FINAL
SUPPLEMENTAL
ENVIRONMENTAL IMPACT REPORT
LONG BEACH CITY COLLEGE
2041 FACILITIES MASTER PLAN
PACIFIC COAST CAMPUS IMPROVEMENTS

Prepared for:

LONG BEACH COMMUNITY COLLEGE DISTRICT
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EXECUTIVE SUMMARY

E.S.1 INTRODUCTION

The Long Beach Community College District (LBCCD or District) is proposing to implement the LBCCD 2041 Facilities Master Plan at the Long Beach City College Pacific Coast Campus (PCC, Project Site). The District's goal as part of the California Community College system is to offer academic and vocational education to students at the lower college division level. In addition, the District's goal is to advance California's economic growth and global competitiveness through education, training, and services that contribute to continuous workforce improvement. Long Beach City College (LBCC) is committed to providing equitable student learning and achievement, academic excellence, and workforce development by delivering high quality educational programs and support services to their diverse communities.

The objective of the 2041 Facilities Master Plan is to provide plans to implement necessary construction, renovation, and general capital improvements at the campus in order to meet the District's goals and to support the District's Strategic Plan. The improvements are intended to create and improve building space to support the LBCCD Strategic Plan and Student Learning Outcomes in all areas.

This document is a Final Supplemental Environmental Impact Report (SEIR) prepared in accordance with the California Environmental Quality Act (CEQA); and it provides an overview of the Proposed Project and considered alternatives, identifies the anticipated environmental impacts from the Proposed Project and the alternatives, and identifies mitigation measures designed to reduce the level of significance of any impact.

E.S.2 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The primary purpose of CEQA is to inform the public and decision makers as to the potential impacts of a project and to allow an opportunity for public input to ensure informed decision-making. CEQA requires all State and local government agencies to consider the environmental effects of projects over which they have discretionary authority. CEQA also requires each public agency to mitigate or avoid the significant environmental impacts resulting from proposed projects, when feasible and to identify a range of feasible alternatives to the Proposed Project that could reduce those environmental effects.

Under CEQA, a project Supplemental Environmental Impact Report analyzes the impacts of an individual activity or specific project and focuses primarily on changes in the environment that would result from the activity or project. The SEIR must include the contents required by CEQA and the *CEQA Guidelines* (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000–15387) and is required to examine all phases of the project, including planning, construction, operation, and any reasonably foreseeable future phases.

E.S.3 PROJECT SUMMARY

This overview is intended to provide a summary of the LBCCD 2041 Facilities Master Plan PCC Improvements Final SEIR. A complete copy of the Final SEIR may be reviewed at:

- LBCCD Bond Management Team office, Building O-1, 4901 East Carson Street, Long Beach, California 90808

- Online at the LBCCD website (https://www.lbcc.edu/pod/facilities-master-plans).

The LBCC PCC is located at 1305 East Pacific Coast Highway in the City of Long Beach, California 90806. The City of Long Beach is located in the southwest portion of Los Angeles County adjacent to the northern border of Orange County. The PCC is bounded by the Mary Butler School and 20th Street on the north, Walnut Avenue on the east, Pacific Coast Highway (PCH) on the south, and Orange Avenue on the west. Figure ES-1 illustrates the regional and local setting for the City of Long Beach.

The District has prepared this Final SEIR to address implementation of the LBCCD 2041 Facilities Master Plan. Through implementation of the LBCCD 2041 Facilities Master Plan, the District's goals are to provide academic and vocational education to students at the lower college division level and to advance California's economic growth and global competitiveness using education, training, and services to lead to a continuous workforce improvement.

E.S.4 PROJECT BACKGROUND

The District is undertaking an extensive improvement and building program at the two campuses to meet increasing enrollment needs, evolving demands for post-secondary educational institutions, and the needs of the Long Beach community. Additionally, the District will be using capital improvement funds from the State of California for renovation and new construction projects.

The objective of the 2041 Facilities Master Plan is to provide plans to implement proposed necessary construction, renovation, and general capital improvements at the campus in order to meet the District's goals and to support the District's Strategic Plan. The improvements are intended to create and improve building space to support the LBCCD Strategic Plan and Student Learning Outcomes in all areas.

Since the 2020 Unified Master Plan, the District prepared the LBCCD 2041 Facilities Master Plan to provide an understanding of the projects envisioned to be constructed in the near future. This Facilities Master Plan breaks down the type and size of each project for both campuses, as well as estimating the probable cost of each project. The 2041 Facilities Master Plan allows the District to re-evaluate available funds and expanded details of priority projects that the District is working to complete. Enrollment and the production of weekly student contact hours (WSCH) were used as the basis for quantifying growth as well as for determining the space needs of the future. Physical capacity was determined to be achieving student enrollment of 8,440 and 105,074 WSCH at PCC. At this point in time, the campus will have effectively reached its physical limit for available land area, for parking, and for the ability to effectively serve students.

E.S.5 PROJECT DESCRIPTION

The 2041 Facilities Master Plan provides updates to the 2020 Unified Master Plan and provides updated construction dates and budgets for the facilities projects. The Proposed Project incorporates the space and building needs identified to the year 2041. The LBCCD 2041 Facilities Master Plan PCC improvements would result in an estimated change over the 2020 Unified Master Plan of a decrease in 10,640 square feet of renovation, an increase of 232,372 square feet of new construction, and 10,640 square feet removed.

The following descriptions identify specific improvements recommended for the 2041 Facilities Master Plan PCC improvements that were not part of the 2020 Unified Master Plan or the original 2004 PCC Master Plan Program EIR.

- Building FF (10,640 GSF) will be removed instead of renovated, and the area will be utilized for a new campus entry including a student drop-off area and vehicular turnabout.

- Building MM (Phase 1) will involve a total of 5,307 square feet of new building and 6,466 square feet of new canopy instead of 14,286 gross square feet (GSF) which is shown on 2020 Master Plan (2,513 GSF of reduction in new construction).

- Building MM (Phase 2) will involve a total of 19,383 square feet of additional new building construction and demolition of approximately 26,240 of existing building.

- Building OO (formerly Building 1 Humanities in the 2020 Unified Master Plan) will increase the size of new construction from 35,000 gross square feet to 150,000 gross square feet.

- Existing Buildings UU and VV will be removed, and a new multi-story parking structure will be constructed to serve approximately 500 to 600 vehicles. The GSF will increase from 72,300 to approximately 178,392 GSF.

- Drought-tolerant landscape and hardscape improvements will be made to the existing landscaped areas south and west of Building BB along the Pacific Coast Highway and Orange Avenue.

- Building YY Central Plant will increase new construction by approximately 3,000 GSF to allow for an increase in the capacity of the existing central plant.

- In order for the District to meet the State requirements and Executive Order B-18-12 for Zero-Net-Energy, PCC campus will be studied for possible solar photovoltaic systems at various locations.

Master Plan Schedule

The 2041 Facilities Master Plan provides an approximate schedule sequence that identifies timelines for construction and project scope. Table 2-5, below, summarizes the scope of the 2041 Facilities Master Plan Improvements including building renovation, expansion, and/or new construction. To determine the projects and sequencing in the 2041 Facilities Master Plan, the Board of Trustees of the Long Beach Community College District evaluated the District's urgent and critical capital needs, including school and student safety issues; enrollment trends; class size reduction; overcrowding; energy efficiency and computer technology; seismic safety requirements; and aging, outdated, or deteriorating school buildings, in developing the scope of projects to be funded. In developing the scope of projects, the District has prioritized the key health and safety and sustainability needs so that the most critical school site needs are addressed.

The timing of certain projects will be dependent on the completion of other projects and will ultimately occur over the different phases. For example, landscape improvements will occur across the PCC. However, these improvements will be completed in portions following building construction or

renovation. Other projects sequenced like this include the security systems installation, technology replacement, energy and water conservation projects, and surface parking improvements.

The Master Plan projects called out the projects identified with the 2041 Facilities Master Plan and the timeframe that is most likely to occur during these time periods. However, the time frame in which a project is planned may change if the priority characteristics change for an individual project due to program needs or State funding allocation. The general amount of building scope by phase is shown in Table ES-1 for the 2041 Facilities Master Plan Updates.

Table ES-1: 2041 Facilities Master Plan Construction by Planned Construction Years

Construction Start Year	Projects Planned
Ongoing	Minor Campus Improvements, Infrastructure Projects, Campus Landscaping, District Security Monitoring Systems
To Be Determined	Walkways & Wayfinding, Surface Parking Improvement
2019/2020	Building P2 – Parking Structure, Joint Use Facility
2020/2021	Building MM – Construction Trades Phase 1
2021/2022	Building MM – Construction Trades Phase 2
2022/2024	Building OO - Classroom
2023/2024	Building FF – Demolish Fine Arts/Senior Center

E.S.6 TABLE OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Table ES-2 summarizes the potential significant adverse impacts for the Proposed Project. Each environmental resource area covered in Chapter 3.0 is summarized. Impacts found to be significant are listed along with the proposed mitigation measures. The residual impact after application of mitigation is also indicated for each significant impact. Cumulative impacts, if any, are also identified.

Table ES-2: Summary of Significant Impacts and Mitigation Measures

Potential Impacts	***Mitigation Measures***	***Level of significance after mitigation***
3.5 – Air Quality		
Result in conflict with or obstruct implementation of the applicable air quality plan.	None needed	Less than Significant
Violate any air quality standard or result in a cumulatively considerable net increase in an existing or projected air quality violation.	None needed	Less than Significant
Expose sensitive receptors to substantial pollutant concentrations.	None needed	Less than Significant
3.6 – Greenhouse Gas Emissions		
Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	None needed	Less than Significant
Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	None needed	Less than Significant
3.7- Noise		
Result in a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	None needed	Less than Significant
Result in generation of excessive groundborne vibration or groundborne noise levels.	None needed	Less than Significant
3.8- Transportation		
Conflict with a plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle lanes, and pedestrian paths.	**MM TRA-1**: Orange Avenue at 19th Street/Alamitos Avenue: Install a two-phase traffic signal. The installation of this improvement is subject to the approval of the City of Long Beach. **MM TRA-2**: Orange Avenue at 19th Street/Alamitos Avenue: Install a two-phase traffic signal. Restripe Orange Avenue to provide an exclusive northbound right-turn lane. The installation of these improvements is subject to the approval of the City of Long Beach.	Significant and Unavoidable

Figure ES-1: Regional and Local Settings

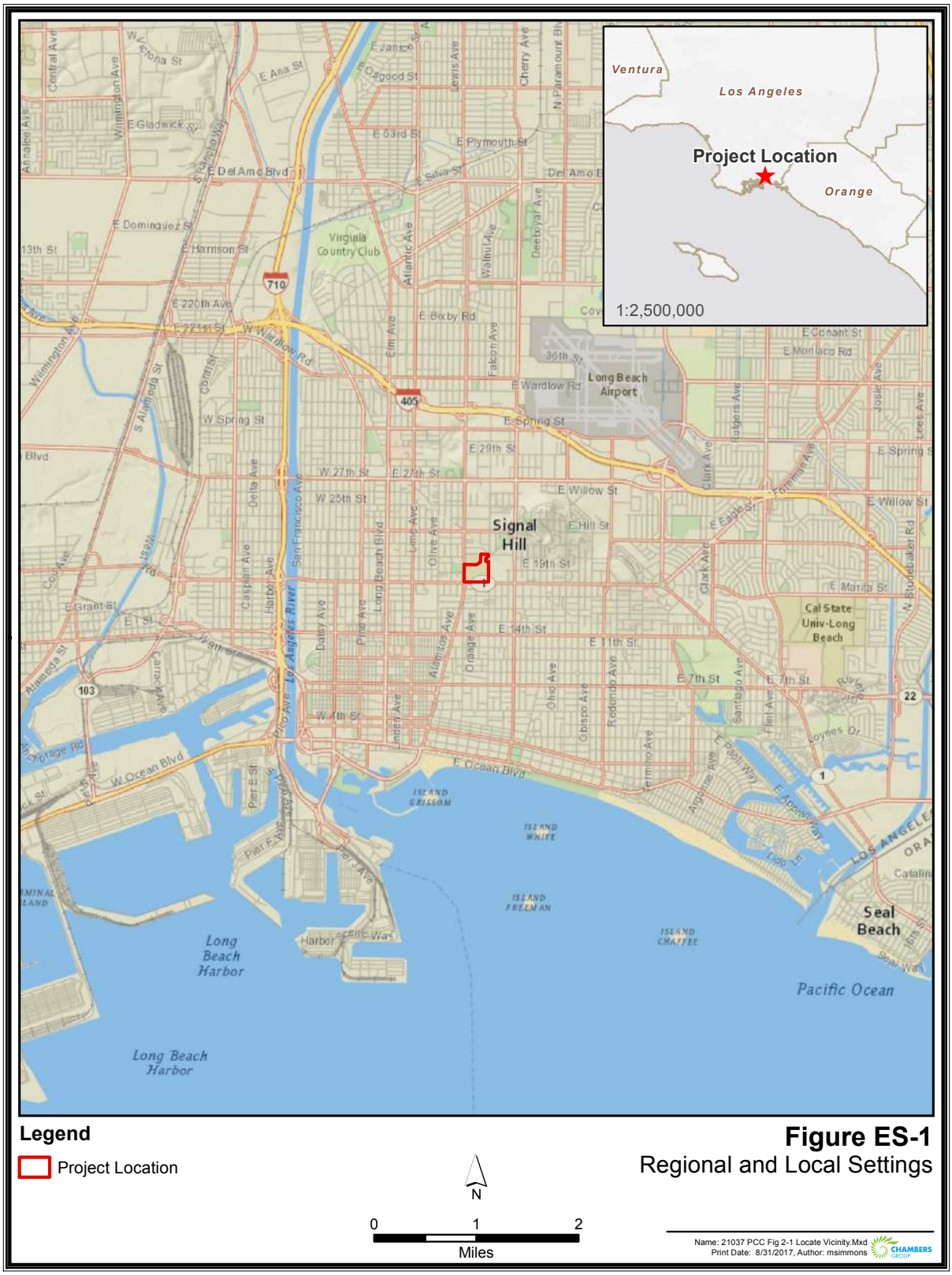


Figure ES-2: LBCCD 2041 Facilities Master Plan PCC Improvements

Figure ES-2
2041 Unified Master Plan PCC

Name: 21037 PCC Fig 2-5 2041 Master Plan.Mxd
Print Date: 8/31/2017, Author: msimmons

E.S.7 PROJECT ALTERNATIVES

Two alternatives for the Final SEIR were identified and evaluated:

- No Project Alternative - assumes that no improvements beyond those described in the 2004 PCC Master Plan and its amendments would be implemented.

- Reduced Project Alternative – assumes that the campus would be developed consistent with planned improvements outlined in the LBCCD 2041 Facilities Master Plan but that Building OO would not be constructed.

Chapter 4.0 discusses the alternatives in detail.

SECTION 1.0 – INTRODUCTION

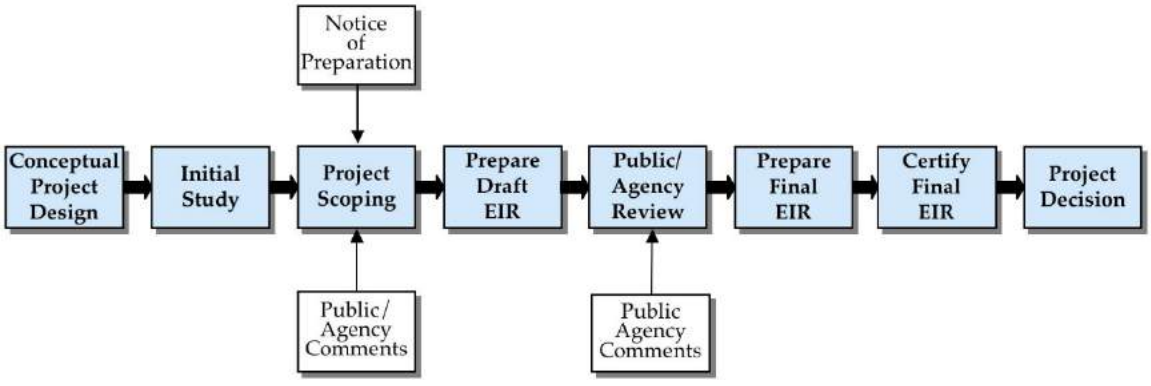
1.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The Long Beach Community College District (LBCCD or District) has prepared the LBCCD 2041 Facilities Master Plan, in which the District plans to complete renovation, demolition, and new construction projects on the LBCCD Pacific Coast Campus (PCC, Project Site). All "projects" within the State of California are required to undergo environmental review to determine the environmental impacts associated with implementation of the project in accordance with the California Environmental Quality Act (CEQA).

CEQA was enacted in 1970 by the California Legislature to disclose to decision makers and the public the significant environmental effects of a proposed project and identify possible ways to avoid or minimize significant environmental effects of a project by requiring implementation of mitigation measures or recommending feasible alternatives. CEQA applies to all California governmental agencies at all levels, including local, regional, and State, as well as boards, commissions, and special districts (such as LBCCD). As such, LBCCD is required to conduct an environmental review to analyze the potential environmental effects associated with the Proposed Project. LBCCD is the lead agency for the preparation of this Final Supplemental Environmental Impact Report (Final SEIR) in accordance with CEQA.

This Final SEIR is circulated to the public and affected agencies for review and comment. One of the primary objectives of CEQA is to enhance public participation in the planning process; public involvement is an essential feature of CEQA. Community members are encouraged to participate in the environmental review process, request to be notified, monitor newspapers for formal announcements, and submit substantive comments at every possible opportunity afforded by the agency. The environmental review process provides ample opportunity for the public to participate through scoping, public notice, and public review of CEQA documents. A diagram illustrating the CEQA process is shown in Figure 1-1 below. Additionally, lead agencies are required to respond to public comments in Final EIRs and consider comments from the scoping process in the preparation of the Final EIR.

Figure 1-1: The Environmental Review Process



1.2 SCOPE OF THE SEIR

This section provides a summary of the issues addressed in the SEIR. This Final SEIR was prepared following input from the public, responsible agencies, and affected agencies through the EIR scoping process, which included the following:

- In accordance with the State *CEQA Guidelines* (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000–15387), a Notice of Preparation (NOP) and Initial Study (IS) were prepared and distributed to responsible agencies, affected agencies, and other interested parties.

- The NOP was posted in the County Clerk's office for 30 days. The NOP was submitted to the State Clearinghouse to officially solicit participation in determining the scope of the SEIR.

- Information requested and input provided during the 30-day public review period regarding the contents of the NOP/IS and the scope of the EIR were incorporated in this Final SEIR.

The content of the Final SEIR was established based on the findings of the IS and public and agency input. Under the *CEQA Guidelines*, the analysis in the Final SEIR is focused on issues determined in the IS to be potentially significant, whereas issues found in the IS to have less than significant impacts or no impact do not require further evaluation. Therefore, based on the analysis contained in the IS, the following issue areas were determined to have less than significant impacts or no impacts with respect to implementation of the Proposed Project and would not require further evaluation in the Final SEIR:

- Aesthetics
- Agricultural and Forestry Resources
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems
- Wildfire

This Final SEIR analyzes the following environmental issues:

- Air Quality
- Greenhouse Gas Emissions
- Noise
- Transportation

Mitigation measures to reduce impacts to a less-than-significant level are proposed whenever feasible. In addition to the environmental issues identified above, this Final SEIR also includes all of the sections required by the *CEQA Guidelines*. (Table 1-1 contains a list of sections required under *CEQA Guidelines*, along with reference to the chapter where these items can be found.)

Table 1-1: Required Sections in CEQA Guidelines

Section Title	Location
Table of Contents (Section 15122)	Table of Contents
Summary (Section 15123)	Executive Summary
Introduction (Section 15122)	Chapter 1
Project Description (Section 15124) and environmental setting	Chapter 2
Significant Environmental Impacts (Section 15126.2)	Chapter 3.4-3.7
Unavoidable Significant Environmental Impacts (Section 15126.2)	Chapter 5
Mitigation Measures (Section 15126.4)	Chapter 3.4-3.7
Cumulative Impacts (Section 15130)	Chapter 3.4-3.7
Alternatives to the Proposed Project (Section 15126.6)	Chapter 4
Growth-Inducing Impacts (Section 15126.2)	Chapter 5
Effects Found Not To Be Significant (Section 15128)	Chapter 5
Organizations and Persons Consulted (Section 15129)	Chapter 6 and 7
List of Preparers	Chapter 7

1.3 FINAL SEIR ORGANIZATION

The Final SEIR is organized into the following chapters so the reader can easily obtain information about the Proposed Project and related environmental issues:

- Executive Summary – Presents a summary of the Proposed Project and alternatives, potential impacts and mitigation measures, and impact conclusions regarding growth inducement and cumulative impacts.

