11	1	3	5	0	3	2	0	1	0	1	27
APPROACH %'s :	0.00%	91.67%	8.33%	37.50%	62.50%	0.00%	60.00%	40.00%	0.00%	50.00%	0.00%	50.00%	

PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	2	0	0	1	0	2	0	0	0	0	1	6
PEAK HR FACTOR :		0.500			0.250			0.250			0.250		0.750

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-003

Day: Wednesday

BIKES

City: Los Angeles

Date: 12/11/2013

PM

NS/EW Streets:	Normandie Ave			Normandie Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	1	0	0	1	0	
3:00 PM		3		0	2	0	0			0	0		5
3:15 PM		0		1	0	1	0			0	0		2
3:30 PM		1		0	3	1	0			0	0		5
3:45 PM		1		0	3	0	0			0	0		4
4:00 PM		3		1	4	0	0			0	0		8
4:15 PM		1		0	1	0	0			0	0		2
4:30 PM		2		0	0	0	0			0	0		2
4:45 PM		1		0	1	0	0			0	1		3
5:00 PM		0		0	4	0	0			0	0		4
5:15 PM		2		0	2	0	3			0	0		7
5:30 PM		2		0	1	0	0			1	0		4
5:45 PM		1		0	0	0	1			0	0		2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	17	0	2	21	2	4	0	0	1	1	0	48
APPROACH %'s :	0.00%	100.00%	0.00%	8.00%	84.00%	8.00%	100.00%	0.00%	0.00%	50.00%	50.00%	0.00%	

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	5	0	0	8	0	3	0	0	1	1	0	18
PEAK HR FACTOR :	0.625			0.500			0.250			0.500			0.643

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-003

Day: Wednesday

BUSES

City: Los Angeles

Date: 12/11/2013

AM

NS/EW Streets:	Normandie Ave			Normandie Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	1	0	0	1	0	
7:00 AM		3	0		4		0				0		7
7:15 AM		2	0		1		0				0		3
7:30 AM		1	0		3		0				1		5
7:45 AM		3	1		3		1				0		8
8:00 AM		1	0		2		0				0		3
8:15 AM		1	0		4		0				0		5
8:30 AM		2	0		2		0				0		4
8:45 AM		1	0		1		0				0		2
9:00 AM		1	0		1		0				0		2
9:15 AM		1	0		0		0				0		1
9:30 AM		0	0		2		0				0		2
9:45 AM		2	0		0		0				0		2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	18	1	0	23	0	1	0	0	0	1	0	44
APPROACH %'s :	0.00%	94.74%	5.26%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	5	0	0	9	0	0	0	0	0	0	0	14
PEAK HR FACTOR :	0.625			0.563			0.000			0.000			0.700

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-003 | Day: Wednesday

BUSES

City: Los Angeles | Date: 12/11/2013

PM

NS/EW Streets:	Normandie Ave			Normandie Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	1	0	0	1	0	
3:00 PM	0	3			2			0					5
3:15 PM	0	2			2			0					4
3:30 PM	1	3			4			0					8
3:45 PM	0	4			1			1					6
4:00 PM	1	2			5			0					8
4:15 PM	0	2			2			0					4
4:30 PM	0	3			2			0					5
4:45 PM	0	2			1			0					3
5:00 PM	0	2			3			0					5
5:15 PM	0	0			1			0					1
5:30 PM	0	2			2			0					4
5:45 PM	0	1			0			0					1

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	26	0	0	25	0	0	1	0	0	0	0	54
APPROACH %'s :	7.14%	92.86%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%				

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	6	0	0	7	0	0	0	0	0	0	0	13
PEAK HR FACTOR :	0.750			0.583			0.000			0.000			0.650

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-003 | Day: Wednesday

HEAVY TRUCKS

City: Los Angeles | Date: 12/11/2013

AM

NS/EW Streets:	Normandie Ave			Normandie Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	1	0	0	1	0	
7:00 AM	0	3		0	0		0	1			0		4
7:15 AM	0	1		0	1		0	1			1		4
7:30 AM	0	2		0	1		0	0			0		3
7:45 AM	0	1		0	2		0	1			1		5
8:00 AM	0	3		0	0		0	0			0		3
8:15 AM	0	0		0	0		0	0			2		2
8:30 AM	0	3		0	1		0	0			1		5
8:45 AM	0	2		1	1		0	1			2		7
9:00 AM	0	4		0	2		1	0			0		7
9:15 AM	1	7		0	1		0	1			0		10
9:30 AM	0	4		0	4		0	0			0		8
9:45 AM	0	0		0	1		0	0			1		2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	30	0	1	14	0	1	5	0	0	8	0	60
APPROACH %'s :	3.23%	96.77%	0.00%	6.67%	93.33%	0.00%	16.67%	83.33%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	8	0	1	2	0	0	1	0	0	5	0	17
PEAK HR FACTOR :	0.667			0.375			0.250			0.625			0.607

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-003 Day: Wednesday

HEAVY TRUCKS

City: Los Angeles Date: 12/11/2013

PM

NS/EW Streets:	Normandie Ave			Normandie Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	1	0	0	1	0	
3:00 PM		1	0	0	2	1	0					0	4
3:15 PM		1	0	2	0	0	1					1	5
3:30 PM		0	0	0	2	0	0					1	3
3:45 PM		0	0	0	1	0	0					0	1
4:00 PM		1	0	0	3	0	0					0	4
4:15 PM		5	0	0	0	0	0					0	5
4:30 PM		3	0	0	0	0	0					0	3
4:45 PM		1	0	0	2	0	0					0	3
5:00 PM		0	0	0	1	0	0					0	1
5:15 PM		0	0	0	3	0	0					0	3
5:30 PM		2	0	0	1	0	1					0	4
5:45 PM		1	1	0	0	0	0					0	2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	15	1	2	15	1	2	0	0	0	0	2	38
APPROACH %'s :	0.00%	93.75%	6.25%	11.11%	83.33%	5.56%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	3	0	0	7	0	1	0	0	0	0	0	11
PEAK HR FACTOR :	0.375			0.583			0.250			0.000			0.688

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Vermont Ave

East/West 11th St

Day: Wednesday Date: December 11, 2013 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	120	94	9	3
BIKES	65	69	7	18
BUSES	136	144	11	11

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	358	8.30	324	7.45	96	7.45	67	7.45
PM PK 15 MIN	345	17.30	296	15.30	70	17.30	81	17.30
AM PK HOUR	1368	7.15	1195	7.00	255	7.30	229	7.15
PM PK HOUR	1319	16.45	1135	16.00	238	17.00	255	17.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	42	1244	37	1323
8-9	49	1237	64	1350
9-10	43	1167	47	1257
15-16	62	1014	80	1156
16-17	73	1120	87	1280
17-18	75	1169	71	1315
TOTAL	344	6951	386	7681

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	34	1123	38	1195
8-9	41	953	32	1026
9-10	35	858	28	921
15-16	38	1008	47	1093
16-17	26	1043	66	1135
17-18	28	1020	44	1092
TOTAL	202	6005	255	6462

	TOTAL	**XING S/L**		**XING N/L**	
Hours	N-S	Ped	Sch	Ped	Sch
7-8	2518	142	8	91	0
8-9	2376	33	2	38	0
9-10	2178	16	0	18	0
15-16	2249	149	6	92	0
16-17	2415	84	0	44	0
17-18	2407	75	0	63	0
TOTAL	14143	499	16	346	0

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	52	116	49	217
8-9	49	44	76	169
9-10	35	49	45	129
15-16	42	74	77	193
16-17	38	99	56	193
17-18	44	120	74	238
TOTAL	260	502	377	1139

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	59	93	72	224
8-9	55	57	50	162
9-10	43	53	49	145
15-16	52	83	48	183
16-17	49	86	65	200
17-18	60	128	67	255
TOTAL	318	500	351	1169

	TOTAL	**XING W/L**		**XING E/L**	
Hours	E-W	Ped	Sch	Ped	Sch
7-8	441	71	0	41	0
8-9	331	44	0	27	0
9-10	274	31	0	22	0
15-16	376	173	0	60	0
16-17	393	106	0	43	0
17-18	493	98	0	53	0
TOTAL	2308	523	0	246	0

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Vermont Ave and 11th St , Los Angeles

Date: 12/11/2013
Day: Wednesday

Project #: 13-5664-004
City: Los Angeles

N

Vermont Ave

11th St

Total Peak Hour Summary

Southbound Approach

Lanes	0	2	1		
AM	39	1111	40	1395	AM
NOON	0	0	0	0	NOON
PM	44	1020	28	1280	PM

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Eastbound Approach

Lanes	AM	NOON	PM
	180	0	247
1	56	0	44
1	125	0	120
0	72	0	74

CONTROL

Signalized

Westbound Approach

AM	NOON	PM	Lanes
67	0	67	0
100	0	128	1
62	0	60	1
220	0	219	

Northbound Approach

AM	1245	41	1272	55	AM
NOON	0	0	0	0	NOON
PM	1154	75	1169	71	PM
		1	2	0	Lanes

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg

AM	1190	1395	AM
NOON	0	0	NOON
PM	1092	1280	PM

West Leg

AM	NOON	PM
180	0	247
253	0	238

East Leg

AM	NOON	PM
229	0	255
220	0	219

South Leg

AM	1245	1368
NOON	0	0
PM	1154	1315

Total Volume Per Leg

North Leg

AM	2585
NOON	0
PM	2372

West Leg

AM	NOON	PM
433	0	485

East Leg

AM	NOON	PM
449	0	474

South Leg

AM	2613
NOON	0
PM	2469

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-004 | Day: Wednesday

TOTALS

City: Los Angeles | Date: 12/11/2013

AM

NS/EW Streets:	Vermont Ave			Vermont Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	0	1	1	0	
7:00 AM	11	293	5	5	275	11	11	7	11	12	12	19	672
7:15 AM	9	330	9	6	282	6	12	18	9	17	17	21	736
7:30 AM	13	334	9	8	269	9	8	33	12	17	25	17	754
7:45 AM	9	287	14	15	297	12	21	58	17	13	39	15	797
8:00 AM	10	321	23	11	263	12	15	16	34	15	19	14	753
8:15 AM	9	281	12	11	246	7	12	11	18	15	19	16	657
8:30 AM	11	335	12	7	229	8	12	10	14	13	12	13	676
8:45 AM	19	300	17	12	215	5	10	7	10	12	7	7	621
9:00 AM	14	309	12	9	221	4	5	15	11	5	13	6	624
9:15 AM	8	284	13	7	209	8	8	3	11	16	11	12	590
9:30 AM	7	301	11	8	203	9	8	10	9	10	14	17	607
9:45 AM	14	273	11	11	225	7	14	21	14	12	15	14	631
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	134	3648	148	110	2934	98	136	209	170	157	203	171	8118
APPROACH %'s :	3.41%	92.82%	3.77%	3.50%	93.38%	3.12%	26.41%	40.58%	33.01%	29.57%	38.23%	32.20%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	41	1272	55	40	1111	39	56	125	72	62	100	67	3040
PEAK HR FACTOR :		0.961			0.918			0.659			0.854		0.954

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-004 | Day: Wednesday

TOTALS

City: Los Angeles | Date: 12/11/2013

PM

NS/EW Streets:	Vermont Ave			Vermont Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	0	1	1	0	
3:00 PM	20	230	32	9	245	9	9	9	26	15	17	11	632
3:15 PM	15	232	24	10	248	15	12	27	21	11	28	10	653
3:30 PM	11	277	7	7	274	15	7	15	18	15	16	14	676
3:45 PM	16	275	17	12	241	8	14	23	12	11	22	13	664
4:00 PM	23	283	24	9	266	18	8	33	16	9	18	25	732
4:15 PM	16	250	22	4	258	14	15	21	17	13	24	16	670
4:30 PM	14	295	18	8	263	20	8	19	9	18	14	14	700
4:45 PM	20	292	23	5	256	14	7	26	14	9	30	10	706
5:00 PM	18	300	17	5	253	10	15	22	19	11	22	12	704
5:15 PM	17	271	16	12	264	13	12	17	21	15	28	18	704
5:30 PM	21	304	20	6	259	8	6	45	19	19	41	21	769
5:45 PM	19	294	18	5	244	13	11	36	15	15	37	16	723