- Chapter 1: Introduction – Describes the purpose and use of the Final SEIR, provides a brief overview of the Proposed Project, and outlines the organization of the Final SEIR.

- Chapter 2: Project Description and Environmental Setting – Describes the project location, project details, baseline environmental setting and existing physical conditions, and the LBCCD's overall objectives for the Proposed Project.

- Chapter 3: Environmental Analysis – Describes the existing conditions, or setting, before project implementation; methods and assumptions used in impact analysis; thresholds of significance; impacts that would result from the Proposed Project; and applicable mitigation measures that would eliminate or reduce significant impacts for each environmental issue.

- Chapter 4: Alternatives Analysis – Evaluates the environmental effects of project alternatives, including the No-Project Alternative and Environmentally Superior Project Alternative.

- Chapter 5: Other CEQA Considerations – Includes a discussion of issues required by CEQA that are not covered in other chapters. This includes unavoidable adverse impacts, impacts found not to be significant, irreversible environmental changes, and growth-inducing impacts.

- Chapter 6: References – Identifies the documents and individuals consulted in preparing the Final SEIR.

- Chapter 7: Report Preparation – Lists the individuals involved in preparing the Final SEIR and organizations and persons consulted.

- Chapter 8: Acronyms/Abbreviations – Presents a list of the acronyms and abbreviations.

- Appendices – Present data supporting the analysis or contents of this Final SEIR. The Appendices include the following:

APPENDIX A	Notice of Preparation, Initial Study, and Comments
APPENDIX B	Air Quality Report
APPENDIX C	Noise Analysis Data
APPENDIX D	Traffic Report
APPENDIX E	2041 Facilities Master Plan

1.4 AVAILABILITY OF THE FINAL SEIR

The Draft SEIR for the LBCCD's PCC 2041 Facilities Master Plan was distributed directly to numerous agencies, organizations, and interested groups and persons for comment during the formal review period. The Draft SEIR was also available for review at the following locations:

- LBCCD Bond Management Team office, Building O-1, 4901 East Carson Street, Long Beach, California 90808

- PCC Learning Resource Center, Building LL, 1305 East Pacific Coast Highway, Long Beach, California 90806

- Mark Twain Library located at 1325 East Anaheim Street, Long Beach, California 90813

In addition, the Draft SEIR was available online at the LBCCD website (https://www.lbcc.edu/pod/facilities-master-plans).

SECTION 2.0 – PROJECT DESCRIPTION AND ENVIRONMENTAL SETTING

2.1 PROJECT BACKGROUND

The LBCCD, founded in 1927, is one of the largest of the 114 California community college districts. The District comprises two campuses: the Liberal Arts Campus (LAC) located at 4901 East Carson Street, Long Beach, California, and the Pacific Coast Campus (PCC) located at 1305 East Pacific Coast Highway, the subject of this Supplemental EIR. Together, the campuses currently serve a student population of 26,139.

The District's goal as part of the California Community College system is to offer academic and vocational education to students at the lower college division level. In addition, the District's goal is to advance California's economic growth and global competitiveness through education, training, and services that contribute to continuous workforce improvement. Long Beach City College is committed to providing equitable student learning and achievement, academic excellence, and workforce development by delivering high quality educational programs and support services to their diverse communities.

The objective of the 2041 Facilities Master Plan is to provide plans to implement proposed necessary construction, renovation, and general capital improvements at the campus in order to meet the District's goals and to support the District's Strategic Plan. The improvements are intended to create and improve building space to support the LBCCD Strategic Plan and Student Learning Outcomes in all areas.

2.1.1 Location

The LBCC PCC is located at 1305 East Pacific Coast Highway in the City of Long Beach, California 90806. The City of Long Beach is located in the southwest portion of Los Angeles County adjacent to the northern border of Orange County. The PCC is bounded by the Mary Butler School and 20th Street on the north; Walnut Avenue on the east; Pacific Coast Highway (PCH) on the south; and Orange Avenue on the west. Figure 2-1 illustrates the regional and local setting for the City of Long Beach. Figure 2-2 depicts the site on the United States (U.S.) Geological Survey (USGS) Long Beach 7.5-minute quadrangle topographic map.

The Proposed Project Site is approximately 6 miles west of Interstate 605 (San Gabriel River Freeway), 1.4 miles south of Interstate 405 (San Diego Freeway) and the Long Beach Municipal Airport (LBMA), and 1.8 miles east of Interstate 710 (Long Beach Freeway).

2.1.2 Adjacent Land Uses

The Proposed Project Site is located along PCH between Orange Avenue and Walnut Avenue in the City of Long Beach. The PCC is within the City of Long Beach General Plan Land Use District No. 10 – Institutions/Schools and is zoned Institutional (I). LBCC PCC is part of the Central Area Neighborhood Plan. Figure 2-2 presents the Proposed Project Site and adjacent land uses.

As shown in Figure 2-2, existing land uses surrounding PCC are institutional (Mary Butler School) and multi-family residential to the north; city park on the east; commercial, residential, and institutional on the south; and city park, residential, and neighborhood commercial uses on the west.

Figure 2-1: Regional and Local Settings

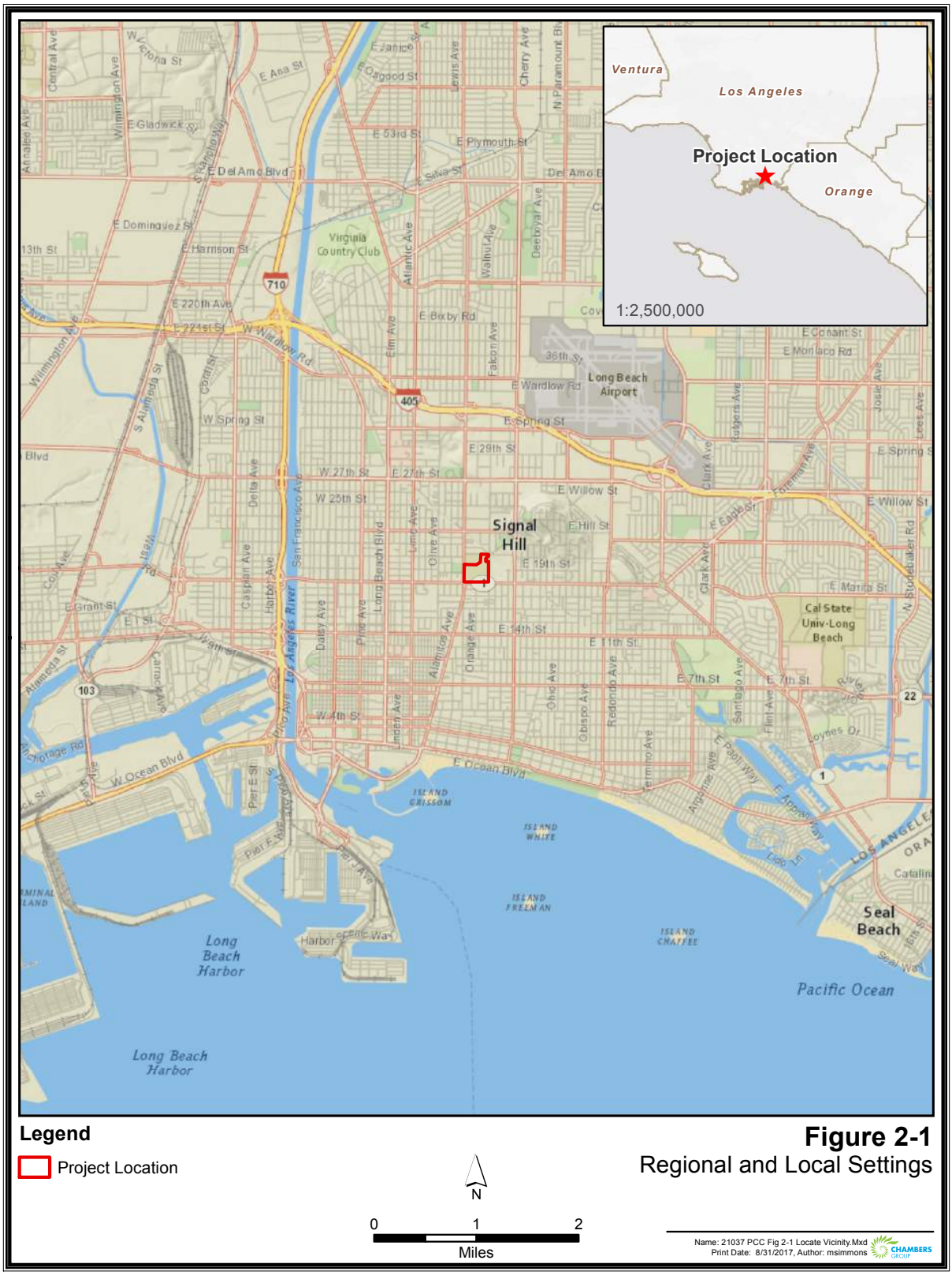
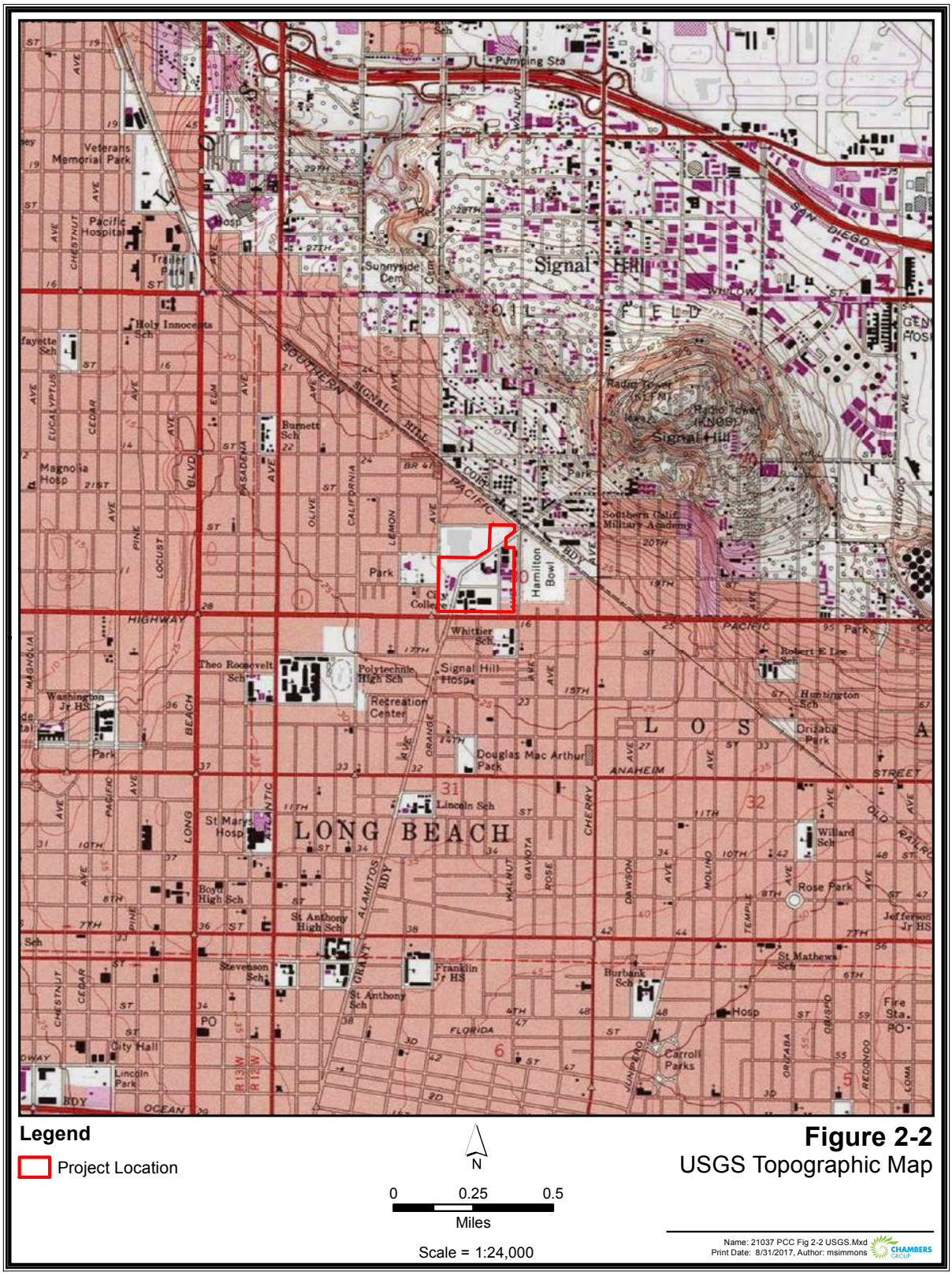


Figure 2-2: USGS Topographic Map



2.1.3 PCC Land Uses

The PCC contains approximately 30 acres and 23 buildings constructed between 1935 and 2017 and contains approximately 349,131 gross square feet (GSF) of building area. The PCC also includes ancillary structures of landscaped areas, asphalt-paved parking lots, and pedestrian walkways. Table 2-1 provides a building inventory including the age of construction, use, and square footage of each building. Figure 2-3 presents the existing site plan for the PCC.

Table 2-1: PCC Existing Building Inventory

Building/Department Name	Building Number	Gross Square Feet	Year Built	Last Addition
ADMINISTRATION	AA	30,165	1935	2014
WRITING CENTER/ESL	BB	14,768	1935	2014
FITNESS CENTER	CC	7,150	1935	2012
CLASSROOMS/RESOURCE CTR	DD	14,639	1935	2011
STUDENT CENTER/BOOKSTORE	EE	46,439	1950	2011
CLASSROOMS/SENIOR CENTER	FF	10,640	1936	1957
STUDENT SERVICES	GG	43,124	2016	--
ALTERNATIVE FUELS	MM	5,127	1957	--
REF-AIR-COND-SHT-MET	MM	12,306	1957	--
TECH OFFICE CLASSROOM	MM	7,371	1969	--
CONSTRUCTION TRADES	MM	19,013	1952	1989
SHADE HOUSE	NN	4,000	1975	--
GREENHOUSE	KK	3,150	1975	1998
INDUSTRIAL TECH II	JJ	24,334	2007	--
LIBRARY/LRC	LL	21,336	2008	--
ROBOTICS	RR	7,667	1953	2017
INDUSTRIAL ELECTRIC	QQ	24,454	2017	--
CENTRAL PLANT	YY	6,900	2009	--
INDUSTRIAL TECH I	II	26,700	2010	--
CHILD DEVELOPMENT CENTER	HH	15,845	2005	--
UU-A	UUA	2,083	2006	--
UU-B	UUB	960	2006	--
UU-C	UUC	960	2006	--

Source: FUSION data base 2017

Figure 2-3: Existing PCC Site Plan

2.1.4 LBCC and PCC History

Long Beach City College (LBCC), then known as Long Beach Junior College (LBJC), celebrated its 90th Anniversary in 2017. The college opened at Woodrow Wilson High School in September 1927. LBJC was the second two-year college established in the metropolitan area of Los Angeles. LBJC served students not only from Long Beach but also from as far away as Redondo Beach (north) and Laguna Beach (south). In 1933 LBJC was offered 25 acres on Carson Street for a new campus by the Montana Land Company. The area was then known as "Lakewood Village." The Montana Land Company donated additional land parcels in 1934. The new campus with a total of 29.844 acres, now referred to as LBCC LAC, opened in 1935 with Mission architecture with tile roofs, white exterior walls, and patios. Bean, alfalfa, and carrot fields surrounded the new campus on Carson. The first mailing address of the Carson campus was Route No. 1, Clark and Carson Streets. The enrollment in 1935-36 was 1,603 students with 51 full-time faculty members. By 1942-43, the middle of the war years (1941-45), enrollment had climbed to 2,966 students with 56 full-time faculty members. In the postwar expansion period from 1945-52, LBCC acquired an additional 38.379 acres south of Carson Street.

In response to the postwar increase in enrollment, the LBCC also acquired the former Hamilton Junior High School site at PCH and Alamitos Avenue in 1949 for the newly formed Business and Technology Division of LBCC. This site is now the PCC of LBCC.

2.1.5 2004 Master Plan Elements

A general obligation bond election (Measure "E"/ Proposition 39) was approved in March 2002 for both general and specific improvements at LBCC at both the PCC and the LAC. The District was undertaking an extensive improvement and building program at the two campuses to meet increasing enrollment needs, evolving demands for post-secondary educational institutions, and the needs of the Long Beach community. Additionally, the District will be using capital improvement funds from the State of California for renovation and new construction projects.

In 2004, the District prepared the LBCC PCC Master Plan to reflect LBCC's projected instructional and programmatic needs for the PCC. The 2004 LBCC PCC Master Plan outlines capital improvements through 2015 and proposes construction of new buildings, renovation, modernization and additions to existing facilities, demolition of existing buildings, and landscaping enhancements. Improvements are intended to update existing technological and program services to meet increasing needs of students and faculty. Figure 2-4 and Table 2-2 present the 2004 LBCC PCC Master Plan Improvements.

The District prepared a Program Environmental Impact Report (PEIR) to address implementation of the 2004 LBCC PCC Master Plan. The Board of Trustees of the LBCCD certified the Final PEIR for the 2004 LBCC PCC Master Plan, State Clearinghouse No. 2004051060, on January 25, 2005. Since the adoption of the PEIR, two Addendums to the PEIR were completed to address updates to the original project description. The September 2008 Addendum addressed revising the project description to locate a proposed parking structure at one of two alternative locations on the PCC campus. This Addendum was approved by the Board of Trustees of the LBCCD on September 23, 2008. The May 2009 Addendum addressed a revision to the renovation/retrofit of Building MM proposed in the PEIR to add the replacement of 3,000 existing assignable square footage (ASF) with a 10,000 ASF addition. This Addendum was approved by the Board of Trustees of the LBCCD on May 19, 2009. Table 2-2 and Figure 2-4 present PCC Master Plan Improvements analyzed under the PEIR and its Addendums.

Table 2-2: 2004 Unified Master Plan PCC Improvements

Project	Function/Support	Scope/GSF
Buildings AA, BB, CC, DD, EE, FF, GG, MM, NN, QQ, & RR	Primary Academic Support	Renovation/Reconstruction – 203,100
Building MM Construction Trades	Replace a portion of Building MM.	Expansion – 14,286 Remove – 3,000
Technology Building	Demolish Buildings UU and VV, construct Technical Building	New Construction – 26,904
Aeronautics Test Cell Building	Aeronautics	New Construction – 1,800
Paint Booth	Adjacent to Test Cell	New Construction – 600
Building PCC-J Technology	Demolish Buildings SS and TT, construct Technical Building	New Construction – 29,793
Building PCC-L Learning Resource Center (LRC)	Learning Resources	New Construction – 55,441
Building PCC-H Child Development Center	Child Development Program	New Construction – 17,375
Parking	Remove Buildings UU and VV. Construct parking structure and surface parking lots	Remove – 15,550 New Construction - 72,300
Office/ Classroom Building	Office/ Classroom/ Lab	New Construction – 47,364
Office/ Classroom Building	Office/ Classroom/ Lab	New Construction – 60,314
Landscape Improvements	Campus-wide	New Construction
Drainage Improvements	Campus-wide	New Construction
Signage Improvements	Campus-wide	New Construction
Central Plant	Maintenance and Operations	New Construction – 6,182
Restroom Facility		New Construction – 2,000

(Note: These square footage numbers have been changed from assignable square footage (ASF) to gross square footage (GSF) for purposes of analysis within this Supplemental EIR. Only conversions from ASF to GSF or clarifications in numbers were made here.)

2.1.6 2020 Unified Master Plan Elements

Although the Measure E Bond Program, approved in March 2002, provided a jump-start to the District's capital facilities program, it was never intended to address all building/facilities needs for the campus. The age of the existing facilities coupled with the need to meet both current and future growth of the academic program of instruction required improvements that go beyond Measure E.

The District addressed this need in 2006 when it requisitioned the LBCC Resource and Facilities Plan. The Resource and Facilities Plan identified the growth rates vis-à-vis the academic programs of instruction at LAC and PCC. Enrollment and the production of weekly student contact hours (WSCH) were used as the basis for quantifying growth as well as for determining the space needs of the future. The year 2020 was selected as the "target year." Based on the growth rates, the vectors for

enrollment and WSCH were determined to intersect with the physical capacity of the two campuses at or about year 2020. Physical capacity was defined by the District as achieving student enrollment of 8,700 and 130,000 WSCH at PCC. At this point in time, the campus will have effectively reached its physical limit for available land area, for parking, and the ability to effectively serve students.

While the 2020 target year was somewhat relative, the enrollment and WSCH benchmarks were not. Enrollment and WSCH projections may be reached prior to the year 2020 or after that point in time. However, when 130,000 WSCH are reached at PCC, the campus will effectively be operating at maximum capacity.

Looking to the year of 2020, PCC's priorities focused on addressing the key areas for academic growth. PCC has already benefited substantially from the current capital construction program. Four new building projects and one major renovation project (the Multi-disciplinary Building) were proposed to be completed via the current Measure E Program. For the 2020 target year, replacement of the Construction Trades Building was needed in addition to a new building (the Humanities Building) that can support the expansion of the academic program of instruction and diversity of the curriculum. Replacement of the building that presently supports Auto Body/Diesel Mechanics was also a point of focus as the building/facilities program moves out to the year 2020. Support services priorities at PCC were proposed to include a one-stop Student Services Center and a new Maintenance and Operations Building. The provision of additional parking was a requirement if PCC was to meet the enrollment and WSCH growth that was projected.

The 2020 Unified Master Plan provided a prioritized program of work incorporating the 2004 Master Plan and the space and building needs identified to the year 2020. Figure 2-4 presents the LBCC 2020 Unified Master Plan PCC improvements. Table 2-3 presents the updates to the Master Plan through eliminated projects. Table 2-4 presents the updates to the Master Plan through new projects which were not analyzed in the PEIR or its Addendums.

Table 2-3: Eliminated or Reduced Master Plan Improvements

Project	Function/Support	Scope (GSF)
Buildings AA, BB, DD, & EE Multi-Discipline	Primary Academic Support	Reduce Renovation by 32,069
Building FF Fine Arts/ Senior Center	Fine Arts/ Community	Reduce Renovation by 2,652
Building GG Student Services	Student Services	Reduce Renovation by 5,105
Building PCC-J Technology	Vocational/ Technical Programs	Reduce New Construction by 5,459
Building PCC-L Learning Resource Center (LRC)	Learning Resources	Reduce New Construction by 34,497
Office/ Classroom Building	Office/ Classroom/ Lab	New Construction – 33,155
Office/ Classroom Building	Office/ Classroom/ Lab	New Construction – 42,220

(Note: These square footage numbers have been changed from assignable square footage (ASF) to gross square footage (GSF) for purposes of analysis within this Supplemental EIR. Only conversions from ASF to GSF or clarifications in numbers were made here.)

Table 2-4: Updated Master Plan Improvements

Project	Function/Support	Scope (GSF)
Buildings QQ & RR Auto Body/ Diesel	Replace Buildings QQ & RR with new construction.	New Construction - 33,044 Remove – 18,102
Building 1 Humanities	General Academic Programs	New Construction - 35,000
Land Acquisition	Land on the northwest corner of Walnut Avenue and PCH	Acquisition - 32,400
Circulation Improvements	Campus-wide	New Construction
Signage Improvements	New electronic informational sign adjacent to PCH	New Construction
Photovoltaic Projects	PCC buildings will be studied for possible solar photovoltaic systems.	New Construction

(Note: These square footage numbers have been changed from assignable square footage (ASF) to gross square footage (GSF) for purposes of analysis within this Supplemental EIR. Only conversions from ASF to GSF or clarifications in numbers were made here.)

The following descriptions identify specific improvements recommended for the 2020 Unified Master Plan PCC Improvements which were not part of the 2004 Master Plan.

- Buildings QQ and RR will be removed and replaced with a new 33,044 GSF building.
- New Building 1 will be constructed adjacent to Building MM to the southwest. It will consist of 35,000 GSF and will support the General Academic Programs.
- LBCCD will acquire 32,400 square feet of land adjacent to the PCC at the northwest corner of Walnut Avenue and PCH.
- Two new campus vehicle drop-off zones will be added in front of Building EE and between the Library and Parking Structure. Ray Avenue is proposed to include a dedicated service lane for electrical and small campus motorized maintenance vehicles. A new service lane is proposed to be located on the north side of Buildings GG for access.
- An electronic information sign will be installed adjacent to PCH near the corner of PCH and Orange Avenue. This sign will be approximately 26 feet tall and 9 feet wide.
- PCC buildings will be studied for possible solar photovoltaic systems. The first system will be placed on the roof of the addition to Building MM, and others may be added if appropriate rooftops are identified.

Figure 2-4: LBCC 2020 Master Plan Improvements

EXISTING FACILITY

A,B,D&E MULTI-DISCIPLINARY
D FITNESS CENTER
F FINE ARTS / SENIOR CENTER
G STUDENT SERVICES
H CHILD DEVELOPMENT CENTER
L LEARNING RESOURCE CENTER
N HORTICULTURE
K GREENHOUSE

E BOND PROGRAM

A,B,D&E MULTI-DISCIPLINARY
G STUDENT SERVICES
H CHILD DEVELOPMENT CENTER
I TECHNOLOGY PHASE 1
J TECHNOLOGY PHASE 2
L LEARNING RESOURCE CENTER
K INFRASTRUCTURE - RESTROOMS
Y INFRASTRUCTURE - CENTRAL PLANT / SATELLITE MAINTENANCE

2020 PROGRAM

D FITNESS CENTER
F FINE ARTS / SENIOR CENTER
G STUDENT SERVICES
M CONSTRUCTION TRADES
O AUTO BODY
R DIESEL MECHANICS
1 HUMANITIES BUILDING
2 PARKING STRUCTURE

N

LEGEND

- EXISTING FACILITY WITH NO ACTION
- EXISTING FACILITY RENOVATION E BOND
- NEW FACILITY E BOND
- RENOVATION 2020 PROGRAM
- NEW CONSTRUCTION 2020 PROGRAM

PCC FACILITY SITE PLAN

The 2020 Facility Site Plan illustrates building projects included in the Measure E Bond Program and in the proposed 2020 plan. The plan shows growth of campus programs primarily through replacement and renovation in the areas where programs are currently located. Buildings I, J, and L are presently under construction as part of the Measure E Program. Proposed building zones for new construction in the 2020 building/facilities program are noted for Buildings 1, 2, M, R and Q. Replacement buildings are shown in the current configuration only to illustrate site size. A more finite building footprint will be developed as the project scope becomes more fully defined.

Figure 2-4
2020 Unified Master Plan PCC

Name: 21037 PCC Fig 2-4 2020 Master Plan.Mxd
Print Date: 8/31/2017, Author: msimmons
CHAMBERS GROUP

2.2 PROJECT DESCRIPTION

2.2.1 2041 Facilities Master Plan PCC Improvements

Since the 2020 Unified Master Plan, the District has prepared the LBCCD 2041 Facilities Master Plan to provide an understanding of the projects envisioned to be constructed in the near future. This Facilities Master Plan breaks down the type and size of each project for both campuses, as well as estimating the probable cost of each project. The 2041 Facilities Master Plan allows the District to re-evaluate available funds and expanded details of priority projects that the District is working to complete. Enrollment and the production of WSCH were used as the basis for quantifying growth as well as for determining the space needs of the future. The year 2041 was selected as the "target year." Based on the growth rates, the vectors for enrollment and WSCH were determined to intersect with the physical capacity of the two campuses at or about year 2041. Physical capacity was defined by the District as achieving student enrollment of 8,440 and 105,074 WSCH at PCC. At this point in time, the campus will have effectively reached its physical limit for available land area, for parking, and the ability to effectively serve students.

Looking to the year 2041, PCC's priorities will lie with addressing key areas for academic growth. These include the Construction Trades Buildings and Electrical/Lifetime Learning buildings. From the Student Services side of the equation, a new parking structure as well as walkways and wayfinding are a high priority.

2.3 PROJECT DESIGN FEATURES

2.3.1 Master Plan Updates

The 2041 Facilities Master Plan provides updates to the 2020 Unified Master Plan and provides updated construction dates and budgets for the facilities projects. The projects incorporate the space and building needs identified to the year 2041. Figure 2-5 presents the LBCC 2041 Facilities Master Plan PCC improvements. Table 2-5 presents the updates to the Master Plan through new project details determined since the previous SEIR.

Figure 2-5: LBCC 2041 Facilities Master Plan PCC Improvements

Figure 2-5
2041 Unified Master Plan PCC

Name: 21037 PCC Fig 2-5 2041 Master Plan.Mxd
Print Date: 8/31/2017, Author: msimmons

Table 2-5: Updated 2041 Facilities Master Plan Improvements

Project	Scope/Usage	Scope (GSF)
Building FF Fine Arts/Senior Center	Demolition of building due to the age of the facility and overall condition. Site will be utilities for a new campus entry including a drop-off area and vehicular turnabout	Demolition – 10,640
Building MM Construction Trades (Phase 1)	Major renovation of existing facility and construction of an addition to the building. Renovation includes upgrades to electrical systems, ADA access compliance, HVAC replacement, lighting, plumbing, and aesthetic improvements	New Construction – 5,307 Renovation: 11,352 New Covered Canopies: 6,466
Building MM Construction Trades (Phase 2)	New construction to provide space for the Drafting and Architecture programs	New Construction – 19,383 Demolition – 26,240
Building OO Classroom	Construction of a new instructional building for interdisciplinary classroom facilities	New Construction – 150,000
Building P2 Parking Structure	Remove existing Buildings UU and VV, New multi-story parking structure to serve approximately 500-600 vehicles	New Construction - 178,392 Remove: 15,550
Buildings QQ & RR Electrical/Dyer Hall/Lifetime Learning	Remove Existing Buildings QQ, OO, &PP, Comprehensive renovation of existing RR building, construction of new QQ building, and new landscaping and hardscaping	New Construction – 24,454 Renovation: 6,823 Remove: 18,102
Walkways & Wayfinding	New and revised walkways, installation of uniform signage program to allow for more efficient wayfinding	New Construction

ADA: Americans with Disabilities Act; HVAC: heating, ventilation, and air conditioning

The LBCCD 2041 Facilities Master Plan PCC improvements would result in an estimated change over the 2020 Unified Master Plan of a decrease in 10,640 square feet of renovation, an increase of 232,372 square feet of new construction, and 10,640 square feet removed.

The following descriptions identify specific improvements recommended for the 2041 Facilities Master Plan PCC improvements that were not part of the 2020 Unified Master Plan or the original 2004 PCC Master Plan Program EIR.

- Building FF (10,640 GSF) will be removed instead of renovated, and the area will be utilized for a new campus entry including a student drop-off area and vehicular turnabout.
- Building MM (Phase 1) will involve a total of 5,307 square feet of new building and 6,446 square feet of new canopy instead of 14,286 gross square feet (GSF) which is shown on 2020 Master Plan (2,513 GSF of reduction in new construction).
- Building MM (Phase 2) will involve a total of 19,383 square feet of additional new building construction and demolition of approximately 26,240 of existing building.
- Building OO (formerly Building 1 Humanities in the 2020 Unified Master Plan) will increase in size of new construction from 35,000 gross square feet to 150,000 gross square feet.

- Existing Buildings UU and VV will be removed, and a new multi-story parking structure will be constructed to serve approximately 500 to 600 vehicles. The Gross Square Footage will increase from 72,300 to approximately 178,392 square feet.

- Building YY Central Plant will increase new construction by approximately 3,000 GSF to allow for an increase in the capacity of the existing central plant.

- Drought-tolerant landscape and hardscape improvements will be made to the existing landscaped areas south and west of Building BB along the PCH and Orange Avenue.

- In order for the District to meet the State requirements and Executive Order B-18-12 for Zero-Net-Energy, PCC campus will be studied for possible solar photovoltaic systems at various locations.

Master Plan Schedule

The 2041 Facilities Master Plan provides an approximate schedule sequence that identifies timelines for construction and project scope. Table 2-5 summarizes the scope of the 2041 Facilities Master Plan Improvements including building renovation, expansion, and/or new construction. To determine the projects and sequencing in the 2041 Facilities Master Plan, the Board of Trustees of the Long Beach Community College District (Board) evaluated the District's urgent and critical capital needs, including school and student safety issues; enrollment trends; class size reduction; overcrowding; energy efficiency and computer technology; seismic safety requirements; and aging, outdated or deteriorating school buildings, in developing the scope of projects to be funded. In developing the scope of projects, the District has prioritized the key health and safety and sustainability needs so that the most critical school site needs are addressed.

The timing of certain projects will be dependent on the completion of other projects and will ultimately occur over the different phases. For example, landscape improvements will occur across the PCC; however, these improvements will be completed in portions following building construction or renovation. Other projects sequenced like this include the security systems installation, technology replacement, energy and water conservation projects, and surface parking improvements.

The Master Plan projects called out the projects identified in the 2041 Facilities Master Plan and the time frame that is most likely to occur during these time periods. However, the time frame in which a project is planned may change if the priority characteristics change for an individual project due to program needs or state funding allocation. The general amount of building scope by phase is shown in Table 2-5 for the 2004 Unified Master Plan and in Table 2-6 for the 2041 Facilities Master Plan Updates.

Table 2-6: 2041 Facilities Master Plan Construction by Planned Construction Years

Construction Start Year	Projects Planned
Ongoing	Minor Campus Improvements, Infrastructure Projects, Campus Landscaping, District Security Monitoring Systems
To Be Determined	Walkways & Wayfinding, Surface Parking Improvement
2019/2020	Building P2 – Parking Structure, Joint Use Facility
2020/2021	Building MM – Construction Trades Phase 1
2021/2022	Building MM – Construction Trades Phase 2
2022/2024	Building OO - Classroom
2023/2024	Building FF – Demolish Fine Arts/Senior Center

Design Guidelines

The Design Guidelines of the 2004 PCC Master Plan are incorporated by reference into the 2041 Facilities Master Plan. The Design Guidelines include "Guiding Principles" that govern the design of the proposed campus improvements, including buildings, parking areas, landscaping, pavement and courtyards, traffic/circulation, signage, lighting, site furnishings, and screening. According to the Design Guidelines:

- Design objectives and guidelines used for the improvement of the architectural character at the LBCC PCC are based on new construction, rehabilitation of existing buildings, and demolition or removal of obsolete or deteriorated facilities.

- Two design neighborhoods, the original Art Deco neighborhood and the balance of the campus called the "Modern" neighborhood, should be considered.

- New facility design should contribute to a unified campus appearance with a consistent architectural character. All future construction in the neighborhood of the original Art Deco (i.e., Buildings, AA, BB, CC, DD, and FF) shall employ a unifying architectural vernacular based on a contemporary interpretation of the original Art Deco style. The Art Deco neighborhood including the demolition of Building FF and construction of the new campus entry and drop-off area shall conform to the standards for this neighborhood.

2.3.2 Best Management Practices

All Best Management Practices (BMPs) from the PEIR will be incorporated by reference in the NOP/IS, as well as the Final SEIR for the 2041 Facilities Master Plan.

2.4 STATEMENT OF PROJECT GOALS AND OBJECTIVES

The District's goal as part of the California community college system is to offer academic and vocational education to students at the lower college division level. In addition, the District's goal is to advance California's economic growth and global competitiveness through education, training, and services that contribute to continuous workforce improvement.

The objective of the 2041 Facilities Master Plan is to provide plans to implement proposed necessary construction, renovation, and general capital improvements at the campus in order to meet the District's goals. The improvements are intended to update and improve existing technological and program services in order to meet the increasing needs of students and faculty. Specific objectives that have been identified by the LBCCD include the following:

- Provide equitable student learning and achievement, academic excellence, and workforce development by delivering high quality education programs and support services to diverse communities
- Provide clear pathways to students to achieve their career and educational goals through providing adequate facilities to support the ability for students to earn an associate degree or certificate solely within each campus, without having to take classes at both campuses
- Provide upgraded athletic facilities that support physical activity on campus and provide opportunities for organized recreational use for the community
- Provide renovated classrooms and educational facilities in order to properly serve current and future students on campus
- Ensure a sustainable and state-of-the-art facilities infrastructure

2.5 REQUIRED PERMITS AND APPROVALS

As required by the *CEQA Guidelines*, this section provides, to the extent the information is known to LBCCD, the CEQA Lead Agency, a list of the agencies that are expected to use this SEIR in their decision-making, and a list of permits and other approvals required to implement the Project.

2.5.1 Lead Agency Approval

The Final SEIR must be certified by the LBCCD Board for its adequacy to comply with the requirements of CEQA before taking any action on the Proposed Project. The Board will consider the information contained in the SEIR in making a decision to approve or deny the 2041 Facilities Master Plan PCC Improvements that were not previously addressed under the 2020 Unified Master Plan PCC or the 2004 PEIR (Proposed Project). The analysis in the SEIR is intended to provide environmental review for the whole of the Proposed Project, including the project planning, site acquisition, demolition of existing structures, site clearance, site excavation, and construction of school buildings and appurtenant facilities in accordance with CEQA requirements.

2.5.2 Required Permits and Approvals

A Responsible Agency is a public agency, other than the lead agency, that has discretionary approval power over a project. The Responsible Agencies, and their corresponding approvals, for this project include the following:

California Department of General Services

- Division of the State Architect (Approval of architectural plans)

City of Long Beach

- Department of Public Works (Approval of on- and off-site drainage infrastructure and roadway improvements)

Reviewing Agencies

Reviewing Agencies include those agencies that do not have discretionary powers but that may review the SEIR for adequacy and accuracy. Potential Reviewing Agencies include the following:

State Agencies

- Department of Transportation (Caltrans)
- Environmental Protection Agency (Cal EPA)
- California Department of Fish and Wildlife (CDFW)

Regional Agencies

- Southern California Association of Governments (SCAG)
- South Coast Air Quality Management District (SCAQMD)

2.6 CUMULATIVE SCENARIO

Cumulative impacts refer to the combined effect of Proposed Project impacts with the impacts of other past, present, and reasonably foreseeable future projects. Both CEQA and the *CEQA Guidelines* require that cumulative impacts be analyzed in an EIR. As set forth in the *CEQA Guidelines*, the discussion of cumulative impacts must reflect the severity of the impacts, as well as the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone. As stated in CEQA, "a project may have a significant effect on the environment if the possible effects of a project are individually limited but cumulatively considerable."

According to the *CEQA Guidelines*:

"'Cumulative impacts' refer to two or more individual effects which, when considered together, are considerable and which compound or increase other environmental impacts.

- The individual effects may be changes resulting from a single project or a number of separate projects.

- The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the Proposed Project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

In addition, as stated in the *CEQA Guidelines*, it should be noted that:

> "The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the Proposed Project's incremental effects are cumulatively considerable."

Cumulative impact discussions for each issue area are provided in the technical analyses contained within Chapter 3 (Environmental Analysis).