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	210	3303	238	92	3071	157	124	293	207	161	297	180	8333
APPROACH %'s :	5.60%	88.06%	6.34%	2.77%	92.50%	4.73%	19.87%	46.96%	33.17%	25.24%	46.55%	28.21%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	75	1169	71	28	1020	44	44	120	74	60	128	67	2900
PEAK HR FACTOR :		0.953			0.945			0.850			0.787		0.943

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-004

Day: Wednesday

CARS

City: Los Angeles

Date: 12/11/2013

AM

NS/EW Streets:	Vermont Ave			Vermont Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	0	1	1	0	
7:00 AM	10	272	5	5	268	11	10	6	11	12	12	18	640
7:15 AM	7	314	9	6	272	6	11	17	9	17	17	20	705
7:30 AM	13	320	8	8	259	9	8	33	12	17	24	17	728
7:45 AM	9	276	14	15	287	12	19	57	17	12	39	15	772
8:00 AM	10	311	22	11	255	12	15	16	34	14	19	14	733
8:15 AM	9	272	12	11	229	6	12	11	17	15	19	16	629
8:30 AM	11	322	12	7	222	8	12	10	14	13	11	13	655
8:45 AM	18	289	17	12	207	5	9	7	10	10	7	7	598
9:00 AM	11	303	12	9	215	4	5	15	11	5	13	6	609
9:15 AM	8	271	13	7	197	8	7	3	11	16	11	12	564
9:30 AM	7	291	11	8	194	9	8	10	9	10	14	17	588
9:45 AM	13	261	10	11	213	6	14	20	14	12	15	14	603

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	126	3502	145	110	2818	96	130	205	169	153	201	169	7824
APPROACH %'s :	3.34%	92.82%	3.84%	3.64%	93.19%	3.17%	25.79%	40.67%	33.53%	29.25%	38.43%	32.31%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	39	1221	53	40	1073	39	53	123	72	60	99	66	2938
PEAK HR FACTOR :		0.957			0.917			0.667			0.852		0.951

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-004 | Day: Wednesday

CARS

City: Los Angeles | Date: 12/11/2013

PM

NS/EW Streets:	Vermont Ave			Vermont Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	0	1	1	0	
3:00 PM	20	221	32	9	236	9	9	9	26	15	17	11	614
3:15 PM	15	224	23	10	240	15	12	27	21	11	28	10	636
3:30 PM	11	269	7	7	266	14	7	15	17	15	16	14	658
3:45 PM	15	266	17	12	227	8	13	23	12	10	22	13	638
4:00 PM	22	276	23	9	252	17	8	32	16	8	17	24	704
4:15 PM	15	243	22	4	241	14	14	20	17	13	24	15	642
4:30 PM	14	287	18	8	255	18	7	19	9	18	14	14	681
4:45 PM	19	283	23	5	246	14	7	26	14	9	30	10	686
5:00 PM	18	292	17	5	247	10	15	22	19	10	22	12	689
5:15 PM	17	264	15	11	255	13	12	17	20	15	28	18	685
5:30 PM	21	298	20	6	250	8	6	44	19	19	41	21	753
5:45 PM	19	288	18	5	241	13	11	35	15	15	37	16	713
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	206	3211	235	91	2956	153	121	289	205	158	296	178	8099
APPROACH %'s :	5.64%	87.92%	6.43%	2.84%	92.38%	4.78%	19.67%	46.99%	33.33%	25.00%	46.84%	28.16%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	75	1142	70	27	993	44	44	118	73	59	128	67	2840
PEAK HR FACTOR :		0.949			0.953			0.851			0.784		0.943

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5664-004
N/S Street: Vermont Ave
E/W Street: 11th St
DATE: 12/11/2013 DAY: Wednesday
CITY: Los Angeles

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	4	6	1	0	2	2	2	7
7:15 AM	8	8	11	11	4	5	9	9
7:30 AM	7	17	8	49	5	12	5	17
7:45 AM	19	22	30	32	4	7	12	10
8:00 AM	10	12	1	11	1	4	10	6
8:15 AM	6	6	3	12	5	7	9	7
8:30 AM	2	0	2	0	2	0	4	1
8:45 AM	1	1	0	4	6	2	4	3
9:00 AM	2	2	2	2	4	3	7	2
9:15 AM	5	0	3	3	6	2	3	4
9:30 AM	1	1	3	1	1	2	9	2
9:45 AM	5	2	2	0	2	2	3	1
TOTALS	70	77	66	125	42	48	77	69

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	2	0	0	0	0
7:30 AM	0	0	0	4	0	0	0	0
7:45 AM	0	0	0	2	0	0	0	0
8:00 AM	0	0	2	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	0	0	2	8	0	0	0	0

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	5	4	17	13	17	4	11	15
3:15 PM	37	16	64	20	5	10	45	30
3:30 PM	14	2	12	7	6	4	20	17
3:45 PM	8	6	11	5	11	3	13	22
4:00 PM	13	3	29	7	5	4	20	14
4:15 PM	8	5	11	5	4	2	8	17
4:30 PM	4	4	12	3	9	4	14	16
4:45 PM	6	1	9	8	12	3	9	8
5:00 PM	7	6	14	12	3	6	19	11
5:15 PM	9	9	9	6	3	4	11	20
5:30 PM	11	4	8	10	8	7	11	9
5:45 PM	7	10	8	8	11	11	6	11
TOTALS	129	70	204	104	94	62	187	190

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	4	2	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	0	0	4	2	0	0	0	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-004

Day: Wednesday

BIKES

City: Los Angeles

Date: 12/11/2013

AM

NS/EW Streets:	Vermont Ave			Vermont Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	0	1	1	0	
7:00 AM		1	0	0	1	0		0		0	1	0	3
7:15 AM		2	0	0	5	0		0		0	0	0	7
7:30 AM		5	0	0	5	0		0		0	3	0	13
7:45 AM		1	0	0	1	1		1		1	0	0	5
8:00 AM		1	1	1	2	0		0		0	0	1	6
8:15 AM		1	0	0	5	0		0		0	1	0	7
8:30 AM		2	0	0	4	0		0		1	0	0	7
8:45 AM		2	0	0	3	0		0		0	0	0	5
9:00 AM		2	0	0	3	0		0		0	0	0	5
9:15 AM		4	0	0	3	0		0		0	0	0	7
9:30 AM		1	0	0	2	0		0		1	0	0	4
9:45 AM		2	0	0	1	0		0		1	0	0	4

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	24	1	1	35	1	0	1	0	4	5	1	73
APPROACH %'s :	0.00%	96.00%	4.00%	2.70%	94.59%	2.70%	0.00%	100.00%	0.00%	40.00%	50.00%	10.00%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	9	1	1	13	1	0	1	0	1	3	1	31
PEAK HR FACTOR :	0.500			0.750			0.250			0.417			0.596

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-004 | Day: Wednesday

BIKES

City: Los Angeles | Date: 12/11/2013

PM

NS/EW Streets:	Vermont Ave			Vermont Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	0	1	1	0	
3:00 PM		2	0	0	3		0	0		0	0		5
3:15 PM		0	0	0	0		0	1		0	0		1
3:30 PM		1	0	0	1		0	0		0	0		2
3:45 PM		2	0	1	0		0	0		0	1		4
4:00 PM		3	0	0	0		0	1		0	1		5
4:15 PM		4	0	0	5		2	0		0	1		12
4:30 PM		4	2	0	8		0	0		0	3		17
4:45 PM		6	1	0	2		0	1		0	0		10
5:00 PM		2	1	0	5		0	0		0	1		9
5:15 PM		5	0	0	1		0	0		0	0		6
5:30 PM		3	0	0	3		1	0		0	0		7
5:45 PM		3	1	1	2		0	0		1	0		8

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	35	5	2	30	0	3	3	0	1	7	0	86
APPROACH %'s :	0.00%	87.50%	12.50%	6.25%	93.75%	0.00%	50.00%	50.00%	0.00%	12.50%	87.50%	0.00%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	13	2	1	11	0	1	0	0	1	1	0	30
PEAK HR FACTOR :	0.750			0.600			0.250			0.500			0.833

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-004 | Day: Wednesday

BUSES

City: Los Angeles | Date: 12/11/2013

AM

NS/EW Streets:	Vermont Ave			Vermont Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	0	1	1	0	
7:00 AM	1	8	0		4		0	0	0	0	0	1	14
7:15 AM	0	7	0		8		1	1	0	0	0	0	17
7:30 AM	0	7	0		6		0	0	0	0	1	0	14
7:45 AM	0	5	0		6		1	1	0	1	0	0	14
8:00 AM	0	5	0		7		0	0	0	0	0	0	12
8:15 AM	0	3	0		9		0	0	1	0	0	0	13
8:30 AM	0	6	0		4		0	0	0	0	0	0	10
8:45 AM	0	4	0		4		0	0	0	2	0	0	10
9:00 AM	3	0	0		5		0	0	0	0	0	0	8
9:15 AM	0	4	0		5		0	0	0	0	0	0	9
9:30 AM	0	4	0		3		0	0	0	0	0	0	7
9:45 AM	0	4	1		3		0	0	0	0	0	0	8

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	57	1	0	64	0	2	2	1	3	1	1	136
APPROACH %'s :	6.45%	91.94%	1.61%	0.00%	100.00%	0.00%	40.00%	40.00%	20.00%	60.00%	20.00%	20.00%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	24	0	0	27	0	2	2	0	1	1	0	57
PEAK HR FACTOR :		0.857			0.844			0.500			0.500		0.838

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-004 | Day: Wednesday

BUSES

City: Los Angeles | Date: 12/11/2013

PM

NS/EW Streets:	Vermont Ave			Vermont Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	0	1	1	0	
3:00 PM	0	7	0		4	0	0	0		0	0	0	11
3:15 PM	0	6	1		5	0	0	0		0	0	0	12
3:30 PM	0	7	0		4	0	0	0		0	0	0	11
3:45 PM	1	9	0		10	0	1	0		1	0	0	22
4:00 PM	1	5	1		11	0	0	1		1	1	1	22
4:15 PM	1	4	0		14	0	1	1		0	0	1	22
4:30 PM	0	4	0		6	1	1	0		0	0	0	12
4:45 PM	1	6	0		7	0	0	0		0	0	0	14
5:00 PM	0	6	0		3	0	0	0		1	0	0	10
5:15 PM	0	5	0		6	0	0	0		0	0	0	11
5:30 PM	0	5	0		7	0	0	1		0	0	0	13
5:45 PM	0	4	0		2	0	0	0		0	0	0	6

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	68	2	0	79	1	3	3	0	3	1	2	166
APPROACH %'s :	5.41%	91.89%	2.70%	0.00%	98.75%	1.25%	50.00%	50.00%	0.00%	50.00%	16.67%	33.33%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	20	0	0	18	0	0	1	0	1	0	0	40
PEAK HR FACTOR :	0.833			0.643			0.250			0.250			0.769

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-004 | Day: Wednesday

HEAVY TRUCKS

City: Los Angeles | Date: 12/11/2013

AM

NS/EW Streets:	Vermont Ave			Vermont Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	0	1	1	0	
7:00 AM	0	13	0		3	0	1	1		0	0	0	18
7:15 AM	2	9	0		2	0	0	0		0	0	1	14
7:30 AM	0	7	1		4	0	0	0		0	0	0	12
7:45 AM	0	6	0		4	0	1	0		0	0	0	11
8:00 AM	0	5	1		1	0	0	0		1	0	0	8
8:15 AM	0	6	0		8	1	0	0		0	0	0	15
8:30 AM	0	7	0		3	0	0	0		0	1	0	11
8:45 AM	1	7	0		4	0	1	0		0	0	0	13
9:00 AM	0	6	0		1	0	0	0		0	0	0	7
9:15 AM	0	9	0		7	0	1	0		0	0	0	17
9:30 AM	0	6	0		6	0	0	0		0	0	0	12
9:45 AM	1	8	0		9	1	0	1		0	0	0	20

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	89	2	0	52	2	4	2	0	1	1	1	158
APPROACH %'s :	4.21%	93.68%	2.11%	0.00%	96.30%	3.70%	66.67%	33.33%	0.00%	33.33%	33.33%	33.33%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	2	27	2	0	11	0	1	0	0	1	0	1	45
PEAK HR FACTOR :	0.705			0.688			0.250			0.500			0.804