As previously stated, and as set forth in the *CEQA Guidelines*, related projects consist of "closely related, past, present, and reasonable foreseeable probable future projects that would likely result in similar impacts and are located in the same geographic area." An area of influence, defined by an approximate 1.5-mile radius from the Proposed Project Site, was utilized in order to capture specific locations of other approved and pending projects. Based on coordination with the City of Long Beach, an area projects list was created. Responses that were received from the City were incorporated in the analysis. A majority of the study area is located in an already highly urbanized area. The ability to develop new major projects within or adjacent to the study area is limited. Thirty pending/approved developments were identified in the City of Long Beach within the study area:

- Alamitos Concession Rebuild Project – western end of Alamitos Beach
- Adult daycare facility – 3311 East Willow Street
- Shoreline Gateway East Tower – 777 East Ocean Boulevard
- New Long Beach Civic Center – north of Ocean Boulevard, south of Broadway, between Magnolia Avenue and Pacific Avenue
- Drake Park Soccer Field – Between Loma Vista Drive and De Forest Avenue/Los Angeles River
- Long Beach Sports Park – south of Spring Street, bounded by California Avenue and Orange Avenue
- New retail/carwash – 4201 East Willow Street
- Ocean Boulevard Project – 1628-1724 Ocean Boulevard
- LBCIC Owned Properties – south of 14th Street between Pacific Avenue and Pine Avenue
- Adaptive Reuse Residential Project – 936 Pine Avenue
- Five-story Residential Development – 507 Pacific Avenue
- Adaptive Reuse Residential Beeks Building – 944 Pacific Avenue
- Seven-story Residential Development – 1112 Locust Avenue
- Five-story Residential Development – 425 East 5th Street
- Eight-story Mixed-use Development – 1101 Long Beach Boulevard
- Two 8-story Residential Buildings – 635 Pine Avenue/636 Pacific Avenue
- Silversands – 2010 East Ocean Boulevard
- Broadway Block – Northwest corner of Broadway and Long Beach Boulevard
- Residential Units – 320 Alamitos Avenue
- Residences at Linden Mixed-Use Project – 135 Linden Avenue
- Broadway/Promenade Site – 127-135 East Broadway
- Seven-story Residential Development – 125 Broadway
- Fast food restaurant with drive-through – 2528 North Lakewood Boulevard
- Pacific Edge Industrial – 2300 Redondo Avenue
- Medical Office Building – 1955 and 1965 Long Beach Boulevard
- Three-story Residential Development – 540-558 East Willow Street
- Residential Units over Commercial space – 101 Pacific Coast Highway
- Commercial Building Modification – 622 -628 East Anaheim Street
- Salvation Army Gym – 3012 Long Beach Boulevard
- Commercial Parking Lot and Passive Park – 2600 California Avenue

Seven pending/approved developments were identified by Signal Hill within the study area:

- Crescent Square – northeast corner of Walnut and Crescent Heights Street
- Zinna – 1500 East Hill Street
- The Courtyard – 19369 Temple Avenue
- Single-family residential – 2599 Pacific Coast Highway
- Office Building – 2351 Walnut Avenue
- Industrial Park – 2020 Walnut Avenue
- Honda Expansion – 1500 East Spring Street

SECTION 3.0 – ENVIRONMENTAL ANALYSIS

3.1 ENVIRONMENTAL ISSUES ADDRESSED

An Initial Study (IS) was prepared for the Proposed Project in February 2018 (see Appendix A). Based on the findings documented in the IS, LBCCD determined that a Supplemental Environmental Impact Report (SEIR) would be required for the Proposed Project. Environmental issue areas are listed in Table 3-1 by the level of significance of their impacts, as determined by the IS process. Those issue areas identified in the IS as having potentially significant impacts are further analyzed in this EIR.

Table 3-1: Summary of Environmental Impacts Identified in the Initial Study

No Impact	Less Than Significant Impact	Potentially Significant Impact
Agricultural and Forestry Resources	Aesthetics	Air Quality
Land Use and Planning	Biological Resources	Greenhouse Gas Emissions
Mineral Resources	Cultural Resources (with mitigation)	Noise
Population and Housing	Energy	Transportation
Public Services	Geology and Soils	
Tribal Cultural Services	Hazards and Hazardous Materials	
	Hydrology and Water Quality	
	Recreation	
	Utilities and Service Systems	

LBCCD used the IS, as well as agency and public input received during the public comment period (February 8, 2018 to March 9, 2018), to determine the final scope for this SEIR. The four issue areas and their corresponding subchapter numbers discussed in the SEIR include:

- 3.4 – Air Quality
- 3.5 – Greenhouse Gas Emissions
- 3.6 – Noise
- 3.7 – Transportation and Traffic

Chapters 3.4 through 3.7 provide a detailed discussion of the environmental setting, applicable project design features, impacts associated with the Proposed Project, cumulative impacts, and mitigation measures designed to reduce significant impacts. Where impacts cannot be reduced to a less than significant level, LBCCD shall consider adopting a Statement of Overriding Considerations.

3.2 ORGANIZATION OF ENVIRONMENTAL ANALYSIS

To assist the reader in comparing information about the various environmental issues, each chapter contains the following information.

- Introduction
- Existing Environmental Setting
- Applicable Regulations
- Impacts and Mitigation
    - Methodology

- Criteria for Determining Significance
- Project Impacts
  - Mitigation Measures
  - Residual Impacts
- Cumulative Impacts
  - Mitigation Measures
  - Residual Impacts

3.3 TERMINOLOGY USED IN THIS ANALYSIS

For each question listed in the IS checklist, a determination of the level of significance of the impact is provided. Impacts are categorized in the following categories:

- **No Impact.** A designation of *no impact* is given when no adverse changes in the environment are expected.

- **Less Than Significant.** A *less than significant impact* would cause no substantial adverse change in the environment.

- **Less Than Significant with Mitigation.** A *potentially significant (but mitigable) impact* would have a substantial adverse impact on the environment but could be reduced to a less-than-significant level with incorporation of mitigation measure(s).

  Potentially Significant. A *significant and unavoidable impact* would cause a substantial adverse effect on the environment and no feasible mitigation measures would be available to reduce the impact to a less-than-significant level.

3.4 AIR QUALITY

3.4.1 Introduction

This section provides information on ambient air quality conditions in the vicinity of the Proposed Project Site, and potential impacts to air quality as a result of the construction and operation of the Proposed Project are identified. The air quality modeling output is included in this EIR as Appendix B.

3.4.2 Existing Environmental Setting

Long Beach City College (LBCC) Pacific Coast Campus (PCC) is located at 1305 East Pacific Coast Highway in Long Beach, California. The City of Long Beach is located on the Pacific Coast of southern California in the southwest region of the Los Angeles Basin, approximately 20 miles south of Los Angeles.

The Project Site is located in the southern region of the City of Long Beach. California is divided into 15 air basins based on meteorological and geographical similarity. The Proposed Project area lies within the South Coast Air Basin (Air Basin), which exhibits a distinctive climate due to its unique terrain and geographic location. The Air Basin incorporates approximately 12,000 square miles within four counties – all of Orange County, most of Los Angeles and Riverside Counties, and the western portion of San Bernardino County. The Air Basin is a coastal plain with broad valleys and low hills and is bounded by the Pacific Ocean from the southwest and by the San Gabriel, San Bernardino, and San Jacinto Mountains from the northeast. The region lies in the semipermanent high pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The usually mild climatological pattern is interrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds.

Air quality within the Air Basin is some of the worst in the United States. The Air Basin has the highest recorded concentrations of ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), and particulate matter. The extent and severity of the air pollution is a function of the area's natural physical characteristics (weather and topography), as well as man-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and/or dispersion of pollutants throughout the Air Basin.

Regional Climate

The Air Basin experiences a Mediterranean climate characterized by warm summers, mild winters, infrequent rainfall, and plentiful sunshine. The Pacific Ocean is the primary moderating influence on the climate pattern, but the coastal mountain ranges lying along the north and east sides of the Air Basin act to buffer extreme summer heat and winter cold temperatures occurring in the interior desert and plateau areas.

The Proposed Project Site lies in the southwestern portion of Los Angeles County, within the boundaries of the City of Long Beach. The normal daily maximum temperature is 83.9 degrees Fahrenheit (°F) in August, while the normal daily minimum temperature is 45.3 °F in December according to the Western Regional Climate Center (2016). The area typically experiences warm, dry summers, and the annual average total precipitation is 12.01 inches (predominantly occurring in the winter and early spring months).

Wind patterns across the south coastal region are characterized by westerly and southwesterly on-shore winds during the day and easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season.

Between the periods of dominant airflow, periods of air stagnation may occur, both in the morning and evening hours. Whether such a period of stagnation occurs is one of the critical determinants of air quality conditions on any given day. Although the Air Basin has a semi-arid climate, the air near the surface is generally moist due to the presence of a shallow marine layer. With very low average wind speeds, a limited capacity exists to disperse air contaminants (e.g., smog) horizontally. The dominant daily wind pattern is an onshore 8 to 12 miles per hour (mph) daytime breeze and an offshore 3 to 5 mph nighttime breeze. The typical wind flow pattern fluctuates only with occasional wind storms, or strong northeasterly Santa Ana winds from the mountains and deserts northeast of the Air Basin. During the winter and fall months, surface high pressure systems over the Air Basin, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally have durations of a few days before predominant meteorological conditions are reestablished.

On virtually all spring and early summer days, most of the pollution produced during an individual day is moved out of the Air Basin through mountain passes or is lifted by the warm vertical current produced by the heating of adjacent mountain slopes. In those seasons, the Air Basin can be "flushed" of pollutants by a transport of ocean air in the afternoon.

From late summer through the winter months, flushing is less pronounced because of lower wind speeds and earlier appearance of offshore winds. With extremely stagnant wind flows, the drainage winds may begin near the mountains by late afternoon. Remaining pollutants are trapped and begin to accumulate during the night and the following morning. A low average morning wind speed in pollution source areas is an indicator of stagnation potential and pollutant accumulation.

Vertical dispersion of air pollutants in the Air Basin is hampered by the presence of a temperature inversion in the layers of the atmosphere near the surface of the Earth. In a normal situation, temperatures decrease with altitude and air continues to rise because it remains warmer than the surrounding air. With an inversion layer, air cannot expand upward because the warmer air above traps it. However, as day progresses and the sun warms the ground, the surface layer of the air approaches a temperature equal to the temperature of the inversion layer. When these temperatures become equal, the inversion layer begins to erode at the lower edge. If enough warming takes place, the inversion layer becomes weaker and weaker and finally "breaks." The surface air layers will then mix upward without limit. This phenomenon is frequently observed in the middle or late afternoon on hot summer days when the smog appears to clear up suddenly. Winter inversions frequently break by mid-morning, preventing contaminant build-up. The combination of low wind speeds and low level inversions produces the greatest concentration of pollutants. On high wind days, air pollutants are swept and carried in the air. On days of no inversion or on days of wind speed averaging 15 mph, concentration of pollutants is minimal, independent of season.

Air Pollutants of Concern

Criteria Air Pollutants

Federal and state laws regulate the air pollutants emitted into the ambient air by stationary and mobile sources. These regulated air pollutants are known as "criteria air pollutants" and are categorized as

primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NOx), sulfur dioxide (SO_2), and most fine particulate matter (PM_{10}, $PM_{2.5}$) including lead (Pb) and fugitive dust; are primary air pollutants. Of these CO, SO_2, PM_{10}, and $PM_{2.55}$ are criteria pollutants. VOC and NOx are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants.

Toxic Air Contaminants

The public's exposure to toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the Federal Act (42 United States Code [U.S.C.] Sec. 7412[b]) is a toxic air contaminant. Under State law, the California Environmental Protection Agency (Cal EPA), acting through the California Air Resources Board (CARB), is authorized to identify a substance as a TAC if it determines the substance is an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness or which may pose a present or potential hazard to human health.

One of the primary health risks of concern due to exposure to TACs is the risk of contracting cancer. The carcinogenic potential of TACs is a particular public health concern because it is currently believed by many scientists that there is no "safe" level of exposure to carcinogens; that is, any exposure to a carcinogen poses some risk of causing cancer. Health statistics show that one in four people, or 250,000 in a million, will contract cancer over their lifetime, from all causes, including diet, genetic factors, and lifestyle choices.

Unlike carcinogens, for most noncarcinogens it is believed that there is a threshold level of exposure to the compound below which that compound will not pose a health risk. The Cal EPA and California Office of Environmental Health Hazard Assessment (OEHHA) have developed reference exposure levels (RELs) for noncarcinogenic TACs that are health-conservative estimates of the levels of exposure at or below which health effects are not expected. The noncancerous health risk due to exposure to a TAC is assessed by comparing the estimated level of exposure to the REL. The comparison is expressed as the ratio of the estimated exposure level to the REL, called the hazard index (HI).

Other Effects on Air Pollution

Just as humans are affected by air pollution, so too are plants and animals. Animals must breathe the same air and are subject to the same types of negative health effects. Certain plants and trees may absorb air pollutants that can stunt their development or cause premature death.

Numerous additional impacts to the human economy include lost workdays due to illness, a desire on the part of business to locate in areas with a healthy environment, and increased expenses from medical costs. Pollutants may also lower visibility and cause damage to property. Certain air pollutants are responsible for discoloring painted surfaces, eating away at stones used in buildings, dissolving the mortar that holds bricks together, and cracking tires and other items made from rubber.

3.4.3 Applicable Regulations

The Proposed Project would be constructed in the City of Long Beach in Los Angeles County, within the South Coast Air Basin coastal area. The following subsections present a summary of air quality regulatory requirements for the 2041 Facilities Master Plan for the Pacific Coast Campus Improvements.

Federal Ambient Air Quality Standards

Air quality is defined by ambient air concentrations of specific pollutants identified by the United States Environmental Protection Agency (USEPA) to be of concern with respect to health and welfare of the general public. The USEPA is responsible for enforcing the Federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below for which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for six primary air pollutants (called "criteria" pollutants): ozone (O_3), sulfur dioxide (SO_2), carbon monoxide (CO), nitrogen dioxide (NO_2), lead (Pb), respirable particulate matter equal to or smaller than 10 microns in diameter (PM_{10}), and fine particulate matter equal to or smaller than 2.5 microns in diameter ($PM_{2.5}$). Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere.

Areas that do not meet the NAAQS for a particular pollutant are considered to be "nonattainment areas" for that pollutant. As part of its enforcement responsibilities, the USEPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The SIP must integrate federal, State, and local components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the time frame identified in the SIP. The CARB defines attainment as the category given to an area with no violations in the past three years. As indicated below in Table 3-2, the Air Basin has been designated by USEPA for the national standards as a nonattainment area for ozone (O_3) and suspended particulates (PM_{10} and $PM_{2.5}$) and partial nonattainment for lead. Currently, the Air Basin is in attainment with the national ambient air quality standards for carbon monoxide (CO), sulfur dioxide (SO_2), and nitrogen dioxide (NO_2).

Table 3-2: South Coast Air Basin Attainment Status

Criteria Pollutant	Standard	Averaging Time	Designation	Attainment Date
CO	NAAQS	1971 1-Hour (35 ppm)	Attainment (Maintenance)	6/11/2007 (attained)
	CAAQS	1-Hour (20 ppm)	Attainment	N/A (attained)
	NAAQS	8-Hour (9 ppm)	Attainment (Maintenance)	6/11/2007 (attained)
	CAAQS	8-Hour (9 ppm)	Attainment	N/A (attained)
Pb	NAAQS	2008 3-Months Rolling (0.15 µg/m^3)	Nonattainment (Partial) (Attainment determination requested)	12/31/15
	CAAQS	30-Day Average (1.5 µg/m^3)	Attainment	N/A (attained)
NO_2	NAAQS	2010 1-Hour (100 ppb)	Unclassifiable/Attainment	N/A (attained)
	CAAQS	1-Hour (180 ppb)	Attainment	N/A (attained)
	NAAQS	1971 Annual (53 ppb)	Attainment (Maintenance)	9/22/1998 (attained)
	CAAQS	Annual (30 ppb)	Attainment	N/A (attained)
O_3	NAAQS	1979 1-Hour (0.12 ppm)	Nonattainment (Extreme)	2/26/2023 (revised deadline)
	CAAQS	1-Hour (0.09 ppm)	Nonattainment	N/A
	NAAQS	2015 8-Hour (0.070 ppm)	Pending – Expect Nonattainment (Extreme)	Pending (beyond 2032)
	NAAQS	2008 8-Hour (0.075 ppm)	Nonattainment (Extreme)	7/20/2032
	NAAQS	1997 8-Hour (0.08 ppm)	Nonattainment (Extreme)	6/15/2024
	CAAQS	8-Hour (0.070 ppm)	Nonattainment	N/A
PM_{10}	NAAQS	1987 24-Hour (150 µg/m^3)	Attainment (Maintenance)	7/26/2013 (attained)
	CAAQS	24-Hour (50 µg/m^3)	Nonattainment	N/A
	CAAQS	Annual (20 µg/m^3)	Nonattainment	N/A
$PM_{2.5}$	NAAQS	2006 24-Hour (35 µg/m^3)	Nonattainment (Serious)	12/31/2019
	NAAQS	2012 Annual (12 µg/m^3)	Nonattainment (Moderate)	12/31/2021
	NAAQS	1997 Annual (12 µg/m^3)	Attainment (final determination pending)	4/5/2015 (attained 2013)
	CAAQS	Annual (12 µg/m^3)	Nonattainment	N/A
SO_2	NAAQS	2010 1-Hour (75 ppb)	Designation Pending (expect Unclassifiable/Attainment)	N/A (attained)
	CAAQS	1-Hour (0.25 ppm)	Attainment	N/A (attained)
	NAAQS	1971 24-Hour (0.14 ppm)	Unclassifiable/Attainment	3/19/1979 (attained)
	CAAQS	24-Hour (0.04 ppm)	Attainment	N/A (attained)
	NAAQS	1971 Annual (0.03 ppm)	Unclassifiable/Attainment	3/19/1979 (attained)

Source: SCAQMD, 2016. µg/m^3 = micrograms per cubic meter; CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million; ppb = parts per billion.

State Regulatory Setting

The CARB is the agency responsible for regulation of air quality in the State of California. The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. The CARB has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants through the California Clean Air Act of 1988 and

also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. As indicated above in Table 3-2, the Air Basin is currently classified as a nonattainment area under the CAAQS for O_3, $PM_{2.5}$, and PM_{10}.

The CARB is the State regulatory agency with authority to enforce regulations to both achieve and maintain the NAAQS and CAAQS. The CARB is responsible for the development, adoption, and enforcement of the State's motor vehicle emissions program, as well as the adoption of the CAAQS. The CARB also reviews operations and programs of the local air districts and requires each air district with jurisdiction over a nonattainment area to develop its own strategy for achieving the NAAQS and CAAQS.

Local Regulatory Setting

The local air district has the primary responsibility for the development and implementation of rules and regulations designed to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, development of air quality management plans, and adoption and enforcement of air pollution regulations.

The South Coast Air Quality Management District (SCAQMD) is the local agency responsible for the administration and enforcement of air quality regulations for the Air Basin. The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county South Coast Air Basin, the Mojave Desert Air Basin, and the Riverside County portions of the Salton Sea Air Basin. The SCAQMD develops and administers local regulations for stationary air pollutant sources within the Air Basin and also develops plans and programs to meet attainment requirements for the NAAQS and the CAAQS. In addition, the SCAQMD, along with the CARB, maintains and operates ambient air quality monitoring stations at numerous locations throughout the Air Basin that monitor the ambient air quality.

The SCAQMD is responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the Air Basin. It has responded to this requirement by preparing a sequence of Air Quality Management Plans (AQMPs). The Final 2016 Air Quality Management Plan (2016 AQMP) was adopted by the SCAQMD Board on March 3, 2016, and was adopted by CARB on March 23, 2017, for inclusion into the California State Implementation Plan (SIP). The 2016 AQMP was prepared in order to meet the following standards:

- 8-hour ozone (75 parts per billion [ppb]) by 2032
- Annual $PM_{2.5}$ (12 micrograms per meters cubed [$\mu g/m^3$]) by 2021-2025
- 8-hour ozone (80 ppb) by 2024 (updated from the 2007 and 2012 AQMPs)
- 1-hour ozone (120 ppb) by 2023 (updated from the 2012 AQMP)
- 24-hour $PM_{2.5}$ (35 $\mu g/m^3$) by 2019 (updated from the 2012 AQMP)

In addition to meeting the above standards, the 2016 AQMP also includes revisions to the attainment demonstrations for the 1997 8-hour ozone NAAQS and the 1979 1-hour ozone NAAQS. The prior 2012 AQMP was prepared in order to demonstrate attainment with the 24-hour $PM_{2.5}$ standard by 2014 through adoption of all feasible measures. The prior 2007 AQMP demonstrated attainment with the 1997 8-hour ozone (80 ppb) standard by 2023 through implementation of future improvements in control techniques and technologies. These "black box" emissions reductions represent 65 percent of the remaining NOx emission reductions needed by 2023 in order to show attainment with the 1997 8-hour ozone NAAQS. Given the magnitude of these needed emissions reductions, additional NOx

control measures have been provided in the 2012 AQMP even though the primary purpose was to show compliance with 24-hour $PM_{2.5}$ emissions standards.