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-004

Day: Wednesday

HEAVY TRUCKS

City: Los Angeles

Date: 12/11/2013

PM

NS/EW Streets:	Vermont Ave			Vermont Ave			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	0	1	1	0	
3:00 PM		2	0	0	5	0		0	0				7
3:15 PM		2	0	0	3	0		0	0				5
3:30 PM		1	0	0	4	1		0	1				7
3:45 PM		0	0	0	4	0		0	0				4
4:00 PM		2	0	0	3	1		0	0				6
4:15 PM		3	0	0	3	0		0	0				6
4:30 PM		4	0	0	2	1		0	0				7
4:45 PM		3	0	0	3	0		0	0				6
5:00 PM		2	0	0	3	0		0	0				5
5:15 PM		2	1	1	3	0		0	1				8
5:30 PM		1	0	0	2	0		0	0				3
5:45 PM		2	0	0	1	0		1	0				4

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	24	1	1	36	3	0	1	2	0	0	0	68
APPROACH %'s :	0.00%	96.00%	4.00%	2.50%	90.00%	7.50%	0.00%	33.33%	66.67%				

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	7	1	1	9	0	0	1	1	0	0	0	20
PEAK HR FACTOR :	0.667			0.625			0.500			0.000			0.625

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Vermont Ave

East/West Pico Blvd

Day: Wednesday Date: December 11, 2013 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	102	80	40	50
BIKES	80	98	76	63
BUSES	135	151	67	63

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	382	8.30	328	7.45	287	7.45	217	7.30
PM PK 15 MIN	343	17.30	313	17.15	229	17.00	225	17.30
AM PK HOUR	1391	7.15	1266	7.15	1044	7.30	816	7.15
PM PK HOUR	1320	16.45	1208	17.00	901	16.30	858	17.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	84	1241	38	1363
8-9	58	1265	61	1384
9-10	58	1133	76	1267
15-16	69	1018	76	1163
16-17	60	1126	74	1260
17-18	67	1184	67	1318
TOTAL	396	6967	392	7755

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	73	1110	76	1259
8-9	60	1019	72	1151
9-10	54	842	65	961
15-16	76	1035	82	1193
16-17	63	1031	81	1175
17-18	71	1064	73	1208
TOTAL	397	6101	449	6947

Hours	TOTAL N-S	XING S/L Ped	XING S/L Sch	XING N/L Ped	XING N/L Sch
7-8	2622	125	0	234	3
8-9	2535	124	0	128	0
9-10	2228	107	0	92	3
15-16	2356	230	0	261	4
16-17	2435	235	2	218	4
17-18	2526	254	0	166	2
TOTAL	14702	1075	2	1099	16

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	70	661	122	853
8-9	67	756	77	900
9-10	75	504	64	643
15-16	73	623	105	801
16-17	78	693	85	856
17-18	79	676	116	871
TOTAL	442	3913	569	4924

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	61	693	54	808
8-9	43	589	72	704
9-10	53	452	89	594
15-16	64	502	90	656
16-17	64	616	85	765
17-18	57	699	102	858
TOTAL	342	3551	492	4385

Hours	TOTAL E-W	XING W/L Ped	XING W/L Sch	XING E/L Ped	XING E/L Sch
7-8	1661	124	0	169	3
8-9	1604	96	0	147	2
9-10	1237	83	0	95	1
15-16	1457	142	0	206	2
16-17	1621	181	0	182	5
17-18	1729	133	0	231	3
TOTAL	9309	759	0	1030	16

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Vermont Ave and Pico Blvd , Los Angeles

Date:	12/11/2013
Day:	Wednesday
Project #:	13-5664-005
City:	Los Angeles

N

Vermont Ave

Pico Blvd

Total Peak Hour Summary

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	500 PM

CONTROL

Signalized

Southbound Approach

Lanes	0	2	1	
AM	71	1121	72	1375
NOON	0	0	0	0
PM	73	1064	71	1365

Eastbound Approach

	AM	NOON	PM
	814	0	839

Lanes	AM	NOON	PM
1	77	0	79
2	849	0	676
0	118	0	116

Westbound Approach

AM	NOON	PM	Lanes
66	0	102	0
683	0	699	2
50	0	57	1

AM	NOON	PM
967	0	814

Northbound Approach

AM	1289	60	1232	46
NOON	0	0	0	0
PM	1237	67	1184	67
Lanes		1	2	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg

AM	1264	1375
NOON	0	0
PM	1208	1365

West Leg

AM	NOON	PM
814	0	839
1044	0	871

East Leg

AM	NOON	PM
799	0	858
967	0	814

South Leg

AM	1289	1338
NOON	0	0
PM	1237	1318

Total Volume Per Leg

North Leg

AM	2639
NOON	0
PM	2573

West Leg

AM	NOON	PM
1858	0	1710

East Leg

AM	NOON	PM
1766	0	1672

South Leg

AM	2627
NOON	0
PM	2555

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-005

Day: Wednesday

TOTALS

City: Los Angeles

Date: 12/11/2013

AM

NS/EW Streets:	Vermont Ave			Vermont Ave			Pico Blvd			Pico Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	23	283	9	15	273	21	14	106	23	20	149	13	949
7:15 AM	30	323	11	20	264	16	17	119	28	14	167	14	1023
7:30 AM	14	341	6	17	283	22	20	210	29	15	186	16	1159
7:45 AM	17	294	12	21	290	17	19	226	42	12	191	11	1152
8:00 AM	14	312	17	17	277	22	17	205	25	10	161	19	1096
8:15 AM	15	285	11	17	271	10	21	208	22	13	145	20	1038
8:30 AM	15	348	19	13	245	23	12	174	15	9	148	15	1036
8:45 AM	14	320	14	13	226	17	17	169	15	11	135	18	969
9:00 AM	14	294	23	11	220	14	15	164	27	14	127	24	947
9:15 AM	12	276	16	13	207	17	12	129	12	10	110	29	843
9:30 AM	17	293	18	12	209	18	23	100	12	16	117	25	860
9:45 AM	15	270	19	18	206	16	25	111	13	13	98	11	815

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	200	3639	175	187	2971	213	212	1921	263	157	1734	215	11887
APPROACH %'s :	4.98%	90.66%	4.36%	5.55%	88.13%	6.32%	8.85%	80.18%	10.98%	7.45%	82.34%	10.21%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	60	1232	46	72	1121	71	77	849	118	50	683	66	4445
PEAK HR FACTOR :		0.927			0.963			0.909			0.921		0.959

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-005 | Day: Wednesday

TOTALS

City: Los Angeles | Date: 12/11/2013

PM

NS/EW Streets:	Vermont Ave			Vermont Ave			Pico Blvd			Pico Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	14	238	28	21	253	23	19	164	27	14	137	23	961
3:15 PM	19	241	18	23	264	17	17	162	25	18	125	27	956
3:30 PM	18	255	11	16	278	16	19	157	28	17	130	22	967
3:45 PM	18	284	19	16	240	26	18	140	25	15	110	18	929
4:00 PM	15	281	30	10	271	23	22	171	12	18	159	19	1031
4:15 PM	14	266	15	18	257	14	14	157	24	18	141	29	967
4:30 PM	12	283	13	18	256	23	20	181	27	13	155	19	1020
4:45 PM	19	296	16	17	247	21	22	184	22	15	161	18	1038
5:00 PM	16	302	21	15	261	26	21	174	34	12	162	31	1075
5:15 PM	15	279	13	23	279	11	16	177	23	12	178	19	1045
5:30 PM	20	303	20	19	261	19	22	171	28	16	185	24	1088
5:45 PM	16	300	13	14	263	17	20	154	31	17	174	28	1047

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	196	3328	217	210	3130	236	230	1992	306	185	1817	277	12124
APPROACH %'s :	5.24%	88.96%	5.80%	5.87%	87.53%	6.60%	9.10%	78.80%	12.10%	8.12%	79.73%	12.15%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	67	1184	67	71	1064	73	79	676	116	57	699	102	4255
PEAK HR FACTOR :		0.961			0.965			0.951			0.953		0.978

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-005 | Day: Wednesday

CARS

City: Los Angeles | Date: 12/11/2013

AM

NS/EW Streets:	Vermont Ave			Vermont Ave			Pico Blvd			Pico Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	23	263	9	15	267	20	12	102	23	20	145	13	912
7:15 AM	30	307	11	20	255	16	17	115	28	12	162	14	987
7:30 AM	12	328	6	17	275	22	20	207	29	15	182	15	1128
7:45 AM	17	284	11	21	278	17	19	218	42	11	186	11	1115
8:00 AM	14	302	17	17	268	22	17	204	24	9	157	19	1070
8:15 AM	14	279	11	17	256	10	21	203	22	10	139	18	1000
8:30 AM	14	337	18	13	238	22	12	170	15	9	145	14	1007
8:45 AM	14	310	14	13	217	17	17	166	15	11	133	17	944
9:00 AM	13	287	23	11	214	14	15	161	27	14	123	24	926
9:15 AM	10	265	16	13	196	16	11	125	12	10	102	27	803
9:30 AM	17	285	17	12	201	18	22	97	12	15	111	24	831
9:45 AM	15	259	18	15	194	16	24	107	13	12	95	10	778

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	193	3506	171	184	2859	210	207	1875	262	148	1680	206	11501
APPROACH %'s :	4.99%	90.59%	4.42%	5.66%	87.89%	6.46%	8.83%	79.99%	11.18%	7.28%	82.60%	10.13%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	57	1193	45	72	1077	71	77	832	117	45	664	63	4313
PEAK HR FACTOR :		0.936			0.965			0.919			0.910		0.956

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-005

Day: Wednesday

CARS

City: Los Angeles

Date: 12/11/2013

PM

NS/EW Streets:	Vermont Ave			Vermont Ave			Pico Blvd			Pico Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	14	230	28	21	244	23	19	160	27	14	136	23	939
3:15 PM	19	231	18	23	255	17	17	158	25	18	122	27	930
3:30 PM	18	247	11	16	271	15	19	153	28	16	126	22	942
3:45 PM	17	276	19	15	228	25	16	134	23	15	105	18	891
4:00 PM	15	271	29	10	257	23	22	168	12	17	157	19	1000
4:15 PM	14	258	15	16	244	14	14	153	24	18	138	29	937
4:30 PM	12	276	13	17	247	23	20	174	27	13	153	18	993
4:45 PM	19	288	16	17	240	20	22	179	22	14	159	18	1014
5:00 PM	16	296	21	15	254	26	21	171	33	12	159	31	1055
5:15 PM	15	272	13	23	271	11	16	174	23	12	174	19	1023
5:30 PM	20	298	20	19	253	19	22	166	28	15	182	24	1066
5:45 PM	16	294	13	14	261	16	20	152	31	17	171	27	1032

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	195	3237	216	206	3025	232	228	1942	303	181	1782	275	11822
APPROACH %'s :	5.35%	88.73%	5.92%	5.95%	87.35%	6.70%	9.22%	78.53%	12.25%	8.09%	79.62%	12.29%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	67	1160	67	71	1039	72	79	663	115	56	686	101	4176
PEAK HR FACTOR :		0.957			0.969			0.952			0.954		0.979

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5664-005
N/S Street: Vermont Ave
E/W Street: Pico Blvd
DATE: 12/11/2013 DAY: Wednesday
CITY: Los Angeles

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	12	10	14	12	20	18	11	8
7:15 AM	22	18	17	10	21	8	22	8
7:30 AM	21	68	10	27	42	9	27	4
7:45 AM	24	59	14	21	42	9	27	17
8:00 AM	14	27	23	8	30	19	10	19
8:15 AM	24	15	15	19	27	21	15	6
8:30 AM	14	8	12	12	13	14	11	11
8:45 AM	10	16	21	14	17	6	14	10
9:00 AM	11	6	15	9	17	12	7	11
9:15 AM	11	14	7	11	10	4	12	9
9:30 AM	11	11	6	16	14	12	9	7
9:45 AM	18	10	22	21	10	16	23	5
TOTALS	192	262	176	180	263	148	188	115

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	1	0	0	0	2	0	0
7:15 AM	1	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	1	0	0	0	1	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	1	1	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	1	0	0	0
9:45 AM	0	3	0	0	0	0	0	0
TOTALS	2	4	0	0	3	3	0	0

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	14	26	30	21	14	16	10	29
3:15 PM	97	20	55	25	30	48	10	38
3:30 PM	26	20	18	27	37	17	12	11
3:45 PM	32	26	31	23	26	18	20	12
4:00 PM	29	21	29	27	28	19	31	19
4:15 PM	46	20	40	14	24	18	24	22
4:30 PM	42	16	44	27	19	23	30	22
4:45 PM	27	17	29	25	31	20	23	10
5:00 PM	19	14	38	21	33	27	19	11
5:15 PM	25	16	42	22	36	23	22	17
5:30 PM	26	16	33	31	27	23	13	17
5:45 PM	21	29	34	33	36	26	15	19
TOTALS	404	241	423	296	341	278	229	227

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	1	2	0	0	0	0	0	0
3:15 PM	0	1	0	0	0	0	0	0
3:30 PM	0	0	0	0	1	0	0	0
3:45 PM	0	0	0	0	0	1	0	0
4:00 PM	0	0	1	0	1	0	0	0
4:15 PM	2	1	0	0	0	2	0	0
4:30 PM	0	0	0	1	1	1	0	0
4:45 PM	1	0	0	0	0	0	0	0
5:00 PM	1	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	1	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	3	0	0
TOTALS	6	4	1	1	3	7	0	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-005 | Day: Wednesday

BIKES

City: Los Angeles | Date: 12/11/2013

AM

NS/EW Streets:	Vermont Ave			Vermont Ave			Pico Blvd			Pico Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	0	2	0	1	4	0	0	2	0	0	0	1	10
7:15 AM	0	1	0	1	1	2	0	0	1	0	2	0	8
7:30 AM	0	4	0	0	3	1	0	3	1	0	1	1	14
7:45 AM	2	1	0	0	2	1	1	3	0	0	1	0	11
8:00 AM	1	2	0	0	0	2	0	3	1	1	5	0	15
8:15 AM	1	2	0	1	3	0	0	2	1	0	2	1	13
8:30 AM	0	3	0	1	5	0	0	0	0	0	2	0	11
8:45 AM	0	3	3	1	2	0	1	2	0	1	0	0	13
9:00 AM	0	3	0	1	3	0	1	3	0	0	0	0	11
9:15 AM	0	4	0	0	2	0	1	1	0	0	1	0	9
9:30 AM	0	4	0	0	4	1	0	1	1	1	0	0	12
9:45 AM	1	2	0	0	3	0	0	2	0	0	2	0	10

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	5	31	3	6	32	7	4	22	5	3	16	3	137
APPROACH %'s :	12.82%	79.49%	7.69%	13.33%	71.11%	15.56%	12.90%	70.97%	16.13%	13.64%	72.73%	13.64%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	4	9	0	1	8	4	1	11	3	1	9	2	53
PEAK HR FACTOR :	0.813			0.813			0.938			0.500			0.883

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-005

Day: Wednesday

BIKES

City: Los Angeles

Date: 12/11/2013

PM

NS/EW Streets:	Vermont Ave			Vermont Ave			Pico Blvd			Pico Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	0	2	0	0	0	1	0	0	0	0	1	1	5
3:15 PM	0	2	0	3	5	2	0	4	1	0	3	0	20
3:30 PM	0	1	0	0	1	0	0	1	0	0	1	0	4
3:45 PM	0	1	0	1	2	0	0	2	0	0	4	0	10
4:00 PM	0	2	0	0	2	0	0	3	0	0	3	0	10
4:15 PM	0	1	0	1	3	1	2	2	0	1	4	1	16
4:30 PM	1	3	1	0	4	1	2	5	0	0	4	1	22
4:45 PM	1	7	0	1	4	2	2	6	0	0	3	0	26
5:00 PM	0	5	0	0	6	0	1	4	0	0	2	0	18
5:15 PM	0	5	0	3	2	1	2	2	0	0	0	0	15
5:30 PM	0	5	0	1	4	0	0	2	0	3	2	0	17
5:45 PM	1	3	0	0	2	0	0	4	0	1	5	1	17

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	37	1	10	35	8	9	35	1	5	32	4	180
APPROACH %'s :	7.32%	90.24%	2.44%	18.87%	66.04%	15.09%	20.00%	77.78%	2.22%	12.20%	78.05%	9.76%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	1	18	0	4	14	1	3	12	0	4	9	1	67
PEAK HR FACTOR :		0.950			0.792			0.750			0.500		0.931

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-005 | Day: Wednesday

BUSES

City: Los Angeles | Date: 12/11/2013

AM

NS/EW Streets:	Vermont Ave			Vermont Ave			Pico Blvd			Pico Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	0	9	0		4	1		3		0	4	0	21
7:15 AM	0	7	0		7	0		4		1	3	0	22
7:30 AM	1	6	0		6	0		2		0	3	0	18
7:45 AM	0	5	1		8	0		6		1	3	0	24
8:00 AM	0	5	0		7	0		1		0	3	0	16
8:15 AM	0	3	0		9	0		4		2	2	0	20
8:30 AM	0	7	0		5	0		2		0	1	0	15
8:45 AM	0	3	0		6	0		1		0	0	0	10
9:00 AM	0	3	0		5	0		3		0	1	0	12
9:15 AM	0	3	0		4	0		2		0	2	1	12
9:30 AM	0	4	0		3	0		0		0	2	0	9
9:45 AM	0	4	0		4	0		3		0	2	1	14

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	59	1	0	68	1	0	31	0	4	26	2	193
APPROACH %'s :	1.64%	96.72%	1.64%	0.00%	98.55%	1.45%	0.00%	100.00%	0.00%	12.50%	81.25%	6.25%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	1	19	1	0	30	0	0	13	0	3	11	0	78
PEAK HR FACTOR :		0.750			0.833			0.542			0.875		0.813

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-005 | Day: Wednesday

BUSES

City: Los Angeles | Date: 12/11/2013

PM

NS/EW Streets:	Vermont Ave			Vermont Ave			Pico Blvd			Pico Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	0	7	0	0	4		0	3	0	0	1		15
3:15 PM	0	7	0	0	5		0	3	0	0	3		18
3:30 PM	0	7	0	0	4		0	3	0	1	3		18
3:45 PM	1	8	0	1	10		2	1	1	0	3		27
4:00 PM	0	8	1	0	12		0	2	0	1	2		26
4:15 PM	0	5	0	2	10		0	3	0	0	3		23
4:30 PM	0	5	0	0	8		0	4	0	0	2		19
4:45 PM	0	6	0	0	6		0	4	0	0	2		18
5:00 PM	0	5	0	0	4		0	3	0	0	3		15
5:15 PM	0	5	0	0	7		0	2	0	0	3		17
5:30 PM	0	5	0	0	7		0	3	0	0	2		17
5:45 PM	0	4	0	0	2		0	2	0	0	2		10

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	72	1	3	79	0	2	33	1	2	29	0	223
APPROACH %'s :	1.35%	97.30%	1.35%	3.66%	96.34%	0.00%	5.56%	91.67%	2.78%	6.45%	93.55%	0.00%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	19	0	0	20	0	0	10	0	0	10	0	59
PEAK HR FACTOR :	0.950			0.714			0.833			0.833			0.868

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-005 | Day: Wednesday

HEAVY TRUCKS

City: Los Angeles | Date: 12/11/2013

AM

NS/EW Streets:	Vermont Ave			Vermont Ave			Pico Blvd			Pico Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	0	11	0	0	2	0	2	1	0	0	0	0	16
7:15 AM	0	9	0	0	2	0	0	0	0	1	2	0	14
7:30 AM	1	7	0	0	2	0	0	1	0	0	1	1	13
7:45 AM	0	5	0	0	4	0	0	2	0	0	2	0	13
8:00 AM	0	5	0	0	2	0	0	0	1	1	1	0	10
8:15 AM	1	3	0	0	6	0	0	1	0	1	4	2	18
8:30 AM	1	4	1	0	2	1	0	2	0	0	2	1	14
8:45 AM	0	7	0	0	3	0	0	2	0	0	2	1	15
9:00 AM	1	4	0	0	1	0	0	0	0	0	3	0	9
9:15 AM	2	8	0	0	7	1	1	2	0	0	6	1	28
9:30 AM	0	4	1	0	5	0	1	3	0	1	4	1	20
9:45 AM	0	7	1	3	8	0	1	1	0	1	1	0	23

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	6	74	3	3	44	2	5	15	1	5	28	7	193
APPROACH %'s :	7.23%	89.16%	3.61%	6.12%	89.80%	4.08%	23.81%	71.43%	4.76%	12.50%	70.00%	17.50%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	2	20	0	0	14	0	0	4	1	2	8	3	54
PEAK HR FACTOR :	0.688			0.583			0.625			0.464			0.750

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-005

Day: Wednesday

HEAVY TRUCKS

City: Los Angeles

Date: 12/11/2013

PM

NS/EW Streets:	Vermont Ave			Vermont Ave			Pico Blvd			Pico Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM		1		0	5	0		1	0	0	0	0	7
3:15 PM		3		0	4	0		1	0	0	0	0	8
3:30 PM		1		0	3	1		1	0	0	1	0	7
3:45 PM		0		0	2	1		5	1	0	2	0	11
4:00 PM		2		0	2	0		1	0	0	0	0	5
4:15 PM		3		0	3	0		1	0	0	0	0	7
4:30 PM		2		1	1	0		3	0	0	0	1	8
4:45 PM		2		0	1	1		1	0	1	0	0	6
5:00 PM		1		0	3	0		0	1	0	0	0	5
5:15 PM		2		0	1	0		1	0	0	1	0	5
5:30 PM		0		0	1	0		2	0	1	1	0	5
5:45 PM		2		0	0	1		0	0	0	1	1	5

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	19	0	1	26	4	0	17	2	2	6	2	79
APPROACH %'s :	0.00%	100.00%	0.00%	3.23%	83.87%	12.90%	0.00%	89.47%	10.53%	20.00%	60.00%	20.00%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	5	0	0	5	1	0	3	1	1	3	1	20
PEAK HR FACTOR :	0.625			0.500			0.500			0.625			1.000

CONTROL : Signalized

APPENDIX C
LADOT CMA Calculation Worksheets

LADOT
Moving Los Angeles Forward

Level of Service Workheet
(Circular 212 Method)

I/S #:	North-South Street:	Berendo St	Year of Count:	2014	Ambient Growth: (%):	1	Conducted by:	KOA Corp	Date:	4/22/14
1	East-West Street:	Olympic Blvd	Projection Year:	2016	Peak Hour:	AM	Reviewed by:	IDH	Project:	MORCS Charter School

	Existing Condition	Existing Plus Project	Future Condition W/O Project	Future Condition W/ Project	Future W/ Project W/ Mitigation
No. of Phases	2	2	2	2	2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?	0	0	0	0	0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0
ATSAC-1 or ATSAC+ATCS-2?	1	1	2	2	2
Override Capacity	0	0	0	0	0

	MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	63	0	63	3	66	66	0	64	0	64	3	67	0	67	0	67	0	67
	Left-Through		1							1				1				1	
	Through	72	0	**135**	4	76	**142**	0	73	0	**137**	4	77	0	**144**	0	77	0	**144**
	Through-Right		0							0				0				0	
	Right	34	1	16	3	37	19	0	35	1	16	3	38	1	19	0	38	1	19
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
SOUTHBOUND	Left	25	0	**25**	0	25	**25**	4	30	0	**30**	0	30	0	**30**	0	30	0	**30**
	Left-Through		1							1				1				1	
	Through	44	0	69	0	44	69	0	45	0	75	0	45	0	75	0	45	0	75
	Through-Right		0							0				0				0	
	Right	20	1	8	5	25	13	2	22	1	8	5	27	1	13	0	27	1	13
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
EASTBOUND	Left	24	1	24	0	24	24	5	29	1	29	0	29	1	29	0	29	1	29
	Left-Through		0							0				0				0	
	Through	1673	2	**571**	0	1673	**571**	90	1797	2	**612**	0	1797	2	**612**	0	1797	2	**612**
	Through-Right		1							1				1				1	
	Right	39	0	39	0	39	39	0	40	0	40	0	40	0	40	0	40	0	40
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
WESTBOUND	Left	37	1	**37**	0	37	**37**	0	38	1	**38**	0	38	1	**38**	0	38	1	**38**
	Left-Through		0							0				0				0	
	Through	1379	2	469	17	1396	475	94	1501	2	515	17	1518	2	520	0	1518	2	520
	Through-Right		1							1				1				1	
	Right	29	0	29	0	29	29	13	43	0	43	0	43	0	43	0	43	0	43
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	