The 2016 AQMP provides a new approach that focuses on available, proven, and cost effective alternatives to traditional strategies, while seeking to achieve multiple goals in partnership with other entities to promote reductions in greenhouse gas (GHG) emissions and TAC emissions as well as efficiencies in energy use, transportation, and goods movement. The 2016 AQMP recognizes the critical importance of working with other agencies to develop funding and other incentives that encourage the accelerated transition of vehicles, buildings, and industrial facilities to cleaner technologies in a manner that benefits not only air quality but also local businesses and the regional economy.

Although SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with plans and new development projects throughout the Air Basin. Instead, this is controlled through local jurisdictions in accordance with CEQA. In order to assist local jurisdictions with air quality compliance issues the CEQA Air Quality Handbook (SCAQMD CEQA Handbook), prepared by SCAQMD (1993), with the most current updates found at http://www.aqmd.gov/ceqa/hdbk.html, was developed in accordance with the projections and programs detailed in the AQMPs. The purpose of the SCAQMD CEQA Handbook is to assist lead agencies, as well as consultants, project proponents, and other interested parties in evaluating a proposed project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures that SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. The SCAQMD intends that by providing this guidance, the air quality impacts of plans and development proposals will be analyzed accurately and consistently throughout the Air Basin, and adverse impacts will be minimized.

The following lists the SCAQMD rules that are applicable to but not limited to the Proposed Project.

Rule 402 - Nuisance

Rule 402 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or which endanger the comfort, repose, health, or safety of any such persons or the public; or which cause, or have a natural tendency to cause, injury or damage to business or property. Compliance with Rule 402 will reduce local air quality and odor impacts to nearby sensitive receptors.

Rule 403- Fugitive Dust

Rule 403 governs emissions of fugitive dust during construction activities and requires that no person shall cause or allow the emissions of fugitive dust such that dust remains visible in the atmosphere beyond the property line or the dust emission exceeds 20-percent opacity, if the dust is from the operation of a motorized vehicle. Compliance with this rule is achieved through application of standard Best Available Control Measures, which include but are not limited to the measures below. Compliance with these rules would reduce local air quality impacts to nearby sensitive receptors.

- Utilize either a pad of washed gravel 50 feet long, 100 feet of paved surface, a wheel shaker, or a wheel washing device to remove material from vehicle tires and undercarriages before leaving Project Site.
- Do not allow any track-out of material to extend more than 25 feet onto a public roadway and remove all track-out at the end of each workday.
- Water all exposed areas on active sites at least three times per day and pre-water all areas prior to clearing and soil-moving activities.
- Apply nontoxic chemical stabilizers according to manufacturer specifications to all construction areas that will remain inactive for 10 days or longer.
- Pre-water all material to be exported prior to loading, and either cover all loads or maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code Section 23114.
- Replant all disturbed areas as soon as practical.
- Suspend all grading activities when wind speeds (including wind gusts) exceed 25 mph.
- Restrict traffic speeds on all unpaved roads to 15 mph or less.

Rules 1108 and 1108.1 – Cutback and Emulsified Asphalt

Rules 1108 and 1108.1 govern the sale, use, and manufacturing of asphalt and limit the VOC content in asphalt. This rule regulates the VOC contents of asphalt used during construction as well as any ongoing maintenance during operations. Therefore, all asphalt used during construction and operation of the Proposed Project must comply with SCAQMD Rules 1108 and 1108.1.

Rule 1113 – Architectural Coatings

Rule 1113 governs the sale, use, and manufacturing of architectural coatings and limits the VOC content in sealers, coatings, paints, and solvents. This rule regulates the VOC contents of paints available during construction. Therefore, all paints and solvents used during construction and operation of the Proposed Project must comply with SCAQMD Rule 1113.

Rule 1143 – Paint Thinners

Rule 1143 governs the sale, use, and manufacturing of paint thinners and multi-purpose solvents that are used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations. This rule regulates the VOC content of solvents used during construction. Solvents used during construction and operation of the Proposed Project must comply with SCAQMD Rule 1143.

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and addresses regional issues relating to transportation, the economy, community development, and the environment. SCAG is

the federally designated Metropolitan Planning Organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), adopted April 2016 and the 2015 Federal Transportation Improvement Program (FTIP), adopted October 2013, which address regional development and growth forecasts. Although the RTP/SCS and FTIP are primarily planning documents for future transportation projects, a key component of these plans is to integrate land use planning with transportation planning that promotes higher density infill development in close proximity to existing transit service. These plans form the basis for the land use and transportation components of the AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The RTP/SCS, FTIP, and AQMP are based on projections originating within the City and County General Plans.

Existing Ambient Air Quality Monitoring Data

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the Air Basin. Estimates of the existing emissions in the Air Basin provided in the 2012 AQMP indicate that collectively, mobile sources account for 59 percent of the VOC, 88 percent of the NOx emissions and 40 percent of directly emitted $PM_{2.5}$, with another 10 percent of $PM_{2.5}$ from road dust. The 2016 AQMP found that since 2012 AQMP projections were made, stationary source VOC emissions have decreased by approximately 12 percent; but mobile VOC emissions have increased by 5 percent. The percentage of NOx emissions remained unchanged between the 2012 and 2016 projections.

SCAQMD has divided the Air Basin into 38 air-monitoring areas. The Project Site is located in Air Monitoring Area 4, which covers the South Coastal Los Angeles County monitoring region. Since not all air monitoring stations measure all of the tracked pollutants, the data from the following two monitoring stations, listed in the order of proximity to the Project Site, have been used: Long Beach Monitoring Station (Long Beach Station) and Compton Monitoring Station (Compton Station).

The Long Beach Station is located approximately 3 miles northwest of the Project Site at 2425 Webster Street, Long Beach; and the Compton Station is located approximately 8 miles northwest of the Project Site at 700 North Bullis Road, Compton. Table 3-3 presents the monitored pollutant levels from these Monitoring Stations. Ozone, PM_{10}, and NO_2 were measured at the Long Beach Station; and $PM_{2.5}$ was measured at the Compton Station. CO measurements have not been provided, since CO is currently in attainment in the Air Basin, and monitoring of CO within the Air Basin ended on March 31, 2013. It should also be noted that due to the air monitoring stations' distances from the Project Site, recorded air pollution levels at the air monitoring stations reflect, with varying degrees of accuracy, local air quality conditions at the Project Site.

Table 3-3: Ambient Air Quality Monitoring Summary

Pollutant (Standard)	Year		
	2014	**2015**	**2016**
Ozone			
Maximum 1-Hour Concentration (ppm)	0.087	0.087	0.079
Days > CAAQS (0.09 ppm)	0	0	0
Maximum 8-Hour Concentration (ppm)	0.072	0.067	0.059
Days > NAAQS (0.070 ppm)	**1**	0	0
Days > CAAQS (0.070 ppm)	**1**	0	0
Nitrogen Dioxide			
Maximum 1-Hour Concentration (ppb)	135.9	101.8	75.6
Days > NAAQS (100 ppb)	**2**	**1**	0
Respirable Particulate Matter (PM_{10})			
Maximum 24-Hour California Measurement (µg /m^3)	84.0	80.0	75.0
Days > NAAQS (150 µg /m^3)	0	0	0
Days > CAAQS (50 µg /m^3)	3	6	ND
Annual Arithmetic Mean (AAM) (µg /m^3)	29.6	31.5	31.9
Annual > NAAQS (50 µg /m^3)	No	No	No
Annual > CAAQS (20 µg /m^3)	**Yes**	**Yes**	**Yes**
Fine Particulate Matter ($PM_{2.5}$)			
Maximum 24-Hour National Measurement (µg /m^3)	35.8	41.3	36.3
Days > NAAQS (35 µg /m^3)	**1**	**3**	**1**
Annual Arithmetic Mean (AAM) (µg /m^3)	ND	11.7	11.0
Annual > NAAQS and CAAQS (12 µg /m^3)	ND	No	No

Notes: Exceedances are listed in **bold**. CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million; ppb = parts per billion; ND = no data available; µg/m^3 = micrograms per meters cubed.

Toxic Air Contaminant Levels in the Air Basin

In order to determine the Air Basin-wide risks associated with major airborne carcinogens, the SCAQMD conducted the Multiple Air Toxics Exposure Study (MATES) studies. According to the SCAQMD's MATES-IV study, the Project Site has an estimated cancer risk of 1309 per million persons chance of cancer. In comparison, the average cancer risk for the Air Basin is 991 per million persons, which is based on the use of age-sensitivity factors detailed in the OEHHA Guidelines (OEHHA 2015). The increased cancer risk is primarily due to proximity to Interstate 605, Interstate 405, Interstate 710, and the Long Beach Municipal Airport.

In order to provide a perspective of risk, it is often estimated that the incidence in cancer over a lifetime for the United States' population ranges between 1 in 3 to 4 and 1 in 3, or a risk of about 300,000 per million persons. The MATES-III study referenced a Harvard Report on Cancer Prevention, which estimated that of cancers associated with known risk factors, about 30 percent were related to tobacco, about 30 percent were related to diet and obesity, and about 2 percent were associated with environmental pollution-related exposures that include hazardous air pollutants.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. As adopted by the SCAQMD in their CEQA Air Quality Handbook (Chapter 4), a sensitive receptor is a person in the population who is particularly susceptible to health effects due to exposure to an air contaminant. Hazards and hazardous materials regulators typically define sensitive receptors as schools (Preschool through 12th Grade), hospitals, resident care facilities, residences or day-care centers, or other facilities that may house individuals with health conditions. Residential areas are considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Schools are also considered sensitive since children are present for extended durations and engage in regular outdoor activities. Recreational land uses are considered moderately sensitive to air pollution because exercise places a high demand on respiratory functions, which can be impaired by air pollution.

The nearest sensitive receptors are students and workers at the Mary Butler School, which is located adjacent to the proposed renovation activities. Guests and workers are present at the Days Inn hotel on the south side of Pacific Coast Highway, approximately 88 feet south of the proposed parking structure, which would be located on the northwest corner of Pacific Coast Highway and Walnut Avenue. Homes are near the PCC on the north side of 20th Street and west side of Orange Avenue.

3.4.4 Impacts and Mitigation

Impact 3.4-1: Conflict with or obstruct implementation of the applicable air quality plan.

The Proposed Project may conflict with or obstruct implementation of the SCAQMD Air Quality Management Plan (AQMP). The following section discusses the Proposed Project's consistency with the SCAQMD AQMP.

SCAQMD Air Quality Management Plan

CEQA requires a discussion of any inconsistencies between a proposed project and applicable General Plans (GPs) and regional plans (*CEQA Guidelines* Section 15125). The regional plan that applies to the Proposed Project includes the SCAQMD AQMP. Therefore, this section discusses any potential inconsistencies of the Proposed Project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the Proposed Project would interfere with the region's ability to comply with federal and State air quality standards. If the decision makers determine that the Proposed Project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended GP Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

(1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP

(2) Whether the project will exceed the assumptions in the AQMP or increments based on the year of project buildout and phase

Both of these criteria are evaluated in the following sections.

Criterion 1 – Increase in the Frequency or Severity of Violations?

The Project Site is located in the South Coast Air Basin, which is currently designated by the USEPA for federal standards as a nonattainment area for ozone and $PM_{2.5}$ and by CARB for the State standards as a nonattainment area for ozone, PM_{10}, and $PM_{2.5}$. Based on the air quality modeling and analysis contained in this report, short-term regional construction air emissions would not result in significant impacts based on SCAQMD regional thresholds of significance or local thresholds of significance discussed in Impact 3.2. The ongoing operation of the Proposed Project would generate air pollutant emissions that are inconsequential on a regional basis and would not result in significant impacts based on SCAQMD thresholds of significance. The analysis for long-term local air quality impacts showed that local pollutant concentrations would not be projected to exceed the air quality standards. Therefore, a less than significant long-term impact would occur, and no mitigation would be required.

Therefore, based on the information provided above, the Proposed Project would be consistent with the first criterion.

Criterion 2 – Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the Proposed Project with the assumptions in the AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the Proposed Project are based on the same forecasts as the AQMP. The AQMP is developed through use of the planning forecasts provided in the RTP/SCS and FTIP. The RTP/SCS is a major planning document for the regional transportation and land use network within southern California. The RTP/SCS is a long-range plan that is required by federal and State requirements placed on SCAG and is updated every four years. The FTIP provides long-range planning for future transportation improvement projects that are constructed with State and/or federal funds within southern California. Local governments are required to use these plans as the basis of their plans for the purpose of consistency with applicable regional plans under CEQA.

Development of the proposed 2041 Facilities Master Plan would result in the demolition of 44,292 square feet of existing structures, renovation of 20,111-square feet of existing buildings, and construction of 361,561-square feet of new building space. Project construction would employ dust control measures (i.e., watering twice daily, application of soil stabilizers, daily removal of track-out onto public roads, etc.) and would utilize only CARB-certified off-road equipment and stationary equipment and would therefore be in compliance with strategies in the AQMP (SCAQMD 2017) for attaining and maintaining the air quality standards. Construction of the Proposed Project would therefore not conflict or obstruct the implementation of the AQMP or applicable portions of the SIP.

According to the Traffic Impact Analysis (Linscott Law & Greenspan 2018), implementation of the proposed 2041 Facilities Master Plan is anticipated to result in the addition of 3,279 students to the PCC campus.

The project applicant has committed to a net zero building energy use campus by the buildout year 2041. To address the SCAQMD program for reducing toxic and smog-forming air pollutants from mobile sources, the Proposed Project would provide 18 electric vehicle (EV) charging stations that would be placed strategically throughout the campus. In addition, the PCC promotes the use of public transportation; and bus stops are currently located on Pacific Coast Highway and Orange Avenue, which are all in the immediate vicinity of the PCC. Operation of the Proposed Project would therefore be in compliance with strategies in the AQMP (SCAQMD 2017) for attaining and maintaining the air quality standards. Operation of the Proposed Project would therefore not conflict or obstruct the implementation of the AQMP or applicable portions of the SIP.

Therefore, based on the information provided above, the Proposed Project would be consistent with the second criterion.

Mitigation Measures

No mitigation measures are necessary.

Residual Impacts

Impacts would be less than significant.

Impact 3.4-2: Violate any air quality standard or result in a cumulatively considerable net increase in an existing or projected air quality violation.

Implementation of the proposed 2041 Facilities Master Plan may violate an air quality standard or contribute substantially to an existing or projected air quality violation. The following section calculates the potential air emissions associated with the construction and operations of the Proposed Project and compares the emissions to the following SCAQMD standards for regional air quality and local air quality.

Regional Air Quality

Many air quality impacts that derive from dispersed mobile sources, which are the dominate pollution generators in the Air Basin, often occur hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally very small and difficult to measure. Therefore, SCAQMD has developed significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the Air Basin with daily emissions that exceed any of the identified significance thresholds should be considered as having an individually and cumulatively significant air quality impact. The quantitative SCAQMD regional emission thresholds are shown in Table 3-4.

Table 3-4: Regional Air Quality Significance Thresholds

Criteria Pollutants Mass Daily Thresholds (pounds/day)		
Pollutant	**Construction**	**Operation**
NOx	100	55
VOC	75	55
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_X	150	150
CO	550	550
Lead	3	3

Source: SCAQMD, 2015.

Local Air Quality

Project-related air emissions may have the potential to exceed the State and federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. In order to assess local air quality impacts, the SCAQMD has developed Localized Significant Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. SCAQMD has also provided *Final Localized Significance Threshold Methodology* (LST Methodology), July 2008, which details the methodology to analyze local air emission impacts. The LST Methodology found that the primary emissions of concern are NO_2, CO, PM_{10}, and $PM_{2.5}$.

The LST Methodology provides Look-Up Tables with different thresholds based on the location and size of the project site and distance to the nearest sensitive receptors. The PCC is located in Source-Receptor Area 4, the South Coastal Los Angeles County area. Table 3-5 presents the LSTs for the South Coastal Los Angeles County area.

Table 3-5: Localized Significance Thresholds South Coastal LA County

Size of Source	Distance to Receptors (meters)				
	25	**50**	**100**	**200**	**500**
Allowable NOx Emissions (pounds/day)					
1 acre	46	47	55	72	113
2 acres	66	64	70	85	121
5 acres	99	94	101	112	143
Allowable CO Emissions (pounds/day)					
1 acre	574	789	1,180	2,296	7,558
2 acres	827	1,158	1,611	2,869	8,253
5 acres	1,503	1,982	2,613	4,184	10,198
Allowable PM_{10} Construction Emissions (pounds/day)					
1 acre	4	13	29	61	158
2 acres	7	21	37	70	167
5 acres	14	42	58	92	191
Allowable PM_{10} Operational Emissions (pounds/day)					
1 acre	1	3	7	15	38
2 acres	2	5	9	17	40

Table 3-5: Localized Significance Thresholds South Coastal LA County

Size of Source	Distance to Receptors (meters)				
5 acres	4	10	14	22	46
Allowable $PM_{2.5}$ Construction Emissions (pounds/day)					
1 acre	3	5	10	26	93
2 acres	5	7	13	30	101
5 acres	8	10	18	39	120
Allowable $PM_{2.5}$ Operational Emissions (pounds/day)					
1 acre	1	2	3	7	23
2 acres	1	2	4	8	25
5 acres	1	3	5	10	29

Source: SCAQMD Mass Rate Look-Up Tables, 2009.

In the event that emissions exceed these thresholds, modeling would be required to demonstrate that the Project's total air quality impacts result in ground-level concentrations that are below the State and federal Ambient Air Quality Standards, including appropriate background levels (shown in Table 3-3). In addition to impacts from criteria pollutants, project impacts may include emissions of pollutants identified by the State and federal government as TACs or hazardous air pollutants (HAPs). With regard to evaluating whether a project would have a significant impact on sensitive receptors, air quality regulators typically define sensitive receptors as schools (Preschool through 12th Grade), hospitals, resident care facilities, residences or day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. Any project which has the potential to directly impact a sensitive receptor located within 1 mile and results in a health risk greater than ten in one million would be deemed to have a potentially significant impact. Sensitive receptors in the area include the Mary Butler School, which is located adjacent to the Project Site, and single-family residences and hotel uses, which are located as near as 45 feet from the Project Site.

Construction Impacts

The California Emissions Estimator Model (CalEEMod) has been utilized to calculate the construction-related regional emissions from the Proposed Project, and the input parameters utilized in this analysis model printouts are provided in Appendix B. The worst-case summer or winter daily construction-related criteria pollutant emissions from the Proposed Project for each phase of construction activities are shown below in Table 3-6.

Table 3-6: Projected Construction Emissions Without CEQA Mitigation

Source	Pollutant Emissions (pounds/day)					
	VOC	NOX	CO	SO_X	PM_{10}	$PM_{2.5}$
Demolition[1]						
Onsite[2]	3.51	35.78	22.06	0.04	2.08	1.71
Offsite[3]	0.14	1.80	1.13	0.01	0.27	0.08
Total	**3.65**	**37.58**	**23.19**	**0.05**	**2.35**	**1.79**
Grading[1]						
Onsite	4.74	54.52	33.38	0.06	5.77	3.59
Offsite	0.14	0.78	1.15	0.00	0.27	0.08

Table 3-6: Projected Construction Emissions Without CEQA Mitigation

Source	Pollutant Emissions (pounds/day)					
	VOC	NOX	CO	SO_X	PM_{10}	$PM_{2.5}$
Total	**4.88**	**55.30**	**34.53**	**0.06**	**6.04**	**3.67**
Building Construction & Architectural Coating[4]						
Onsite	5.62	22.91	19.01	0.03	1.42	1.34
Offsite	1.97	11.81	16.47	0.06	3.85	1.10
Total	**17.21**	**47.18**	**52.87**	**0.15**	**9.33**	**3.60**
Paving						
Onsite	1.10	11.12	14.58	0.02	0.57	0.52
Offsite	0.07	0.04	0.56	0.00	0.17	0.05
Total	**1.17**	**11.16**	**15.14**	**0.02**	**0.74**	**0.57**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Notes: CO = carbon monoxide; NO_X = nitrogen oxides; PM = particulate matter; SO_X = sulfur oxides; VOC = volatile organic compounds.
[1] Demolition and Grading based on adherence to the SCAQMD Rule 403 fugitive dust suppression requirements.
[2] Onsite emissions from equipment not operated on public roads.
[3] Offsite emissions from vehicles operating on public roads.
[4] This analysis assumed that Building Construction and application of architectural coatings would occur concurrently.
Source: CalEEMod Version 2016.3.2 (see Appendix B).