	Existing Condition	Existing Plus Project	Future Condition W/O Project	Future Condition W/ Project	Future W/ Project W/ Mitigation
CRITICAL VOLUMES — *North-South:*	160	167	167	174	174
East-West:	608	608	650	650	650
SUM:	768	775	817	824	824
VOLUME/CAPACITY (*V/C*) RATIO:	0.512	0.517	0.545	0.549	0.549
V/C LESS ATSAC/ATCS ADJUSTMENT:	0.442	0.447	0.445	0.449	0.449
LEVEL OF SERVICE (LOS):	A	A	A	A	A

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in *v/c* due to project:	0.004	$\Delta v/c$ after mitigation:	0.004
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Workheet
(Circular 212 Method)

LADOT Moving Los Angeles Forward

I/S #:	North-South Street:	Berendo St	Year of Count:	2014	Ambient Growth: (%):	1	Conducted by:	KOA Corp	Date:	4/22/14
1	East-West Street:	Olympic Blvd	Projection Year:	2016	Peak Hour:	PM	Reviewed by:	IDH	Project:	MORCS Charter School

	Existing Condition	Existing Plus Project	Future Condition W/O Project	Future Condition W/ Project	Future W/ Project W/ Mitigation
No. of Phases	2	2	2	2	2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?	0	0	0	0	0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0
ATSAC-1 or ATSAC+ATCS-2?	1	1	2	2	2
Override Capacity	0	0	0	0	0

	MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	112	0	112	1	113	113	0	114	0	114	1	115	0	115	0	115	0	115
	Left-Through		1							1				1				1	
	Through	81	0	**193**	1	82	**195**	0	83	0	**197**	1	84	0	**199**	0	84	0	**199**
	Through-Right		0							0				0				0	
	Right	45	1	27	1	46	28	0	46	1	27	1	47	1	28	0	47	1	28
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
SOUTHBOUND	Left	44	0	**44**	0	44	**44**	5	50	0	**50**	0	50	0	**50**	0	50	0	**50**
	Left-Through		1							1				1				1	
	Through	75	0	119	0	75	119	0	77	0	127	0	77	0	127	0	77	0	127
	Through-Right		0							0				0				0	
	Right	29	1	10	1	30	11	2	32	1	12	1	33	1	13	0	33	1	13
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
EASTBOUND	Left	39	1	39	0	39	39	1	41	1	41	0	41	1	41	0	41	1	41
	Left-Through		0							0				0				0	
	Through	1724	2	**591**	0	1724	**591**	204	1963	2	**671**	0	1963	2	**671**	0	1963	2	**671**
	Through-Right		1							1				1				1	
	Right	50	0	50	0	50	50	0	51	0	51	0	51	0	51	0	51	0	51
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
WESTBOUND	Left	37	1	**37**	0	37	**37**	0	38	1	**38**	0	38	1	**38**	0	38	1	**38**
	Left-Through		0							0				0				0	
	Through	1395	2	479	4	1399	480	114	1537	2	527	4	1541	2	528	0	1541	2	528
	Through-Right		1							1				1				1	
	Right	41	0	41	0	41	41	2	44	0	44	0	44	0	44	0	44	0	44
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	

		Existing Condition	Existing Plus Project	Future Condition W/O Project	Future Condition W/ Project	Future W/ Project W/ Mitigation
CRITICAL VOLUMES	*North-South:*	237	239	247	249	249
	East-West:	628	628	709	709	709
	SUM:	865	867	956	958	958
VOLUME/CAPACITY (*V/C*) RATIO:		0.577	0.578	0.637	0.639	0.639
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.507	0.508	0.537	0.539	0.539
LEVEL OF SERVICE (LOS):		A	A	A	A	A

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in *v/c* due to project:	0.002	Δ*v/c* after mitigation:	0.002
Significant impacted?	NO	Fully mitigated?	N/A

Moving Los Angeles Forward

Level of Service Workheet
(Circular 212 Method)

I/S #:	North-South Street:	Vermont Ave	Year of Count:	2014	Ambient Growth: (%):	1	Conducted by:	KOA Corp	Date:	4/22/14
2	East-West Street:	Olympic Blvd	Projection Year:	2016	Peak Hour:	AM	Reviewed by:	IDH	Project:	MORCS Charter School

	EXISTING CONDITION	EXISTING PLUS PROJECT	FUTURE CONDITION W/O PROJECT	FUTURE CONDITION W/ PROJECT	FUTURE W/ PROJECT W/ MITIGATION
No. of Phases	4	4	4	4	4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?	0	0	0	0	0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 3 SB-- 0 EB-- 0 WB-- 0	NB-- 3 SB-- 0 EB-- 0 WB-- 0	NB-- 3 SB-- 0 EB-- 0 WB-- 0	NB-- 3 SB-- 0 EB-- 0 WB-- 0	NB-- 3 SB-- 0 EB-- 0 WB-- 0
ATSAC-1 or ATSAC+ATCS-2?	1	1	2	2	2
Override Capacity	0	0	0	0	0

	MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	108	1	**108**	0	108	**108**	22	132	1	**132**	0	132	1	**132**	0	132	1	**132**
	Left-Through		0							0				0				0	
	Through	1210	2	**605**	7	1217	**609**	76	1310	2	655	7	1317	2	659	0	1317	2	659
	Through-Right		0							0				0				0	
	Right	65	1	2	3	68	5	0	66	1	2	3	69	1	5	0	69	1	5
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
SOUTHBOUND	Left	116	1	**116**	0	116	**116**	20	138	1	138	0	138	1	138	0	138	1	138
	Left-Through		0							0				0				0	
	Through	1081	1	583	0	1081	588	128	1231	1	**679**	0	1231	1	**684**	0	1231	1	**684**
	Through-Right		1							1				1				1	
	Right	85	0	85	9	94	94	40	127	0	127	9	136	0	136	0	136	0	136
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
EASTBOUND	Left	82	1	82	0	82	82	23	107	1	107	0	107	1	107	0	107	1	107
	Left-Through		0							0				0				0	
	Through	1533	2	**547**	3	1536	**548**	50	1614	2	**582**	3	1617	2	**583**	0	1617	2	**583**
	Through-Right		1							1				1				1	
	Right	108	0	108	0	108	108	22	132	0	132	0	132	0	132	0	132	0	132
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
WESTBOUND	Left	63	1	**63**	0	63	**63**	0	64	1	**64**	0	64	1	**64**	0	64	1	**64**
	Left-Through		0							0				0				0	
	Through	1319	2	456	8	1327	459	44	1390	2	484	8	1398	2	487	0	1398	2	487
	Through-Right		1							1				1				1	
	Right	49	0	49	0	49	49	12	62	0	62	0	62	0	62	0	62	0	62
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	

		EXISTING CONDITION	EXISTING PLUS PROJECT	FUTURE CONDITION W/O PROJECT	FUTURE CONDITION W/ PROJECT	FUTURE W/ PROJECT W/ MITIGATION
CRITICAL VOLUMES	North-South:	721	725	811	816	816
	East-West:	610	611	646	647	647
	SUM:	1331	1336	1457	1463	1463
VOLUME/CAPACITY (V/C) RATIO:		0.968	0.972	1.060	1.064	1.064
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.898	0.902	0.960	0.964	0.964
LEVEL OF SERVICE (LOS):		D	E	E	E	E

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in *v/c* due to project:	0.004	Δ*v/c* after mitigation:	0.004
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Workheet
(Circular 212 Method)

I/S #:	North-South Street:	Vermont Ave	Year of Count:	2014	Ambient Growth: (%):	1	Conducted by:	KOA Corp	Date:	4/22/14
2	East-West Street:	Olympic Blvd	Projection Year:	2016	Peak Hour:	PM	Reviewed by:	IDH	Project:	MORCS Charter School

	Existing Condition	Existing Plus Project	Future Condition W/O Project	Future Condition W/ Project	Future W/ Project W/ Mitigation
No. of Phases	4	4	4	4	4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?	0	0	0	0	0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 3 SB-- 0 EB-- 0 WB-- 0	NB-- 3 SB-- 0 EB-- 0 WB-- 0	NB-- 3 SB-- 0 EB-- 0 WB-- 0	NB-- 3 SB-- 0 EB-- 0 WB-- 0	NB-- 3 SB-- 0 EB-- 0 WB-- 0
ATSAC-1 or ATSAC+ATCS-2?	1	1	2	2	2
Override Capacity	0	0	0	0	0

	MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	125	1	**125**	0	125	**125**	29	157	1	157	0	157	1	157	0	157	1	157
	Left-Through		0							0				0				0	
	Through	1053	2	527	2	1055	528	161	1235	2	**618**	2	1237	2	**619**	0	1237	2	**619**
	Through-Right		0							0				0				0	
	Right	84	1	3	1	85	4	0	86	1	3	1	87	1	4	0	87	1	4
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
SOUTHBOUND	Left	115	1	115	0	115	115	16	133	1	**133**	0	133	1	**133**	0	133	1	**133**
	Left-Through		0							0				0				0	
	Through	920	1	**518**	0	920	**519**	92	1030	1	587	0	1030	1	588	0	1030	1	588
	Through-Right		1							1				1				1	
	Right	116	0	116	2	118	118	25	143	0	143	2	145	0	145	0	145	0	145
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
EASTBOUND	Left	157	1	157	0	157	157	40	200	1	200	0	200	1	200	0	200	1	200
	Left-Through		0							0				0				0	
	Through	1596	2	**561**	1	1597	**561**	146	1774	2	**629**	1	1775	2	**629**	0	1775	2	**629**
	Through-Right		1							1				1				1	
	Right	87	0	87	0	87	87	23	112	0	112	0	112	0	112	0	112	0	112
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
WESTBOUND	Left	81	1	**81**	0	81	**81**	0	83	1	**83**	0	83	1	**83**	0	83	1	**83**
	Left-Through		0							0				0				0	
	Through	1249	2	448	2	1251	448	63	1337	2	487	2	1339	2	488	0	1339	2	488
	Through-Right		1							1				1				1	
	Right	94	0	94	0	94	94	28	124	0	124	0	124	0	124	0	124	0	124
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	

	Existing Condition	Existing Plus Project	Future Condition W/O Project	Future Condition W/ Project	Future W/ Project W/ Mitigation
CRITICAL VOLUMES — *North-South:*	643	644	751	752	752
East-West:	642	642	712	712	712
SUM:	1285	1286	1463	1464	1464
VOLUME/CAPACITY (*V/C*) RATIO:	0.935	0.935	1.064	1.065	1.065
V/C LESS ATSAC/ATCS ADJUSTMENT:	0.865	0.865	0.964	0.965	0.965
LEVEL OF SERVICE (LOS):	D	D	E	E	E

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in *v/c* due to project:	0.001	Δ*v/c* after mitigation:	0.001
Significant impacted?	NO	Fully mitigated?	N/A

LADOT
Moving Los Angeles Forward

Level of Service Workheet
(Circular 212 Method)

I/S #:	North-South Street:	Normandie Ave	Year of Count:	2014	Ambient Growth: (%):	1	Conducted by:	KOA Corp	Date:	4/22/14
3	East-West Street:	11th St	Projection Year:	2016	Peak Hour:	AM	Reviewed by:	IDH	Project:	MORCS Charter School

	Existing Condition	Existing Plus Project	Future Condition W/O Project	Future Condition W/ Project	Future W/ Project W/ Mitigation
No. of Phases	2	2	2	2	2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?	0	0	0	0	0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0
ATSAC-1 or ATSAC+ATCS-2?	1	1	2	2	2
Override Capacity	0	0	0	0	0

	MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	19	0	**19**	0	19	**19**	0	19	0	**19**	0	19	0	**19**	0	19	0	**19**
	Left-Through		1							1				1				1	
	Through	975	0	534	2	977	536	106	1101	0	597	2	1103	0	599	0	1103	0	599
	Through-Right		1							1				1				1	
	Right	16	0	534	3	19	536	0	16	0	597	3	19	0	599	0	19	0	599
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
SOUTHBOUND	Left	15	0	15	5	20	20	0	15	0	15	5	20	0	20	0	20	0	20
	Left-Through		0							0				0				0	
	Through	653	0	**687**	0	653	**692**	169	835	0	**869**	0	835	0	**874**	0	835	0	**874**
	Through-Right		0							0				0				0	
	Right	19	0	0	0	19	0	0	19	0	0	0	19	0	0	0	19	0	0
	Left-Through-Right		1							1				1				1	
	Left-Right		0							0				0				0	
EASTBOUND	Left	16	0	16	0	16	16	0	16	0	16	0	16	0	16	0	16	0	16
	Left-Through		1							1				1				1	
	Through	54	0	**70**	1	55	**71**	0	55	0	**71**	1	56	0	**72**	0	56	0	**72**
	Through-Right		0							0				0				0	
	Right	29	1	29	0	29	29	0	30	1	30	0	30	1	30	0	30	1	30
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
WESTBOUND	Left	22	0	**22**	0	22	**22**	0	22	0	**22**	0	22	0	**22**	0	22	0	**22**
	Left-Through		1							1				1				1	
	Through	51	0	73	0	51	73	0	52	0	74	0	52	0	74	0	52	0	74
	Through-Right		0							0				0				0	
	Right	50	1	50	0	50	50	0	51	1	51	0	51	1	51	0	51	1	51
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	