As shown in Table 3-6, the emissions from construction activities associated with implementation of the 2041 Facilities Master Plan would be below the significance thresholds for all phases of construction. A less than significant impact would occur.

Construction-Related Local Impacts

Construction-related air emissions may have the potential to exceed the State and federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. The local air quality emissions from construction were analyzed through utilizing the methodology described in *Localized Significance Threshold Methodology* (LST Methodology), prepared by SCAQMD, revised October 2009. The LST Methodology found the primary criteria pollutant emissions of concern are NOx, CO, PM_{10}, and $PM_{2.5}$. In order to determine if any of these pollutants require a detailed analysis of the local air quality impacts, each phase of construction was screened using the SCAQMD's Mass Rate LST Look-Up Tables. The Look-Up Tables were developed by the SCAQMD in order to readily determine if the daily onsite emissions of CO, NOx, PM_{10}, and $PM_{2.5}$ from the Proposed Project could result in a significant impact to the local air quality.

The project that would be closest to offsite receptors would be the proposed renovations where the Mary Butler School is adjacent to the Project Site. Homes are also located as near as 45 feet (13 meters) from the Project Site. According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25-meter thresholds. Table 3-7 shows the onsite emissions from CalEEMod for the different construction phases and the calculated localized emissions thresholds that have been detailed above. Since this analysis assumed that building construction and architectural coating activities

would occur concurrently, Table 3-7 also shows the combined local criteria pollutant emissions from the building construction and architectural coating phases of construction.

Table 3-7: Projected Construction Local Criteria Pollutant Emissions Without CEQA Mitigation

Land Use Subtype in CalEEMod	Pollutant Emissions (pounds/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Demolition[1]	35.78	22.06	2.08	1.71
Grading[1]	54.52	33.38	5.77	3.59
Building Construction & Architectural Coating	22.91	19.01	1.42	1.34
Paving	11.12	14.58	0.57	0.52
SCAQMD Thresholds for 25 meters (82 feet)[2]	**66**	**827**	**7**	**5**
Exceeds Threshold?	No	No	No	No

Notes: CO = carbon monoxide; NO_X = nitrogen oxides; PM = particulate matter.
[1] Demolition and Grading based on adherence to the fugitive dust suppression requirements from SCAQMD Rule 403.
[2] The nearest sensitive receptors are homes located approximately 45 feet (13 meters) from the proposed construction and the Mary Butler School located adjacent to the proposed construction. According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25-meter threshold.
Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-Up Tables for 2 acres in Air Monitoring Area 4, South Coastal Los Angeles County.

Operational Impacts

Operational emissions were calculated using CalEEMod, Version 2016.3.2, to take into account area sources (energy use, landscaping, maintenance, architectural coatings use) and vehicle emissions at buildout of 20,111 square feet of renovation area and 361,561 square feet of new construction area at the PCC. Table 3-8 presents the estimated operational emissions at PCC.

Table 3-8: Summary of Total Estimated Buildout Year 2041 Operational Emissions

Source	Maximum Daily Emissions (pounds/day)					
	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Area Sources[1]	4.80	0.00	0.35	0.00	0.00	0.00
Energy Usage[2]	0.17	1.50	1.26	0.01	0.11	0.11
Mobile Sources[3]	3.17	20.41	40.78	0.23	24.32	6.57
Total	**8.14**	**21.91**	**42.39**	**0.24**	**24.43**	**6.68**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Notes: CO = carbon monoxide; NO_X = nitrogen oxides; PM = particulate matter; SO_X = sulfur oxides; VOC = volatile organic compounds.
[1] Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.
[2] Energy usage consists of emissions from natural gas usage (excluding hearths).
[3] Mobile sources consist of emissions from vehicles and road dust.
Source: CalEEMod Version 2016.3.2.

As shown in Table 3-8, the emissions associated with the 2041 Facilities Master Plan for the PCC Improvements would be less than the daily significance thresholds, and no significant impacts are anticipated.

Localized CO Impacts from Project-Generated Vehicular Trips

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential local air quality impacts. Local air quality impacts can be assessed by comparing future without and with project CO levels to the State and federal CO standards of 20 parts per million (ppm) over one hour or 9 ppm over eight hours.

At the time of the SCAQMD 1993 Handbook, the Air Basin was designated nonattainment under the CAAQS and NAAQS for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Air Basin and in the State have steadily declined. In 2007, the Air Basin was designated in attainment for CO under both the CAAQS and NAAQS. SCAQMD conducted a CO hot spot analysis for attainment at the busiest intersections in Los Angeles during the peak morning and afternoon periods and did not predict a violation of CO standards.[1] Since the intersections near the Proposed Project are much smaller with less traffic than what was analyzed by the SCAQMD, no local CO hot spots are anticipated to be created from the Proposed Project; and no CO hot spot modeling was performed. Therefore, a less than significant long-term air quality impact is anticipated to local air quality with the ongoing use of the Proposed Project.

Local Criteria Pollutant Impacts from Onsite Operations

Project-related air emissions from onsite sources such as architectural coatings, landscaping equipment, and onsite usage of natural gas appliances may have the potential to create emissions areas that exceed the State and federal air quality standards in the project vicinity, even though those these pollutant emissions may not be significant enough to create a regional impact to the Air Basin.

The local air quality emissions from onsite operations were analyzed using the SCAQMD's Mass Rate LST Look-Up Tables and the methodology described in the LST Methodology (SCAQMD 2008). The Look-Up Tables were developed by the SCAQMD in order to readily determine if the daily emissions of CO, NOx, PM_{10}, and $PM_{2.5}$ from the Proposed Project could result in a significant impact to the local air quality. Table 3-9 shows the onsite emissions from CalEEMod that includes area sources and energy usage in the immediate vicinity of the Project Site and the calculated emissions thresholds. Due to the nature of the Proposed Project, the individual proposed facilities are not expected to generate vehicle traffic; and, therefore, mobile sources are not included in this local emissions analysis.

[1] The four intersections analyzed by the SCAQMD were: Long Beach Boulevard and Imperial Highway, Wilshire Boulevard and Veteran Avenue, Sunset Boulevard and Highland Avenue, and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with Level of Service (LOS) E in the morning and LOS F in the evening peak hour.

Table 3-9: Buildout Year 2041 Operations-Related Local Criteria Pollutant Emissions

Land Use Subtype in CalEEMod	Pollutant Emissions (pounds/day)			
	NO_X	**CO**	**PM_{10}**	**$PM_{2.5}$**
Area Sources	0.00	0.35	0.00	0.00
Energy Usage	1.50	1.26	0.11	0.11
Total	**1.50**	**1.61**	**0.11**	**0.11**
SCAQMD Thresholds for 25 meters (82 feet)[1]	**66**	**827**	**2**	**1**
Exceeds Threshold?	No	No	No	No

Notes: CO = carbon monoxide; NO_X = nitrogen oxides; PM = particulate matter.
[1] The nearest sensitive receptors are homes located approximately 45 feet (13 meters) from the proposed construction and the Mary Butler School located adjacent to the proposed construction. According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25-meter threshold.
Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-Up Tables for two acres in Air Monitoring Area 4, South Coastal Los Angeles County.

As shown in Table 3-9, the ongoing operations of the Proposed Project would not exceed the local NOx, CO, PM_{10}, and $PM_{2.5}$ thresholds of significance. Therefore, the ongoing operations of the Proposed Project would create a less than significant operations-related impact to local air quality due to onsite emissions, and no mitigation would be required.

Implementation of the proposed 2041 Facilities Master Plan may 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).

Cumulative Air Quality Emissions

Cumulative projects include local development as well as general growth within the project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel throughout the local area. Therefore, from an air quality standpoint, the cumulative analysis would extend beyond any local projects and, when wind patterns are considered, would cover an even larger area. Accordingly, the cumulative analysis for the project's air quality must be generic by nature. The project area is out of attainment for ozone and PM_{10} and $PM_{2.5}$ particulate matter. In accordance with *CEQA Guidelines* Section 15130(b), this analysis of cumulative impacts incorporates a three-tiered approach to assess cumulative air quality impacts.

- Consistency with the SCAQMD project-specific thresholds for construction and operations
- Project consistency with existing air quality plans
- Assessment of the cumulative health effects of the pollutants

<u>Consistency with Project Specific Thresholds</u>

Construction-Related Impacts

The Project Site is located in the South Coast Air Basin, which is currently designated by the USEPA for federal standards as a nonattainment area for ozone and $PM_{2.5}$ and by CARB for the State standards as a nonattainment area for ozone, PM_{10}, and $PM_{2.5}$. The regional ozone, PM_{10}, and $PM_{2.5}$ emissions

associated with construction of the Proposed Project have been calculated above. The analysis found that development of the Proposed Project would result in less than significant regional emissions of VOC and NOx (ozone precursors), PM_{10}, and $PM_{2.5}$ during construction of the Proposed Project. Therefore, a less than significant cumulative impact would occur from construction of the Proposed Project.

Operations-Related Impacts

The greatest cumulative operational impact on the air quality to the Air Basin will be the incremental addition of pollutants mainly from increased traffic from residential, commercial, and industrial development. In accordance with SCAQMD methodology, projects that do not exceed SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. The regional ozone, PM_{10}, and $PM_{2.5}$ emissions created from the ongoing operations of the Proposed Project have been calculated above under Impact 3.4-2. The above analysis found that development of the Proposed Project would result in less than significant regional emissions of VOC and NOx (ozone precursors), PM_{10}, and $PM_{2.5}$ during operation of the Proposed Project. With respect to long-term emissions, this project would create a less than significant cumulative impact.

Consistency with Air Quality Plans

The analysis provided above under Impact 3.4-2indicates that over the course of buildout, emissions from the proposed 2041 Facilities Master Plan would not result in significant impacts based on SCAQMD thresholds of significance. Additionally, project construction and operation would be in compliance with the strategies outlined in the AQMP. As such, the Proposed Project is not anticipated to exceed the AQMP assumptions for the Project Site and is found to be consistent with the AQMPs for the Air Basin.

Therefore, air quality impacts resulting from construction and operation of the Proposed Project would not be cumulatively considerable.

Mitigation Measures

No mitigation measures are necessary.

Residual Impacts

Impacts would be less than significant.

Impact 3.4-3: Expose sensitive receptors to substantial pollutant concentrations including air toxics such as diesel particulates.

Implementation of the proposed 2041 Facilities Master Plan may expose sensitive receptors to substantial pollutant concentrations. The local concentrations of criteria pollutant emissions produced in the nearby vicinity of the Proposed Project, which may expose sensitive receptors to substantial concentrations have been calculated above under Impact 3.4-2 for both construction and operations, which are discussed separately below. The discussion below also includes an analysis of the potential impacts from toxic air contaminant emissions. The nearest sensitive receptors to the Project Site are students and workers at the Mary Butler School located adjacent to the proposed renovations and single-family homes located as near as 45 feet north of the Project Site.

Construction-Related Sensitive Receptor Impacts

Construction of the Proposed Project may expose sensitive receptors to substantial pollutant concentrations of localized criteria pollutant concentrations and from toxic air contaminant emissions created from onsite construction equipment, which are described below.

Local Criteria Pollutant Impacts from Construction

The local air quality impacts from construction of the Proposed Project have been analyzed above under Impact 3.4-2and found that the construction of the Proposed Project would not exceed the local NOx, CO, PM_{10} and $PM_{2.5}$ thresholds of significance discussed above. Therefore, construction of the Proposed Project would create a less than significant construction-related impact to local air quality, and no mitigation would be required.

Toxic Air Contaminants Impacts from Construction

The greatest potential for toxic air contaminant emissions would be related to diesel particulate matter (DPM) emissions associated with heavy equipment operations during construction of the Proposed Project. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of "individual cancer risk." "Individual cancer risk" is the likelihood that a person exposed to concentrations of toxic air contaminants over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. Given the relatively limited number of heavy-duty construction equipment and the short-term construction schedule, the Proposed Project would not result in a long-term (i.e., 70 years) substantial source of toxic air contaminant emissions and corresponding individual cancer risk. In addition, California Code of Regulations (CCR) Title 13, Article 4.8, Chapter 9, Section 2449 regulates emissions from off-road diesel equipment in California. This regulation limits idling of equipment to no more than five minutes and requires equipment operators to label each piece of equipment and provide annual reports to CARB of their fleet's usage and emissions. This regulation also requires systematic upgrading of the emission Tier level of each fleet, and currently no commercial operator is allowed to purchase Tier 0 or Tier 1 equipment, and by January 2023 no commercial operator is allowed to purchase Tier 2 equipment. In addition to the purchase restrictions, equipment operators need to meet fleet average emissions targets that become more stringent each year between years 2014 and 2023. Therefore, no significant short-term toxic air contaminant impacts would occur during construction of the Proposed Project. As such, construction of the Proposed Project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations.

Operations-Related Sensitive Receptor Impacts

The ongoing operations of the Proposed Project may expose sensitive receptors to substantial pollutant concentrations of local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from onsite operations. The following analyzes the vehicular CO emissions, local criteria pollutant impacts from onsite operations, and toxic air contaminant impacts.

Local CO Hot spot Impacts from Project-Generated Vehicle Trips

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a

roadway network and are used as an indicator of potential local air quality impacts to sensitive receptors. The analysis provided above in Impact 3.4-2 shows that no local CO hot spots are anticipated to be created at any nearby intersections from the vehicle traffic generated by the Proposed Project. Therefore, operation of the Proposed Project would result in a less than significant exposure of offsite sensitive receptors to substantial pollutant concentrations.

Local Criteria Pollutant Impacts from Onsite Operations

The local air quality impacts from the operation of the Proposed Project would occur from onsite sources such as architectural coatings, landscaping equipment, and onsite usage of natural gas appliances. The analysis provided above in Impact 3.4-2found that the operation of the Proposed Project would not exceed the local NOx, CO, PM_{10} and $PM_{2.5}$ thresholds of significance discussed above. Therefore, the ongoing operations of the Proposed Project would create a less than significant operations-related impact to local air quality due to onsite emissions, and no mitigation would be required.

Operations-Related Toxic Air Contaminant Impacts

Particulate matter (PM) from diesel exhaust is the predominant TAC in most areas; and, according to The California Almanac of Emissions and Air Quality 2013 Edition, prepared by CARB, about 80 percent of the outdoor TAC cancer risk is from diesel exhaust. Some chemicals in diesel exhaust, such as benzene and formaldehyde have been listed as carcinogens by State Proposition 65 and the Federal Hazardous Air Pollutants program. Due to the nominal number of diesel truck trips generated by the Proposed Project, a less than significant TAC impact would occur during the ongoing operations of the Proposed Project, and no mitigation would be required.

Mitigation Measures

No mitigation measures are necessary.

Residual Impacts

Impacts would be less than significant.

Impact 3.4-4: Result in substantial emissions (such as odors or dust) adversely affecting a substantial number of people.

The Proposed Project would not create objectionable odors affecting a substantial number of people. Potential odor impacts have been analyzed separately for construction and operations below.

Individual responses to odors are highly variable and can result in a variety of effects. Generally, the impact of an odor results from a variety of factors such as frequency, duration, offensiveness, location, and sensory perception. The frequency is a measure of how often an individual is exposed to an odor in the ambient environment. The intensity refers to an individual's or group's perception of the odor strength or concentration. The duration of an odor refers to the elapsed time over which an odor is experienced. The offensiveness of the odor is the subjective rating of the pleasantness or unpleasantness of an odor. The location accounts for the type of area in which a potentially affected

person lives, works, or visits; the type of activity in which he or she is engaged; and the sensitivity of the impacted receptor.

Sensory perception has four major components: detectability, intensity, character, and hedonic tone. The detection (or threshold) of an odor is based on a panel of responses to the odor. There are two types of thresholds: the odor detection threshold and the recognition threshold. The detection threshold is the lowest concentration of an odor that will elicit a response in a percentage of the people that live and work in the immediate vicinity of the Project Site and is typically presented as the mean (or 50 percent of the population). The recognition threshold is the minimum concentration that is recognized as having a characteristic odor quality; this is typically represented by recognition by 50 percent of the population. The intensity refers to the perceived strength of the odor. The odor character is what the substance smells like. The hedonic tone is a judgment of the pleasantness or unpleasantness of the odor. The hedonic tone varies in subjective experience, frequency, odor character, odor intensity, and duration.

Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of coatings such as asphalt pavement, paints, and solvents and from emissions from diesel equipment. The objectionable odors that may be produced during the construction process would be temporary and would not likely be noticeable for extended periods of time beyond the Project Site's boundaries. Due to the transitory nature of construction odors, a less than significant odor impact would occur, and no mitigation would be required.

Operations-Related Odor Impacts

The implementation of the proposed 2041 Facilities Master Plan would include development of institutional junior college land uses. Potential sources that may emit odors during the ongoing operations of the Proposed Project would primarily occur from odor emissions from the trash storage area and from vehicle emissions. Pursuant to City regulations, permanent trash enclosures that protect trash bins from rain as well as limit air circulation would be required for the trash storage areas. Perceptible odors may also be emitted from substances from other on-campus activities such as laboratory uses and combustion of fuels. However, the nominal amount of these substances would not result in a significant odor impact. Due to the distance of the nearest receptors from the Project Site and through compliance with City trash storage regulations, no significant impact related to odors would occur during the ongoing operations of the Proposed Project. Therefore, a less than significant odor impact would occur, and no mitigation would be required.

Mitigation Measures

No mitigation measures are necessary.

Residual Impacts

Impacts would be less than significant.

3.5 GREENHOUSE GAS EMISSIONS

3.5.1 Introduction

This section provides information on potential impacts from the greenhouse gas (GHG) emissions generated either directly or indirectly by the Proposed Project. This section also addresses the potential of the Proposed Project to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. The GHG modeling parameter and output is included in this EIR as Appendix B. This analysis follows the SCAQMD recommendations for preparing a GHG emissions analysis under CEQA.

3.5.2 Global Climate Change

Climate change is a recorded change in the Earth's average weather measured by variables such as wind patterns, storms, precipitation, and temperature. Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), which are known as greenhouse gases (GHGs). Historical records show that global temperature changes have occurred naturally in the past, such as during previous ice ages. However, it has been shown that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere. The year 2016 ranks as Earth's warmest year since record keeping began in 1880, and 16 of the 17 warmest years in the instrumental record occurred since 2001. The average global temperature has risen about 2.0 degrees Fahrenheit (°F) (1.1 degree Celsius [°C]) since 1880 (NASA 2017).

The global atmospheric concentration of CO_2 has increased from a pre-industrial (roughly 1750) value of about 280 parts per million (ppm) to a peak of 407 ppm and a seasonally adjusted 404 ppm in October 2017, primarily due to fossil fuel use, with land use change providing a significant but smaller contribution. The annual CO_2 concentration growth rate during the 10-year period between 1995 and 2005 was larger than the growth rate from the beginning of continuous direct measurements in 1960 to 2005 (NOAA 2018).

Greenhouse Gases

GHGs are global pollutants and are therefore unlike criteria air pollutants such as ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and toxic air contaminants (TACs), which are pollutants of regional and local concern (see Section 3.4, Air Quality, of this SEIR). While pollutants with localized air quality effects have relatively short atmospheric lifetimes (generally on the order of a few days), GHGs have relatively long atmospheric lifetimes, ranging from one year to several thousand years. Long atmospheric lifetimes allow for GHGs to disperse around the globe. Therefore, GHG effects are global, as opposed to the local and/or regional air quality effects of criteria air pollutant and TAC emissions.

California Assembly Bill 32 (AB 32) defines greenhouse gases as any of the following compounds: CO_2 CH_4, N_2O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6) (California Health and Safety Code Section 38505(g)). CO_2, followed by CH_4 and N_2O, are the most common GHGs that result from human activity.

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the "cumulative radiative forcing effect of a gas over a specified time

horizon resulting from the emission of a unit mass of gas relative to a reference gas" (USEPA 2018). The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main greenhouse gases that have been attributed to human activity include CH_4, which has a GWP of 21, and N_2O, which has a GWP of 310. Table 3-10 presents the GWP and atmospheric lifetimes of common GHGs.