	Existing Condition	Existing Plus Project	Future Condition W/O Project	Future Condition W/ Project	Future W/ Project W/ Mitigation
CRITICAL VOLUMES — *North-South:*	706	711	888	893	893
East-West:	92	93	93	94	94
SUM:	798	804	981	987	987
VOLUME/CAPACITY (*V/C*) RATIO:	0.532	0.536	0.654	0.658	0.658
V/C LESS ATSAC/ATCS ADJUSTMENT:	0.462	0.466	0.554	0.558	0.558
LEVEL OF SERVICE (LOS):	A	A	A	A	A

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in *v/c* due to project:	0.004	$\Delta v/c$ after mitigation:	0.004
Significant impacted?	NO	Fully mitigated?	N/A

LADOT
Moving Los Angeles Forward

Level of Service Workheet
(Circular 212 Method)

I/S #:	North-South Street:	Normandie Ave	Year of Count:	2014	Ambient Growth: (%):	1	Conducted by:	KOA Corp	Date:	4/22/14
3	East-West Street:	11th St	Projection Year:	2016	Peak Hour:	PM	Reviewed by:	IDH	Project:	MORCS Charter School

No. of Phases				2				2				2				2				2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0				0				0				0				0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB--	0	SB--	0	NB--	0	SB--	0	NB--	0	SB--	0	NB--	0	SB--	0	NB--	0	SB--	0
	EB--	0	WB--	0	EB--	0	WB--	0	EB--	0	WB--	0	EB--	0	WB--	0	EB--	0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				1				1				2				2				2
Override Capacity				0				0				0				0				0

	MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	17	0	17	0	17	17	0	17	0	17	0	17	0	17	0	17	0	17
	Left-Through		0							0				0				0	
	Through	771	0	**819**	1	772	**821**	223	1009	0	**1058**	1	1010	0	**1060**	0	1010	0	**1060**
	Through-Right		0							0				0				0	
	Right	31	0	0	1	32	0	0	32	0	0	1	33	0	0	0	33	0	0
	Left-Through-Right		1							1				1				1	
	Left-Right		0							0				0				0	
SOUTHBOUND	Left	28	0	**28**	1	29	**29**	0	29	0	**29**	1	30	0	**30**	0	30	0	**30**
	Left-Through		1							1				1				1	
	Through	894	0	518	0	894	520	140	1052	0	629	0	1052	0	632	0	1052	0	632
	Through-Right		1							1				1				1	
	Right	30	0	518	0	30	520	0	31	0	629	0	31	0	632	0	31	0	632
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
EASTBOUND	Left	38	0	**38**	0	38	**38**	0	39	0	**39**	0	39	0	**39**	0	39	0	**39**
	Left-Through		1							1				1				1	
	Through	100	0	138	0	100	138	0	102	0	141	0	102	0	141	0	102	0	141
	Through-Right		0							0				0				0	
	Right	29	1	29	0	29	29	0	30	1	30	0	30	1	30	0	30	1	30
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
WESTBOUND	Left	28	0	28	0	28	28	0	29	0	29	0	29	0	29	0	29	0	29
	Left-Through		1							1				1				1	
	Through	118	0	**146**	0	118	**146**	0	120	0	**149**	0	120	0	**149**	0	120	0	**149**
	Through-Right		0							0				0				0	
	Right	81	1	81	0	81	81	0	83	1	83	0	83	1	83	0	83	1	83
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	

	EXISTING CONDITION		EXISTING PLUS PROJECT		FUTURE CONDITION W/O PROJECT		FUTURE CONDITION W/ PROJECT		FUTURE W/ PROJECT W/ MITIGATION	
CRITICAL VOLUMES	North-South:	847	North-South:	850	North-South:	1087	North-South:	1090	North-South:	1090
	East-West:	184	East-West:	184	East-West:	188	East-West:	188	East-West:	188
	SUM:	1031	SUM:	1034	SUM:	1275	SUM:	1278	SUM:	1278
VOLUME/CAPACITY (V/C) RATIO:		0.687		0.689		0.850		0.852		0.852
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.617		0.619		0.750		0.752		0.752
LEVEL OF SERVICE (LOS):		B		B		C		C		C

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.002	Δv/c after mitigation:	0.002
Significant impacted?	NO	Fully mitigated?	N/A

LADOT
Moving Los Angeles Forward

Level of Service Workheet
(Circular 212 Method)

I/S #:	North-South Street:	Vermont Ave	Year of Count:	2014	Ambient Growth: (%):	1	Conducted by:	KOA Corp	Date:	4/22/14
4	East-West Street:	11th St	Projection Year:	2016	Peak Hour:	AM	Reviewed by:	IDH	Project:	MORCS Charter School

	Existing Condition	Existing Plus Project	Future Condition W/O Project	Future Condition W/ Project	Future W/ Project W/ Mitigation
No. of Phases	2	2	2	2	2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?	0	0	0	0	0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0
ATSAC-1 or ATSAC+ATCS-2?	1	1	2	2	2
Override Capacity	0	0	0	0	0

	MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	44	1	44	0	44	44	0	45	1	45	0	45	1	45	0	45	1	45
	Left-Through		0							0				0				0	
	Through	1325	1	**692**	0	1325	**692**	98	1450	1	**755**	0	1450	1	**755**	0	1450	1	**755**
	Through-Right		1							1				1				1	
	Right	58	0	58	0	58	58	0	59	0	59	0	59	0	59	0	59	0	59
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
SOUTHBOUND	Left	40	1	**40**	0	40	**40**	0	41	1	**41**	0	41	1	**41**	0	41	1	**41**
	Left-Through		0							0				0				0	
	Through	1141	1	590	0	1141	590	150	1314	1	677	0	1314	1	677	0	1314	1	677
	Through-Right		1							1				1				1	
	Right	39	0	39	0	39	39	0	40	0	40	0	40	0	40	0	40	0	40
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
EASTBOUND	Left	59	1	59	10	69	69	0	60	1	60	10	70	1	70	0	70	1	70
	Left-Through		0							0				0				0	
	Through	126	0	**198**	5	131	**209**	0	129	0	**202**	5	134	0	**213**	0	134	0	**213**
	Through-Right		1							1				1				1	
	Right	72	0	0	6	78	0	0	73	0	0	6	79	0	0	0	79	0	0
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
WESTBOUND	Left	64	1	**64**	7	71	**71**	0	65	1	**65**	7	72	1	**72**	0	72	1	**72**
	Left-Through		0							0				0				0	
	Through	101	0	170	0	101	170	0	103	0	173	0	103	0	173	0	103	0	173
	Through-Right		1							1				1				1	
	Right	69	0	0	0	69	0	0	70	0	0	0	70	0	0	0	70	0	0
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	

	Existing Condition	Existing Plus Project	Future Condition W/O Project	Future Condition W/ Project	Future W/ Project W/ Mitigation
CRITICAL VOLUMES — *North-South:*	732	732	796	796	796
East-West:	262	280	267	285	285
SUM:	994	1012	1063	1081	1081
VOLUME/CAPACITY (*V/C*) RATIO:	0.663	0.675	0.709	0.721	0.721
V/C LESS ATSAC/ATCS ADJUSTMENT:	0.593	0.605	0.609	0.621	0.621
LEVEL OF SERVICE (LOS):	A	B	B	B	B

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in *v/c* due to project:	0.012	Δ*v/c* after mitigation:	0.012
Significant impacted?	NO	Fully mitigated?	N/A

LADOT
Moving Los Angeles Forward

Level of Service Workheet
(Circular 212 Method)

I/S #: 4	North-South Street: Vermont Ave	Year of Count: 2014	Ambient Growth: (%): 1	Conducted by: KOA Corp	Date: 4/22/14
	East-West Street: 11th St	Projection Year: 2016	Peak Hour: PM	Reviewed by: IDH	Project: MORCS Charter School

	EXISTING CONDITION	EXISTING PLUS PROJECT	FUTURE CONDITION W/O PROJECT	FUTURE CONDITION W/ PROJECT	FUTURE W/ PROJECT W/ MITIGATION
No. of Phases	2	2	2	2	2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?	0	0	0	0	0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0
ATSAC-1 or ATSAC+ATCS-2?	1	1	2	2	2
Override Capacity	0	0	0	0	0

MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
	Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND Left	75	1	75	0	75	75	0	77	1	77	0	77	1	77	0	77	1	77
Left-Through		0							0				0				0	
Through	1190	1	632	0	1190	632	190	1404	1	739	0	1404	1	739	0	1404	1	739
Through-Right		1							1				1				1	
Right	73	0	73	0	73	73	0	74	0	74	0	74	0	74	0	74	0	74
Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0	
SOUTHBOUND Left	30	1	30	0	30	30	0	31	1	31	0	31	1	31	0	31	1	31
Left-Through		0							0				0				0	
Through	1043	1	544	0	1043	544	115	1179	1	612	0	1179	1	612	0	1179	1	612
Through-Right		1							1				1				1	
Right	44	0	44	0	44	44	0	45	0	45	0	45	0	45	0	45	0	45
Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0	
EASTBOUND Left	44	1	44	3	47	47	0	45	1	45	3	48	1	48	0	48	1	48
Left-Through		0							0				0				0	
Through	122	0	198	2	124	202	0	124	0	202	2	126	0	206	0	126	0	206
Through-Right		1							1				1				1	
Right	76	0	0	2	78	0	0	78	0	0	2	80	0	0	0	80	0	0
Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0	
WESTBOUND Left	61	1	61	2	63	63	0	62	1	62	2	64	1	64	0	64	1	64
Left-Through		0							0				0				0	
Through	128	0	195	0	128	195	0	131	0	199	0	131	0	199	0	131	0	199
Through-Right		1							1				1				1	
Right	67	0	0	0	67	0	0	68	0	0	0	68	0	0	0	68	0	0
Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0	

	EXISTING CONDITION	EXISTING PLUS PROJECT	FUTURE CONDITION W/O PROJECT	FUTURE CONDITION W/ PROJECT	FUTURE W/ PROJECT W/ MITIGATION
CRITICAL VOLUMES *North-South:*	662	662	770	770	770
East-West:	259	265	264	270	270
SUM:	921	927	1034	1040	1040
VOLUME/CAPACITY (V/C) RATIO:	0.614	0.618	0.689	0.693	0.693
V/C LESS ATSAC/ATCS ADJUSTMENT:	0.544	0.548	0.589	0.593	0.593
LEVEL OF SERVICE (LOS):	A	A	A	A	A

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.004	Δv/c after mitigation:	0.004
Significant impacted?	NO	Fully mitigated?	N/A

LADOT Moving Los Angeles Forward

Level of Service Workheet
(Circular 212 Method)

I/S #:	North-South Street:	Vermont Ave	Year of Count:	2014	Ambient Growth: (%):	1	Conducted by:	KOA Corp	Date:	4/22/14
5	East-West Street:	Pico Blvd	Projection Year:	2016	Peak Hour:	AM	Reviewed by:	IDH	Project:	MORCS Charter School

	Existing Condition	Existing Plus Project	Future Condition W/O Project	Future Condition W/ Project	Future W/ Project W/ Mitigation
No. of Phases	2	2	2	2	2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?	0	0	0	0	0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0
ATSAC-1 or ATSAC+ATCS-2?	1	1	2	2	2
Override Capacity	0	0	0	0	0

MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	64	1	64	5	69	69	0	65	1	65	5	70	1	70	0	70	1	70
	Left-Through		0							0				0				0	
	Through	1272	1	**660**	0	1272	**660**	80	1378	1	**713**	0	1378	1	**713**	0	1378	1	**713**
	Through-Right		1							1				1				1	
	Right	47	0	47	0	47	47	0	48	0	48	0	48	0	48	0	48	0	48
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
SOUTHBOUND	Left	72	1	**72**	3	75	**75**	14	87	1	**87**	3	90	1	**90**	0	90	1	**90**
	Left-Through		0							0				0				0	
	Through	1157	1	614	4	1161	617	124	1304	1	695	4	1308	1	697	0	1308	1	697
	Through-Right		1							1				1				1	
	Right	71	0	71	1	72	72	13	85	0	85	1	86	0	86	0	86	0	86
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
EASTBOUND	Left	77	1	77	0	77	77	8	87	1	87	0	87	1	87	0	87	1	87
	Left-Through		0							0				0				0	
	Through	862	1	**491**	0	862	**491**	48	927	1	**525**	0	927	1	**525**	0	927	1	**525**
	Through-Right		1							1				1				1	
	Right	120	0	120	0	120	120	0	122	0	122	0	122	0	122	0	122	0	122
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
WESTBOUND	Left	55	1	**55**	0	55	**55**	0	56	1	**56**	0	56	1	**56**	0	56	1	**56**
	Left-Through		0							0				0				0	
	Through	701	1	386	4	705	388	40	755	1	419	4	759	1	421	0	759	1	421
	Through-Right		1							1				1				1	
	Right	71	0	71	0	71	71	10	82	0	82	0	82	0	82	0	82	0	82
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	

	Existing Condition	Existing Plus Project	Future Condition W/O Project	Future Condition W/ Project	Future W/ Project W/ Mitigation
CRITICAL VOLUMES *North-South:*	732	735	800	803	803
East-West:	546	546	581	581	581
SUM:	1278	1281	1381	1384	1384
VOLUME/CAPACITY (*V/C*) RATIO:	0.852	0.854	0.921	0.923	0.923
V/C LESS ATSAC/ATCS ADJUSTMENT:	0.782	0.784	0.821	0.823	0.823
LEVEL OF SERVICE (LOS):	C	C	D	D	D

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in *v/c* due to project:	0.002	$\Delta v/c$ after mitigation:	0.002
Significant impacted?	NO	Fully mitigated?	N/A

LADOT
Moving Los Angeles Forward

Level of Service Workheet
(Circular 212 Method)

I/S #:	North-South Street:	Vermont Ave	Year of Count:	2014	Ambient Growth: (%):	1	Conducted by:	KOA Corp	Date:	4/22/14
5	East-West Street:	Pico Blvd	Projection Year:	2016	Peak Hour:	PM	Reviewed by:	IDH	Project:	MORCS Charter School

	Existing Condition	Existing Plus Project	Future Condition W/O Project	Future Condition W/ Project	Future W/ Project W/ Mitigation
No. of Phases	2	2	2	2	2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?	0	0	0	0	0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0	NB-- 0 SB-- 0 EB-- 0 WB-- 0
ATSAC-1 or ATSAC+ATCS-2?	1	1	2	2	2
Override Capacity	0	0	0	0	0

MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
	Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND																		
Left	67	1	67	1	68	68	0	68	1	68	1	69	1	69	0	69	1	69
Left-Through		0							0				0				0	
Through	1201	1	**634**	0	1201	**634**	157	1382	1	**725**	0	1382	1	**725**	0	1382	1	**725**
Through-Right		1							1				1				1	
Right	67	0	67	0	67	67	0	68	0	68	0	68	0	68	0	68	0	68
Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0	
SOUTHBOUND																		
Left	71	1	**71**	1	72	**72**	11	83	1	**83**	1	84	1	**84**	0	84	1	**84**
Left-Through		0							0				0				0	
Through	1082	1	579	1	1083	579	95	1199	1	642	1	1200	1	643	0	1200	1	643
Through-Right		1							1				1				1	
Right	75	0	75	0	75	75	8	85	0	85	0	85	0	85	0	85	0	85
Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0	
EASTBOUND																		
Left	79	1	**79**	0	79	**79**	14	95	1	**95**	0	95	1	**95**	0	95	1	**95**
Left-Through		0							0				0				0	
Through	686	1	402	0	686	402	145	845	1	483	0	845	1	483	0	845	1	483
Through-Right		1							1				1				1	
Right	118	0	118	0	118	118	0	120	0	120	0	120	0	120	0	120	0	120
Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0	
WESTBOUND																		
Left	59	1	59	0	59	59	0	60	1	60	0	60	1	60	0	60	1	60
Left-Through		0							0				0				0	
Through	709	1	**407**	1	710	**407**	59	782	1	**454**	1	783	1	**454**	0	783	1	**454**
Through-Right		1							1				1				1	
Right	104	0	104	0	104	104	19	125	0	125	0	125	0	125	0	125	0	125
Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0	

	Existing Condition	Existing Plus Project	Future Condition W/O Project	Future Condition W/ Project	Future W/ Project W/ Mitigation
CRITICAL VOLUMES — *North-South:*	705	706	808	809	809
East-West:	486	486	549	549	549
SUM:	1191	1192	1357	1358	1358
VOLUME/CAPACITY (*V/C*) RATIO:	0.794	0.795	0.905	0.905	0.905
V/C LESS ATSAC/ATCS ADJUSTMENT:	0.724	0.725	0.805	0.805	0.805
LEVEL OF SERVICE (LOS):	C	C	D	D	D

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in *v/c* due to project:	0.000	Δ*v/c* after mitigation:	0.000
Significant impacted?	NO	Fully mitigated?	N/A

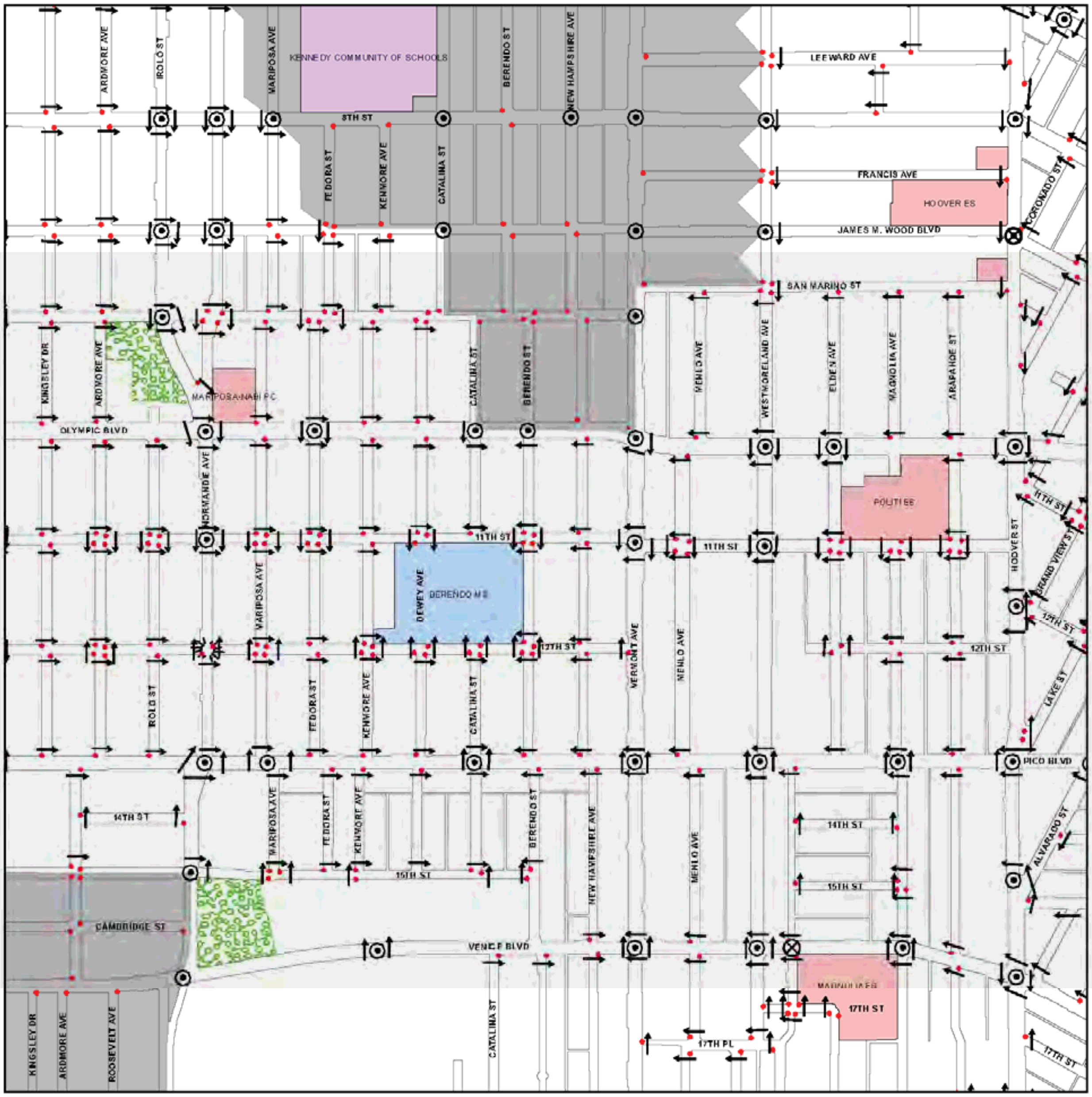
Pedestrian Routes - Berendo Middle School

APPENDIX D

CITY OF LOS ANGELES - DEPARTMENT OF TRANSPORTATION

July 2013

PEDESTRIAN ROUTES FOR BERENDO MIDDLE SCHOOL



Legend

- Recommended Crossing
- Stop Sign
- Traffic Signal
- Crossing Guard
- Flashing Warning Light
- Stairs or Walkway
- Pedestrian Bridge
- Pedestrian Tunnel
- Parks

N W E S

0 250 500
Feet

Parents:
This map shows the recommended crossings to be used from each block in your school attendance area. Following the arrows, select the best route from your home to the school and mark it with a colored pencil or crayon. This is the route your child should take. Instruct your child to use this route and to cross streets only at locations shown. You and your child should become familiar with the route by walking it together. Obey marked crosswalks, stop signs, traffic signals and other traffic controls. Crossing points have been located at these controls wherever possible, even though a longer walk may be necessary. Instruct your child to always look both ways before crossing the street. If no sidewalk exists, your child should walk facing traffic.

Estimados Padres:
Este mapa muestra los cruzados recomendados para los peatones de cada cuadra en la area de su escuela. Siguiendo las flechas en el mapa, selecione la ruta mas segura de su casa a la Escuela y marquelo con un lapis o tiza de color. Esta es la ruta que su hijo (a) debe de usar. Digale a su hijo (a) que use esta ruta y que cruce las calles solamente en los lugares indicados. Usted y su hijo (a) deberian de familiarizarce con esta ruta. Obedezcan los rotulos de peatones, de altos, semaforos y todos los señales de trafico. Puntos para cruzar estan localizados en areas controladas, aunque sea necesario de alargar el tiempo para cruzar. Instruye a su hijo (a) que siempre se fije de los dos lados antes de cruzar la calle. El estudiante debe de siempre caminar en la direccion opuesta del trafico si no existe una banqueta.

APPENDIX E
MUTCD Peak Hour Traffic Signal Warrant Worksheets

INTERSECTION: 11th Street & Berendo Street Scenario: Future with Project

Figure 4C-101 (CA). Traffic Signal Warrants Worksheets (Sheet 2 of 4)

WARRANT 2 - Four Hour Vehicular Volume SATISFIED* YES ☐ NO ☒

Record hourly vehicular volumes for any four hours of an average day.