Table 3-10: Global Warming Potentials, Atmospheric Lifetimes, and Abundances of GHGs

Gas	Atmospheric Lifetime (year)[1]	Global Warming Potential (100 Year Horizon)[2]	Atmospheric Abundance
carbon dioxide (CO_2)	50-200	1	379 ppm
methane (CH_4)	9-15	25	1,774 ppb
nitrous oxide (N_2O)	114	298	319 ppb
HFC-23	270	14,800	18 ppt
HFC-134a	14	1,430	35 ppt
HFC-152a	1.4	124	3.9 ppt
PFC: Tetrafluoromethane (CF_4)	50,000	7,390	74 ppt
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200	2.9 ppt
sulfur hexafluoride (SF_6)	3,200	22,800	5.6 ppt

Notes:
[1] Defined as the half-life of the gas.
[2] Compared to the same quantity of CO_2 emissions and is based on the Intergovernmental Panel On Climate Change (IPCC) 2007 standard, which is utilized in CalEEMod (Version 2016.3.2),that is used in this report (CalEEMod user guide: Appendix A).
Definitions: HFC = hydrofluorocarbon; PFC = perfluorocarbon; ppm = parts per million; ppb = parts per billion; ppt = parts per trillion
Source: IPCC 2007, EPA 2015

Human-caused sources of CO_2 include combustion of fossil fuels (coal, oil, natural gas, gasoline, and wood). Data from ice cores indicate that CO_2 concentrations remained steady prior to the current period for approximately 10,000 years. Concentrations of CO_2 have increased in the atmosphere since the industrial revolution. CH_4 is the main component of natural gas and also arises naturally from anaerobic decay of organic matter. Human-caused sources of natural gas include landfills, fermentation of manure, and cattle farming. Human-caused sources of N_2O include combustion of fossil fuels and industrial processes such as nylon production and production of nitric acid.

Other GHGs are present in trace amounts in the atmosphere and are generated from various industrial or other uses. The sources of GHG emissions, GWP, and atmospheric lifetime of GHGs are all important variables to be considered in the process of calculating carbon dioxide equivalent (CO_2e) for discretionary land use projects that require a climate change analysis.

3.5.3 Regulatory Framework

The regulatory setting related to global climate change is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to reduce GHG emissions through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for global climate change regulations are discussed below.

International

International and federal legislation has been enacted to deal with global climate change issues. In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change (IPCC) to assess the scientific, technical, and socioeconomic information relevant to understanding the scientific basis for human-induced climate change, its potential impacts, and options for adaptation and mitigation. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling GHG emissions. The parties of the UNFCCC adopted the Kyoto Protocol, which set binding GHG reduction targets for 37 industrialized countries with the objective of reducing their collective GHG emissions by 5 percent below 1990 levels by 2012. The Kyoto Protocol has been ratified by 182 countries but has not been ratified by the United States. It should be noted that Japan and Canada opted out of the Kyoto Protocol, and the remaining developed countries that ratified the Kyoto Protocol have not met their Kyoto targets. The Kyoto Protocol expired in 2012, and the amendment for the second commitment period from 2013 to 2020 has not yet entered into legal force. The Parties to the Kyoto Protocol negotiated the Paris Agreement in December 2015, agreeing to set a goal of limiting global warming to less than 2 degrees Celsius compared with pre-industrial levels. The Paris Agreement has been adopted by 195 nations with 147 ratifying it, including the United States by President Obama, who ratified it by Executive Order on September 3, 2016. On June 1, 2017, President Trump announced that the United States is withdrawing from the Paris Agreement; however, the Paris Agreement is still legally binding by the other remaining nations.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—chlorofluorocarbons (CFCs), halons, carbon tetrachloride, and methyl chloroform—were to be phased out, the first three by the year 2000 and methyl chloroform by 2005.

Federal

U.S. Environmental Protection Agency

The USEPA is responsible for implementing federal policy to address global climate change. The federal government administers a wide array of public-private partnerships to reduce U.S. GHG intensity. These programs focus on energy efficiency, renewable energy, methane, and other non-CO_2 gases; agricultural practices and implementation of technologies to achieve GHG reductions. USEPA implements several voluntary programs that substantially contribute to the reduction of GHG emissions. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act. The findings state:

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases: carbon dioxide (CO_2); methane (CH_4); nitrous oxide (N_2O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulfur hexafluoride (SF_6), into the atmosphere, threaten the public health and welfare of current and future generations.

- **Cause or Contribute Finding**: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

These findings did not impose any requirements on industry or other entities; however, since 2009 the USEPA has been providing GHG emission standards for vehicles and other stationary sources of GHG emissions that are regulated by the USEPA. On September 13, 2013, the USEPA Administrator signed 40 Code of Federal Regulations (CFR) Part 60, that limits emissions from new sources to 1,100 pounds of CO_2 per megawatt hour (Mwh) for fossil fuel-fired utility boilers and 1,000 pounds of CO_2 per Mwh for large natural gas-fired combustion units.

On August 3, 2015, the USEPA announced the Clean Power Plan, emissions guidelines for U.S. states to follow in developing plans to reduce GHG emissions from existing fossil fuel-fired power plants (Federal Register Vol. 80, No. 205, October 23, 2015). On February 9, 2016, the Supreme Court stayed implementation of the Clean Power Plan due to a legal challenge from 29 states; and, in April 2017, the Supreme Court put the case on a 60-day hold and directed both sides to make arguments for whether it should keep the case on hold indefinitely or close it and remand the issue to the USEPA. On October 11, 2017, the USEPA issued a formal proposal to repeal the Clean Power Plan; however, the repeal of the Plan will require following the same rule-making system used to create regulations and will likely result in court challenges.

Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards

The USEPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) have been working together on developing a National Program of regulations to reduce GHG emissions and to improve the fuel economy of light-duty vehicles. On April 1, 2010, the USEPA and NHTSA announced a joint Final Rulemaking establishing standards for 2012 through 2016 model year vehicles. This was followed up on October 15, 2012, when the agencies issued a Final Rulemaking with standards for model years 2017 through 2025. The rules require these vehicles to meet an estimated combined average emissions level of 295 grams of CO_2 per mile by 2012, decreasing to 250 grams per mile by 2016, and finally to an average industry fleet-wide level of 163 grams per mile in model year 2025. The 2016 standard is equivalent to 35.5 miles per gallon (mpg), and the 2025 standard is equivalent to 54.5 mpg if the levels were achieved solely through improvements in fuel efficiency. The agencies expect, however, that a portion of these improvements will occur due to air conditioning technology improvements (i.e., they will leak less) and due to the use of alternative refrigerants, which would not contribute to fuel economy. These standards would cut GHG emissions by an estimated 2 billion metric tons and 4 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2017–2025). The combined USEPA GHG standards and NHTSA Corporate Average Fuel Economy (CAFE) standards resolve previously conflicting requirements under both federal programs and the standards of the State of California and other states that have adopted the California standards (USEPA 2010; USEPA and NHTSA 2012).

The State and federal government are offering limited financial incentives for electric vehicle purchases to promote the sale of hybrid and plug-in electric vehicles. Electric vehicles have the potential to reduce GHG emissions as compared to gasoline-fueled vehicles, but the change in GHG emissions is dependent on the type of fuel used for the generation of electric power.

State

The CARB has the primary responsibility for implementing State policy to address global climate change; however, State regulations related to global climate change affect a variety of State agencies. CARB,

which is part of the California Environmental Protection Agency (Cal EPA), is responsible for the coordination and administration of both the federal and State air pollution control programs within California. In this capacity, the CARB conducts research, sets California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In 2008, CARB approved a Climate Change Scoping Plan that proposes a "comprehensive set of actions designed to reduce overall carbon GHG emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (CARB 2008a). The Climate Change Scoping Plan has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives; voluntary actions, and market-based mechanisms such as a cap-and-trade system. In 2014, CARB approved the First Update to the Climate Change Scoping Plan (CARB 2014) that identifies additional strategies moving beyond the 2020 targets to the year 2050. On December 14, 2017, CARB adopted California's 2017 Climate Change Scoping Plan of November 2017 (CARB 2017) that provides specific statewide policies and measures to achieve the 2030 GHG reduction target of 40 percent below 1990 levels by 2030 and the aspirational 2050 GHG reduction target of 80 percent below 1990 levels by 2050. In addition, the State has passed the following laws directing CARB to develop actions to reduce GHG emissions, which are listed below in chronological order, with the most current first.

Title 24, Part 6, Energy Efficiency Standards

California Code of Regulations (CCR) Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24) was first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels results in GHG emissions, and energy-efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

Title 24 standards are updated on a three-year schedule, and the most current 2016 standards went into effect on January 1, 2017. The Title 24 standards require the installation of insulated hot water pipes, improved window performance, improved wall insulation, and mandatory duct sealing. Title 24 also requires roofs to be constructed to be solar ready, with cool roofing shingles, a minimum of 1-inch air space between roof material and roof deck, and a minimum of R-22 roof/ceiling insulation. All lighting is required to be high efficiency, and daylight sensors and motion sensors are required for outdoor lighting, bathrooms, utility rooms, and other spaces. The forced air systems are required to limit leakage to 5 percent or less, and all heat pump systems are required to be equipped with liquid line filter driers. The 2016 Title 24 Part 6 standards are anticipated to reduce electricity consumption by 281 gigawatt-hours per year and natural gas consumption by 16 million therms per year (CEC 2016).

Title 24, Part 11, California Green Building Standards

CCR Title 24, Part 11: California Green Building Standards (Title 24) was developed in response to continued efforts to reduce GHG emissions associated with energy consumption. The most current

version is the 2016 California Green Building Standards Code (CALGreen), which became effective on January 1, 2017, and replaced the 2013 CALGreen.

The CALGreen Code contains requirements for construction site selection; stormwater control during construction; construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency.

The CALGreen Code provides standards for bicycle parking, carpool/vanpool/electric vehicle spaces, light and glare reduction, grading and paving, energy efficient appliances, renewable energy, graywater systems, water efficient plumbing fixtures, recycling and recycled materials, pollutant controls (including moisture control and indoor air quality), acoustical controls, stormwater management, building design, insulation, flooring, and framing, among others. Implementation of the CALGreen Code measures reduces energy consumption and vehicle trips and encourages the use of alternative-fuel vehicles, which reduces pollutant emissions.

Some of the notable changes in the 2016 CALGreen Code over the prior 2013 CALGreen Code include: an increase in amount of bicycle parking requirements, an increase in number of electric vehicle (EV) charging stations and clean air vehicle parking at non-residential buildings, a reduction in water usage in urinals to 0.125 gallon per flush, an increased rate of diversion for construction and operational waste to 65 percent as well as adding organic waste as waste to be diverted, and a requirement for fireplaces to meet new Cal EPA standards.

Executive Order B-30-15, Senate Bill 32, and Assembly Bill 197 (Statewide Year 2030 GHG Targets)

California Executive Order (EO) B-30-15 (April 29, 2015) set an "interim" statewide emission target to reduce greenhouse emissions to 40 percent below 1990 levels by 2030 and directed State agencies with jurisdiction over greenhouse gas emissions to implement measures pursuant to statutory authority to achieve this 2030 target and the 2050 target of 80 percent below 1990 levels. Specifically, the Executive Order directed CARB to update the Scoping Plan to express this 2030 target in metric tons. Assembly Bill 197 (AB 197) (September 8, 2016) and Senate Bill 32 (SB 32) (September 8, 2016) codified into statute the GHG emissions reduction targets of at least 40 percent below 1990 levels by 2030 as detailed in EO B-30-15. AB 197 also requires additional GHG emissions reporting to CARB from stationary sources and requires CARB to provide sources of GHG emissions on its website that is broken down to sub-county levels. AB 197 requires CARB to consider the social costs of emissions impacting disadvantaged communities.

Senate Bill 350, Renewable Electricity Goals

SB 350, Signed October 7, 2015, is the Clean Energy and Pollution Reduction Act of 2015. SB 350 implements some of the goals of EO B-30-15. The objectives of SB 350 are as follows:

(1) To increase from 33 percent to 50 percent the procurement of our electricity from renewable sources

(2) To double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation (California Legislative Information 2015)

The text of SB 350 sets a December 31, 2030, target for 50 percent of electricity to be generated from renewable sources. SB 350 is being implemented by requiring all large utilities to develop and submit Integrated Resource Plans that detail how they will meet their customers' energy needs, reduce GHG emissions and deploy clean energy resources. SB 350 superseded the renewable energy requirements set by SB 1078, SB 107, and SB X1-2.

Executive Order B-29-15 and Senate Bill X7-7, Water Conservation Measures

The Water Conservation Act of 2009 sets an overall goal of reducing per-capita urban water use by 20 percent by December 31, 2020. The State is required to make incremental progress toward this goal by reducing per-capita water use by at least 10 percent by December 31, 2015. This is an implementing measure of the Water Sector of the AB 32 Scoping Plan. Reduction in water consumption directly reduces the energy necessary and the associated emissions to convene, treat, and distribute the water; it also reduces emissions from wastewater treatment.

The Department of Water Resources adopted a regulation on February 16, 2011, that sets forth criteria and methods for exclusion of industrial process water from the calculation of gross water use for purposes of urban water management planning. The regulation would apply to all urban retail water suppliers required to submit an Urban Water Management Plan, as set forth in the Water Code, Division 6, Part 2.6, Sections 10617 and 10620.

On April 1, 2015, the California Governor issued Executive Order B-29-15 that directed the State Water Resources Control Board to impose restrictions to achieve a statewide 25-percent reduction in urban water usage and directed the Department of Water Resources to replace 50 million square feet of lawn with drought-tolerant landscaping through an update to the State's Model Water Efficient Landscape Ordinance. The Ordinance also requires installation of more efficient irrigation systems, promotes greywater usage and onsite stormwater capture, and limits the turf planted in new residential landscapes to 25 percent of the total area and restricts turf from being planted in median strips or in parkways unless the parkway is next to a parking strip and a flat surface is required to enter and exit vehicles. Executive Order B-29-15 and SB X7-7 would reduce GHG emissions associated with the energy used to transport and filter water.

Senate Bill 97 and Amendments to the California Environmental Quality Act Guidelines

SB 97 directed the California Natural Resources Agency (CNRA) to adopt amendments to *CEQA Guidelines* that require evaluation of GHG emissions or the effects of GHG emissions by January 1, 2010. The CNRA has done so, and the amendments to the *CEQA Guidelines*, in a new Section 15064.4 entitled Determining the Significance of Impacts from Greenhouse Gas Emissions, provide that:

a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of greenhouse gas emissions resulting from a project.

b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

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

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

3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions

The amendments also add a new Section 15126.4(c), Mitigation Measures Related to Greenhouse Gas Emissions. Generally, this *CEQA Guidelines* section requires lead agencies to consider feasible means—supported by substantial evidence and subject to monitoring or reporting—of mitigating the significant effects of GHG emissions. Potential measures to mitigate the significant effects of GHG emissions are identified, including those outlined in Appendix F, Energy Conservation, of the *CEQA Guidelines*.

Executive Order B-18-12

Signed on April 25, 2012, EO B-18-12 established targets for energy and water efficiency and GHG emissions. EO B-18-12 also rescinded previous EO S-20-04. Specifically, EO B-18-12 required State agencies to continue to reduce grid-based energy by a minimum of 20 percent below 2003 levels by 2020. The key element of EO B-18-12 required 50 percent of new State buildings and major renovations started after 2020 to be constructed as Zero Net Energy Facilities, with 100 percent of new and renovated State facilities beginning after 2025 constructed as Zero Net Energy Facilities. EO B-18-12 also required State agencies to take measures toward achieving Zero Net Energy for 50 percent of the square footage of existing State-owned building area by 2025. New construction or major renovation of State facilities larger than 10,000 square feet is required to use clean, onsite power generation, and new construction or major renovation of State facilities smaller than 10,000 square feet is required to obtain Leadership in Energy and Environmental Design (LEED) "Silver" certification or higher.

Senate Bill 375

SB 375 was adopted September 2008 in order to support the State's climate action goals to reduce GHG emissions through coordinated regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires CARB to set regional targets for GHG emissions reductions from passenger vehicle use. In 2010, CARB established targets for 2020 and 2035 for each Metropolitan Planning Organization (MPO) within the State. It was up to each MPO to adopt a sustainable communities strategy (SCS) that will prescribe land use allocation in that MPO's Regional Transportation Plan (RTP) to meet CARB's 2020 and 2035 GHG emission reduction targets. These reduction targets are required to be updated every eight years, and in June 2017 CARB released Staff Report Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Target, which provides recommended GHG emissions reduction targets for SCAG of 8 percent by 2020 and 21 percent by 2035.

The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), adopted by SCAG in April 2016, provides a 2020 GHG emission reduction target of 8 percent and a 2035 GHG emission reduction target of 18 percent. SCAG will need to develop additional strategies in its next revision of the RTP/SCS in order to meet CARB's new 21-percent GHG emission reduction target for 2035. CARB is also charged with reviewing SCAG's RTP/SCS for consistency with its assigned targets.

City and County land use policies, including General Plans, are not required to be consistent with the RTP and associated SCS. However, new provisions of CEQA incentivize, through streamlining and other provisions, qualified projects that are consistent with an approved SCS and categorized as "transit priority projects."

Assembly Bill 32, The California Global Warming Solutions Act of 2006

The California Legislature adopted the public policy position that global warming is "a serious threat to the economic well-being, public health, natural resources, and the environment of California" (California Health and Safety Code, Section 38501). Further, the State Legislature has determined that:

> the potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra Nevada snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious disease, asthma, and other human health-related problems.

The State Legislature also states that:

> Global warming will have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry. It will also increase the strain on electricity supplies necessary to meet the demand for summer air-conditioning in the hottest parts of the State (California Health and Safety Code, Section 38501).

These public policy statements became law with the enactment of AB 32, the California Global Warming Solutions Act of 2006, signed by Governor Arnold Schwarzenegger in September 2006. AB 32 is now codified as Sections 38500 through 38599 of the California Health and Safety Code.

AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction is to be accomplished through an enforceable statewide cap on GHG emissions to be phased in starting in 2012. AB 32 directs CARB to establish this statewide cap based on 1990 GHG emissions levels; to disclose how it arrived at the cap; to institute a schedule to meet the emissions cap; and to develop tracking, reporting, and enforcement mechanisms. Emissions reductions under AB 32 are to include carbon sequestration projects and best management practices that are technologically feasible and cost-effective. As of the date of this Final SEIR, CARB has not promulgated GHG emissions or reporting standards that are directly applicable to the Project.

Executive Order S-3-05

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05, which proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce snowpack in the Sierra Nevada Mountains, could further exacerbate California's air quality problems; and could potentially cause a rise in sea levels. In an effort to avoid or reduce the impacts of climate change, Executive Order S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. It should be noted that the 80 percent below 1990 levels by 2050 is currently an aspirational goal by Executive Order S-3-05, but has not yet been codified into law.

Assembly Bill 1493, Clean Car Standards

AB 1493, adopted September 2002, also known as Pavley I, requires the development and adoption of regulations to achieve the maximum feasible reduction of GHGs emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the state. Although setting emissions standards on automobiles is solely the responsibility of the USEPA, the Federal Clean Air Act allows California to set state-specific emission standards on automobiles if the State first obtains a waiver from the USEPA. The USEPA granted California that waiver on July 1, 2009. The emission standards become increasingly more stringent through the 2016 model year. California is also committed to further strengthening these standards beginning in 2017 to obtain a 45-percent GHG reduction from 2020 model year vehicles (CARB 2008b,2009).

In January 2012, CARB approved the Advanced Clean Cars Program, a new emissions-control program for model year 2017 through 2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of zero-emission vehicles. By 2025, when the rules will be fully implemented, the new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions. The program also requires car manufacturers to offer for sale an increasing number of zero-emission vehicles each year, including battery electric, fuel cell, and plug-in hybrid electric vehicles.

In December 2012, CARB adopted regulations allowing car manufacturers to comply with California's GHG emissions requirements for model years 2017-2025 through compliance with the CalEPA GHG requirements for those same model years (CARB 2012).

Regional – Southern California

South Coast Air Quality Management District

The Project Site lies within the boundaries of the SCAQMD. The SCAQMD is bounded by the Ventura County-Los Angeles County border to the northwest, the Mojave Desert Air Basin to the north, the Riverside County border to the east, and the San Diego County-Riverside County border the south.

The portion of the Project Site under the jurisdiction of the SCAQMD lies within the South Coast Air Basin (Air Basin). The mission of the SCAQMD is to undertake all necessary steps to protect public health from air pollution, with sensitivity to the impacts of its actions on the community and businesses through a comprehensive program of planning, regulation, compliance assistance, enforcement, monitoring, technology advancement, and public education (SCAQMD 2015).