NOT ANALYZED

APPROACH LANES	One	2 or More	0	0	0	Hour
Both Approaches - Major Street	x		0	0	0	[illegible]
Higher Approach - Minor Street	x		0	0	0	0

*All plotted points fall above the curves in Figure 4C-1. (Urban Areas)	YES ☐ NO ☐
OR, All plotted points fall above the curves in Figure 4C-2. (Rural Areas)	YES ☐ NO ☒

WARRANT 3 - Peak Hour SATISFIED YES ☐ NO ☒
(Part A or Part B must be satisfied)

PART A SATISFIED YES ☐ NO ☒

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1	The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND *9.2 seconds in delay & 0.43 vehicle-hours of delay*	YES ☐ NO ☒
2	The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	YES ☒ NO ☐
3	The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	YES ☐ NO ☒

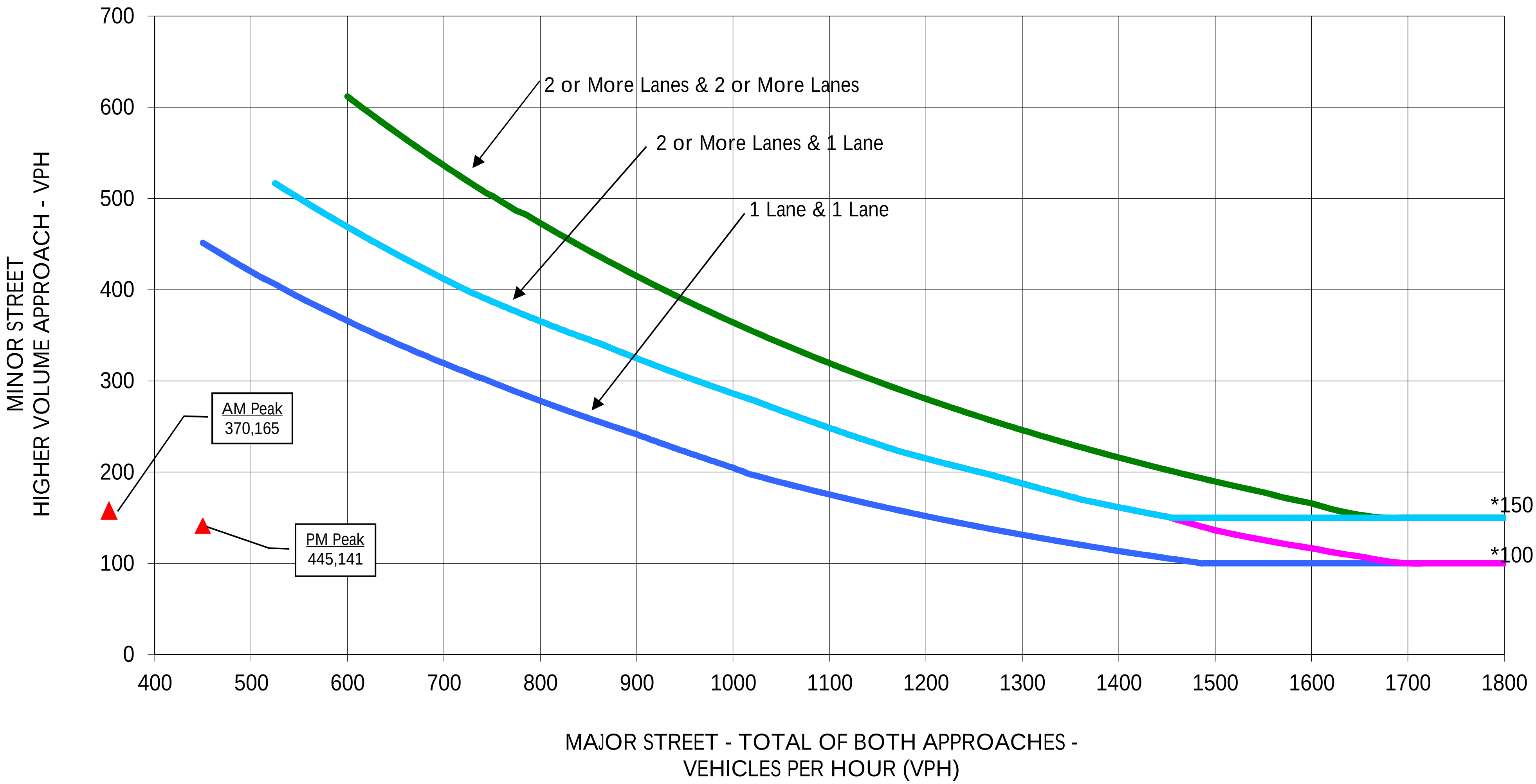
PART B SATISFIED YES ☐ NO ☒

APPROACH LANES	One	2 or More	am peak	pm peak
Both Approaches - Major Street	x		370	445
Higher Approach - Minor Street	x		165	141

The plotted point falls above the curve in Figure 4C-3. (Urban Areas)	YES ☐ NO ☒
OR, The plotted point falls above the curve in Figure 4C-4. (Rural Areas)	YES ☐ NO ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

11th Street & Berendo Street
AM(PM) Peak hour Traffic Signal Warrant Based on
California Manual on Uniform Traffic Control Devices, 2012
Scenario: Future With Project



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

LEGEND
▲ 11th Street - 1 Lane(s) Major Street: 370 (445) VPH
Berendo Street - 1 Lane(s) Minor Street: 165 (141) VPH

Peak Hour Volumes Satisfy Warrants? NO

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Berendo St and 11th St , Los Angeles

Date:	12/11/2013
Day:	Wednesday
Project #:	13-5664-006
City:	Los Angeles

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

N

Berendo St

11th St

Peak Hour Summary

Southbound Approach

	Lanes 0	Lanes 1	Lanes 0	Exiting
AM	13	107	29	168
NOON	0	0	0	0
PM	17	72	48	189

Eastbound Approach

Lanes		AM	NOON	PM
	Exiting	105	0	186
0	Left	11	0	14
1	Through	89	0	143
0	Right	46	0	27

Westbound Approach

	AM	NOON	PM	Lanes
Right	55	0	79	0
Through	81	0	153	1
Left	52	0	17	0
Exiting	168	0	216	

CONTROL

4-Way Stop

Northbound Approach

	Exiting	Left	Through	Right
AM	205	11	102	50
NOON	0	0	0	0
PM	116	16	96	25
Lanes		0	1	0

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	149	168
North Leg	NOON	0	0
North Leg	PM	137	189
South Leg	AM	205	163
South Leg	NOON	0	0
South Leg	PM	116	137

West Leg	AM	NOON	PM
	105	0	186
	146	0	184

East Leg	AM	NOON	PM
	188	0	249
	168	0	216

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	317	0	326
West Leg	251	0	370
East Leg	356	0	465
South Leg	368	0	253

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-006 | Day: Wednesday

City: Los Angeles | Date: 12/11/2013

AM

NS/EW Streets:	Berendo St			Berendo St			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
7:00 AM	1	8	3	5	17	2	5	16	4	6	16	6	89
7:15 AM	2	9	8	3	14	5	4	11	3	8	21	10	98
7:30 AM	2	26	15	3	30	4	3	22	10	12	20	10	157
7:45 AM	2	31	23	8	37	4	3	20	20	26	23	18	215
8:00 AM	2	26	6	12	27	3	0	24	13	6	26	12	157
8:15 AM	5	19	6	6	13	2	5	23	3	8	12	15	117
8:30 AM	1	14	6	2	5	3	2	18	2	2	16	18	89
8:45 AM	3	15	5	8	13	3	1	9	2	3	19	18	99

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	18	148	72	47	156	26	23	143	57	71	153	107	1021
APPROACH %'s :	7.56%	62.18%	30.25%	20.52%	68.12%	11.35%	10.31%	64.13%	25.56%	21.45%	46.22%	32.33%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	11	102	50	29	107	13	11	89	46	52	81	55	646
PEAK HR FACTOR :		0.728			0.760			0.849			0.701		0.751

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5664-006

Day: Wednesday

City: Los Angeles

Date: 12/11/2013

PM

NS/EW Streets:	Berendo St			Berendo St			11th St			11th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
4:00 PM	2	21	8	6	26	13	2	31	6	5	36	13	169
4:15 PM	4	19	9	14	23	3	5	22	5	7	26	18	155
4:30 PM	1	15	6	13	23	3	8	22	3	4	38	15	151
4:45 PM	5	20	5	6	17	6	4	22	6	6	48	12	157
5:00 PM	6	26	6	15	18	5	4	28	7	4	36	16	171
5:15 PM	2	28	3	11	26	5	2	32	8	7	33	15	172
5:30 PM	2	21	9	10	14	1	3	41	7	3	42	26	179
5:45 PM	6	21	7	12	14	6	5	42	5	3	42	22	185

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	28	171	53	87	161	42	33	240	47	39	301	137	1339
APPROACH %'s :	11.11%	67.86%	21.03%	30.00%	55.52%	14.48%	10.31%	75.00%	14.69%	8.18%	63.10%	28.72%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	16	96	25	48	72	17	14	143	27	17	153	79	707
PEAK HR FACTOR :		0.901			0.815			0.885			0.877		0.955

CONTROL : 4-Way Stop

```
--------------------------------------------------------------------------------
                 Monsenor Oscar Romero Charter School (MORCS)
                        Future Post-Project Conditions
                                 AM Peak Hour
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM 4-Way Stop Method (Future Volume Alternative)
********************************************************************************
Intersection #6 Berendo St & 11th St [PK HR Warrant]
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):        0.302
Loss Time (sec):       0              Average Delay (sec/veh):        9.4
Optimal Cycle:         0              Level Of Service:                 A
********************************************************************************
Street Name:            Berendo St                         11th St
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:     11  102    50   29  107    13   11   89    46   52   81    55
Growth Adj:  1.01 1.01  1.01 1.01 1.01  1.01 1.01 1.01  1.01 1.01 1.01  1.01
Initial Bse:  11  103    51   29  108    13   11   90    46   53   82    56
Added Vol:     0    0     0    0   13     0    0    0     8   24    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  11  103    51   29  121    13   11   90    54   77   82    56
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  103    51   29  121    13   11   90    54   77   82    56
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  11  103    51   29  121    13   11   90    54   77   82    56
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  103    51   29  121    13   11   90    54   77   82    56
------------|---------------||---------------||---------------||---------------|
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:       0.07 0.62  0.31 0.18 0.74  0.08 0.07 0.58  0.35 0.36 0.38  0.26
Final Sat.:   47  436   214  122  502    54   50  408   247  254  271   184
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.24 0.24  0.24 0.24 0.24  0.24 0.22 0.22  0.22 0.30 0.30  0.30
Crit Moves:       ****              ****         ****                  ****
Delay/Veh:    9.2  9.2   9.2  9.4  9.4   9.4  9.0  9.0   9.0  9.7  9.7   9.7
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:   9.2  9.2   9.2  9.4  9.4   9.4  9.0  9.0   9.0  9.7  9.7   9.7
LOS by Move:   A    A     A    A    A     A    A    A     A    A    A     A
ApproachDel:       9.2              9.4              9.0              9.7
Delay Adj:        1.00             1.00             1.00             1.00
ApprAdjDel:        9.2              9.4              9.0              9.7
LOS by Appr:        A                A                A                A
AllWayAvgQ:   0.3  0.3   0.3  0.3  0.3   0.3  0.2  0.2   0.2  0.4  0.4   0.4
********************************************************************************
```

Monsenor Oscar Romero Charter School (MORCS)
Future Post-Project Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #6 Berendo St & 11th St [PK HR Warrant]

Cycle (sec):	100	Critical Vol./Cap.(X):	0.351
Loss Time (sec):	0	Average Delay (sec/veh):	9.6
Optimal Cycle:	0	Level Of Service:	A

Street Name:	Berendo St		11th St	
Approach:	North Bound	South Bound	East Bound	West Bound
Control:	Stop Sign	Stop Sign	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

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	16	96	25	48	72	17	14	143	27	17	153	79
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	16	97	25	48	73	17	14	144	27	17	155	80
Added Vol:	0	0	0	0	3	0	0	0	2	6	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	97	25	48	76	17	14	144	29	23	155	80
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:	16	97	25	48	76	17	14	144	29	23	155	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	97	25	48	76	17	14	144	29	23	155	80
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:	16	97	25	48	76	17	14	144	29	23	155	80
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:	0.12	0.70	0.18	0.34	0.54	0.12	0.07	0.77	0.16	0.09	0.60	0.31
Final Sat.:	77	461	120	223	348	79	53	541	110	66	441	228
Capacity Analysis Module:												
Vol/Sat:	0.21	0.21	0.21	0.22	0.22	0.22	0.27	0.27	0.27	0.35	0.35	0.35
Crit Moves:	****					****		****			****	
Delay/Veh:	9.3	9.3	9.3	9.4	9.4	9.4	9.5	9.5	9.5	10.0	10.0	10.0
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:	9.3	9.3	9.3	9.4	9.4	9.4	9.5	9.5	9.5	10.0	10.0	10.0
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		9.3			9.4			9.5			10.0	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.3			9.4			9.5			10.0	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.5	0.5	0.5

Project Site Figure with Queued Vehicles