Beginning in April 2008, the SCAQMD convened a Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. The Working Group is scheduled to meet once per month. On December 5, 2008, the SCAQMD Governing Board adopted its staff proposal for an interim CEQA GHG significance threshold of 10,000 metric tons of CO_2 equivalent per year ($MTCO_2e$ per year) for industrial projects where the SCAQMD is the lead agency. The policy objective for establishing this significance threshold is to capture projects that represent approximately 90 percent of GHG emissions from new sources and to avoid EIR-level analysis for relatively small impacts (SCAQMD 2008).

In September 2010, the Working Group proposed extending the 10,000 $MTCO_2e$ per year screening threshold currently applicable to industrial projects where the SCAQMD is the lead agency, described above, to other lead agency industrial projects. For all other projects, SCAQMD staff proposed a multiple tier analysis to determine the appropriate threshold to be used. The draft proposal suggests the following tiers: Tier 1 is any applicable CEQA exemptions; Tier 2 is consistency with a GHG reduction plan; Tier 3 is a screening value or bright line; Tier 4 is a performance-based standard with three options that include percent emission reductions, early implementation of AB 32 scoping plan measures, or an efficiency target; and Tier 5 is GHG mitigation offsets. According to the presentation given at the September 28, 2010, Working Group meeting, SCAQMD staff proposed a Tier 3 draft threshold of 1,400 to 3,500 $MTCO_2e$ per year depending on whether the project was commercial, mixed use, or residential. For the Tier 4 draft threshold, SCAQMD staff presented a percent emission reduction target option but did not provide any specific recommendation for a percent emission reduction target; instead it referenced the San Joaquin Valley Air Pollution Control District approach. The percent reduction target is based on consistency with AB 32 as it was based on the same numeric reductions calculated in the Scoping Plan to reach 1990 levels by 2020. The second Tier 4 option is to assess the early implementation of applicable AB 32 scoping plan measures. The third Tier 4 option is to utilize an efficiency target for 2020 of 4.8 $MTCO_2e$ per year per service population (SP) for project-level thresholds where SP is project residents plus employees and 6.6 $MTCO_2e$ per year per SP for plan-level threshold (SCAQMD 2010). The Working Group has not convened since the fall of 2010. As of December 2016, the proposal has not been considered or approved for use by the SCAQMD Board.

Southern California Association of Governments

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and addresses regional issues relating to transportation, the economy, community development, and the environment. SCAG is the federally designated MPO for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the 2016-2040 RTP/SCS, adopted in April 2016 and the 2015 FTIP, adopted in October 2013, which address regional development and growth forecasts. Although the RTP/SCS and FTIP are primarily planning documents for future transportation projects, a key component of these plans is to integrate land use planning with transportation planning that promotes higher density infill development in close proximity to existing transit service. These plans form the basis for the land use and transportation components of the AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The RTP/SCS, FTIP, and AQMP are based on projections originating within the City and County General Plans.

Local – City of Long Beach

Local jurisdictions, such as the City of Long Beach, have the authority and responsibility to reduce air emissions of GHGs through police power and decision-making authority. Specifically, SB 97 encourages Cities to quantify GHG emissions from new projects. The City Long Beach is in the process of developing a Climate Action and Adaption Plan. However, because the City has not yet adopted a Climate Action Plan or greenhouse gas reduction strategy, the City currently relies on the expertise of the SCAQMD and utilizes the expertise, programs, procedures, and methodologies developed by the SCAQMD for the environmental review of plans and developmental proposals within its jurisdiction.

3.5.4 Impacts and Mitigation

Impact 3.5-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

The Proposed Project may generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The Proposed Project consists of a Master Plan for improvements to a junior college that would result in the demolition of 44,292 square feet of existing structures, renovation of 20,111 square feet of existing buildings, and construction of 361,561 square feet of new building space. These improvements are anticipated to increase the student enrollment of the PCC by 3,279 students. Implementation of the 2041 Facilities Master Plan is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste disposal, water usage, and construction equipment.

In December 2008, SCAQMD adopted a threshold of 10,000 $MTCO_2e$ per year for industrial, but only with respect to projects where SCAQMD is the lead agency. As of the time of this writing (January 2018), the SCAQMD has not yet adopted a threshold for residential or commercial projects or a threshold for projects where SCAQMD is not the lead agency.

In order to identify significance criteria under CEQA for all land use projects, SCAQMD initiated a Working Group, which provided detailed methodology for evaluating significance under CEQA. At the September 28, 2010, Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that includes the following Tiers:

- Tier 1: Applicable CEQA Exemptions (e.g., SB 97, categorical and statutory exemptions)
- Tier 2: Consistency with a GHG Reduction Plan (an adopted plan by a local agency)
- Tier 3: Quantitative Screening Values. The following quantitative thresholds were proposed:
  - 3,000 $MTCO_2e$ per year for all land use types; or
  - 3,500 $MTCO_2e$ per year for residential;
  - 1,400 $MTCO_2e$ per year for commercial;
  - 3,000 $MTCO_2e$ per year for mixed-use; and
  - 10,000 $MTCO_2e$ per year for industrial.
- Tier 4: Performance Standards. The following options were proposed as performance standards:

- Option 1: Percent Emission Reduction Target (Provide an undefined percent reduction in GHG emissions over business-as-usual emissions).
- Option 2: Early Implementation of Applicable AB32 Scoping Plan Measures (Require a set of AB32 Scoping Plan measures to be implemented).
- Option 3: SCAQMD Efficiency Targets. The following targets were proposed:
  - Year 2020 Targets
    - 4.8 $MTCO_2e$ per year per service population for project-level threshold (land use employment only)
    - 6.6 $MTCO_2e$ per year per service population for plan-level threshold
  - Year 2035 Targets
    - 3.0 $MTCO_2e$ per year per service population for project-level threshold
    - 4.1 $MTCO_2e$ per year per service population for plan-level threshold.

- Tier 5: Mitigation Offsets (either alone or in combination with above tiers to achieve target threshold)

Since the Proposed Project would consist of development of a Master Plan for PCC, the Project is not exempt from CEQA and Tier 1 is not applicable. Because the City of Long Beach has not yet adopted a Climate Action Plan or GHG reduction strategy the Tier 2, consistency with a GHG reduction plan by a local agency, is not applicable. The quantitative screening values provided in Tier 3 were developed for project-level analyses and are not applicable to plan-level analyses. For Tier 4, the most applicable performance standard to the Proposed Project is the Option 3 Year 2035 Target for a plan-level analysis of 4.1 $MTCO_2e$ per year per SP.

However, since the SCAQMD Working Group's thresholds were developed prior to AB 197 and SB 32 being codified into law in September 2016, these thresholds do not currently contain adequate thresholds to reduce California's GHG emissions to 40 percent below 1990 levels by 2030. The *California's 2017 Climate Change Scoping Plan*, prepared by CARB on November 2017, recommends that local agency thresholds for the year 2030 are 40 percent lower than the year 2020 thresholds. Since the SCAQMD's Year 2020 Target for a plan-level analysis is 6.6 $MTCO_2e$ per year per SP, a 40-percent reduction of this threshold would result in a Target of 3.96 $MTCO_2e$ per year per service population, which was utilized in this analysis.

According to the Traffic Impact Analysis (Linscott Law & Greenspan 2018), implementation of the proposed 2041 Facilities Master Plan would result in an increase of 3,279 students at the PCC, which was utilized as the service population associated with the Proposed Project.

The Project's GHG emissions have been calculated with the CalEEMod model based on the construction and operational parameters detailed in Appendix B, which also provides printouts of the CalEEMod output files. A summary of the results is shown below in Table 3-11.

Table 3-11: Project Related Greenhouse Gas Annual Emissions

Sector	Greenhouse Gas Emissions (Metric Tons per Year)			
	CO_2	CH_4	N_2O	CO_2e
Area Sources[1]	0.09	0.00	0.00	0.09
Energy Uses[2]	1,066.65	0.04	0.01	1,071.17
Mobile Sources[3]	2,913.95	0.11	0.00	2,916.75
Solid Waste[4]	121.47	7.18	0.00	300.95
Water and Wastewater[5]	70.23	0.23	0.01	77.80
Construction[6]	33.83	0.01	0.00	33.92
Total 2040 Emissions	4,206.22	7.57	0.02	**4,400.68**
Service Population[7]				**3,279**
Metric Tons CO_2e per Service Population				**1.34**
SCAQMD Modified Draft Threshold of Significance[8] (Metric Tons CO_2e per Service Population)				**3.96**

Notes:
[1] Area sources consist of GHG emissions from consumer products, architectural coatings, and landscaping equipment.
[2] Energy usage consists of GHG emissions from electricity and natural gas usage. It should be noted the energy usage rates are based on a worst-case analysis as LBCCD is committed to achieving net zero energy usage for PCC by 2041.
[3] Mobile sources consist of GHG emissions from vehicles.
[4] Waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.
[5] Water includes GHG emissions from electricity used for transport of water and processing of wastewater.
[6] Construction emissions amortized over 30 years as recommended in the SCAQMD GHG Working Group on November 19, 2009.
[7] Service population based on the anticipated increase of students to the PCC campus.
[8] SCAQMD's Year 2020 threshold of 6.6 $MTCO_2e$ per year was reduced by 40 percent to account for AB 197 and SB 32.
Source: CalEEMod Version 2016.3.2 (see Appendix B)

Table 3-11 shows that implementation of the proposed 2041 Facilities Master Plan would create 4,400.68 $MTCO_2e$ per year, which is equivalent to 1.34 $MTCO_2e$ per year per SP, which would be within SCAQMD's modified draft threshold of 3.96 $MTCO_2e$ per year per SP that has been modified to account for the more stringent GHG emissions reduction required by AB 197 and SB 32. Therefore, a less than significant generation of GHG emissions would occur from implementation of the proposed 2041 Facilities Master Plan. Impact would be less than significant.

Impact 3.5-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The Proposed Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. As detailed above in Impact 3.5-1, the City of Long Beach has not yet adopted a climate action plan; as such, the only applicable plans for reducing GHGs are the SCAG 2016-2040 RTP/SCS and CARB's 2017 Climate Change Scoping Plan, which are discussed below.

Consistency with the SCAG 2016-2040 RTP/SCS

The Project's consistency with the SCAG 2016-2040 RTP/SCS GHG-related goals and policies is shown in Table 3-12.

Table 3-12: Consistency with SCAG RTP/SCS GHG-Related Goals and Policies

RTP/SCS Goal/Policy	Project Consistency
Goal 1: Align the plan investments and policies with improving regional economic development and competitiveness	**Not Applicable**. The goal is applicable to SCAG's implementation of the RTP/SCS.
Goal 2: Maximize mobility and accessibility for all people and goods in the region.	**Consistent**. All walkways and parking lots will be designed to be ADA-compliant, and the PCC campus promotes the use of public transportation as bus stops are currently located adjacent to the campus on Pacific Coast Highway and Orange Avenue that promote multiple modes of travel.
Goal 3: Ensure travel safety and reliability for all people and goods in the region.	**Not Applicable**. The goal is applicable to Caltrans and the several county transportation departments in the region.
Goal 4: Preserve and ensure a sustainable regional transportation system.	**Not Applicable**. The goal is applicable to Caltrans and the several county transportation departments in the region.
Goal 5: Maximize productivity of our transportation system.	**Not Applicable**. The goal is applicable to Caltrans and the several county transportation departments in the region.
Goal 6: Protect the environment and health of our residents by improving air quality and encouraging active transportation (non-motorized transportation, such as bicycling and walking).	**Consistent**. The PCC Campus is located in an area that includes a mix of uses, including residential, retail, and recreational uses, that are connected by walkways and bikeways to reduce reliance on automobile use and offsite commuting.
Goal 7: Actively encourage and create incentives for energy efficiency, where possible.	**Consistent**. The LBCCD has committed to a net zero energy campus by the buildout of the Master Plan in 2041.
Goal 8: Encourage land use and growth patterns that facilitate transit and non-motorized transportation.	**Consistent**. The proposed Master Plan would intensify the land use on the PCC campus that is currently connected to nearby residential, retail, and recreational uses by walkways and bikeways and promotes the use of public transportation as bus stops are currently located adjacent to the campus on Pacific Coast Highway and Orange Avenue.
Goal 9: Maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.	**Not Applicable**. The goal is applicable to Caltrans, the several county transportation departments, the California Highway Patrol, and other law enforcement agencies in the region.
Policy 1: Transportation investments shall be based on SCAG's adopted regional Performance Indicators.	**Not Applicable**. The policy is applicable to SCAG's implementation of the RTP/SCS.
Policy 2: Ensuring safety, adequate maintenance and efficiency of operations on the existing multimodal transportation system should be the highest RTP/SCS priorities for any incremental funding in the region.	**Not Applicable**. The policy is applicable to SCAG's implementation of the RTP/SCS.
Policy 3: RTP/SCS land use and growth strategies in the RTP/SCS will respect local input and advance smart growth initiatives.	**Not Applicable**. The policy is applicable to SCAG's implementation of the RTP/SCS.
Policy 4: Transportation demand management (TDM) and active transportation will be focus areas, subject to Policy 1.	**Not Applicable**. The policy is applicable to SCAG's implementation of the RTP/SCS.

Table 3-12: Consistency with SCAG RTP/SCS GHG-Related Goals and Policies

RTP/SCS Goal/Policy	Project Consistency
Policy 5: High-occupancy vehicle (HOV) gap closures that significantly increase transit and rideshare usage will be supported and encouraged, subject to Policy 1.	**Not Applicable**. The policy is applicable to SCAG's implementation of the RTP/SCS.
Policy 6: The RTP/SCS will support investments and strategies to reduce non-recurrent congestion and demand for single occupancy vehicle use, by leveraging advanced technologies.	**Not Applicable**. The policy is applicable to SCAG's implementation of the RTP/SCS.
Policy 7: The RTP/SCS will encourage transportation investments that result in cleaner air, a better environment, a more efficient transportation system and sustainable outcomes in the long run.	**Not Applicable**. The policy is applicable to SCAG's implementation of the RTP/SCS.
Policy 8: Monitoring progress on all aspects of the Plan, including the timely implementation of projects, programs, and strategies, will be an important and integral component of the Plan.	**Not Applicable**. The policy is applicable to SCAG's implementation of the RTP/SCS.

Source: SCAG 2016

As shown in Table 3-12, with implementation of design features committed to by the LBCCD and statewide regulatory requirements including the CALGreen building standards, the Proposed Project would be consistent with all applicable policies of the RTP/SCS. Impacts would be less than significant.

Consistency with CARB's 2017 Scoping Plan

The Project's consistency with the list of feasible mitigation measures for individual projects provided in the CARB's 2017 Scoping Plan is shown in Table 3-13.

Table 3-13: Consistency with CARB's 2017 Scoping Plan Measures for Individual Projects

Measures from Scoping Plan	Project Consistency
Construction	
Enforce idling time restrictions for construction vehicles	**Consistent.** LBCCD will require that all off-road equipment utilized on the Project Site to be registered with CARB and adhere to CARB's idling limitation rules.
Require construction vehicles to operate with the highest tier engines commercially available	**Consistent.** LBCCD will include in all construction contracts that all off-road equipment utilized on site shall be the powered with the highest tier engine commercially available.
Divert and recycle construction and demolition waste, and use locally-sourced building materials with a high recycled material content to the greatest extent feasible.	**Consistent.** LBCCD will include in all construction contracts that construction and demolition waste shall be re-used or recycled to the greatest extent feasible and that the contractor shall utilize building materials with a high recycled material content to the greatest extent feasible.
Minimize tree removal, and mitigate indirect GHG emissions increases that occur due to	**Consistent.** LBCCD will require all construction projects to be evaluated to minimize tree and other vegetation

Table 3-13: Consistency with CARB's 2017 Scoping Plan Measures for Individual Projects

Measures from Scoping Plan	Project Consistency
vegetation removal, loss of sequestration, and soil disturbance.	removal.
Utilize existing grid power for electric energy rather than operating temporary gasoline/diesel powered generators.	**Consistent.** LBCCD will include in all construction contracts to restrict the use of generators except for cases where no other power source is available. LBCCD will also direct staff to provide contractors with access to existing power sources on the PCC campus.
Increase use of electric and renewable fuel powered construction equipment and require renewable diesel fuel where commercially available.	**Consistent.** LBCCD will include in all construction contracts that renewable diesel shall be utilized for all off-road equipment to the greatest extent feasible and that the contractor shall consider using electric equipment when electric off-road equipment becomes commercially available for use.
Require diesel equipment fleets to be lower emitting than any current emission standard.	**Consistent.** LBCCD will include in all construction contracts a requirement that each contractor's off-road equipment fleet shall exceed the emissions requirements provided in CCR Title 13, Article 4.8, Chapter 9, Section 2449.
Operation	
Comply with lead agency's standards for mitigating transportation impacts under SB 743	**Consistent.** The proposed Master Plan conforms with the goals of SB 743 that promote infill projects in areas served by transit.
Require on-site EV charging capabilities for parking spaces serving the project to meet jurisdiction-wide EV proliferation goals.	**Consistent.** The proposed Master Plan includes the installation of a minimum of two electric vehicle (EV) charging stations per lot or a total of a minimum of 18 electric vehicle charging stations would be provided on the PCC Campus.
Allow for new construction to install fewer on-site parking spaces than required by local municipal building code, if appropriate.	**Consistent.** LBCCD will review all projects that are included in the proposed Master Plan to determine if it is possible to reduce the number of parking spaces in the immediate vicinity of each project.
Dedicate on-site parking for shared vehicles.	**Consistent.** As part of the proposed Master Plan, in addition to the construction of the proposed parking structure, the existing PCC parking lots will be reconfigured to meet both current ADA requirements and CALGreen requirements that require dedicated spaces for carpools and clean air vehicles.
Provide adequate, safe, convenient, and secure on-site bicycle parking storage in multi-family residential projects and in non-residential projects.	**Consistent.** The PCC currently provides bicycle parking throughout the campus. All projects implemented as part of the proposed Master Plan would include additional bicycle parking that would exceed the CALGreen minimum bicycle parking requirements.
Provide on- and offsite safety improvements for bike, pedestrian, and transit connections, and/or implement relevant improvements identified in an applicable bicycle and/or pedestrian master plan.	**Consistent.** The proposed Master Plan will include a pedestrian and bicycle network plan that details connections to the existing transit stations that are located throughout the PCC.

Table 3-13: Consistency with CARB's 2017 Scoping Plan Measures for Individual Projects

Measures from Scoping Plan	Project Consistency
Require onsite renewable energy generation.	**Consistent.** LBCCD has committed to a net zero energy use campus by the buildout year of 2041, which will require the installation of onsite renewable energy generation.
Prohibit wood-burning fireplaces in new development, and require replacement of wood-burning fireplaces for renovations over a certain size developments.	**Consistent.** The proposed Master Plan does not include the installation of any wood-burning fireplaces, and currently no wood-burning fireplaces are on the PCC.
Require cool roofs and "cool parking" that promote cool surface treatment for new parking facilities as well as existing surface lots undergoing resurfacing.	**Consistent.** LBCCD will require all projects that are included in the Master Plan to meet the CALGreen Building requirements that require installation of cool roofs and cool asphalt for parking.
Require solar-ready roofs	**Consistent.** LBCCD will require all projects that are included in the Master Plan to meet the CALGreen Building requirements that require all new non-residential structures to be designed with solar-ready roofs.
Require organic collection in new developments	**Consistent.** LBCCD currently requires all landscape maintenance activities to collect and recycle green waste.
Require low-water landscaping in new developments. Require water-efficient landscape maintenance to conserve water and reduce landscape waste.	**Consistent.** LBCCD will require all new landscaping to utilize drought-tolerant plants and utilize water-efficient irrigation systems.
Achieve Zero Net Energy performance building standards prior to dates required by the Energy Code.	**Consistent.** LBCCD has committed to a net zero energy use campus by the buildout year of 2041.
Encourage new construction, including municipal building construction, to achieve third-party green building certifications, such as the GreenPoint Rated program, LEED rating system, or Living Building Challenge.	**Consistent.** LBCCD has committed to a net zero energy use campus by the buildout year of 2041, which will require all new construction to designed to meet the third-party green building certifications.
Require the design of bike lanes to connect to the regional bicycle network.	**Consistent.** The PCC currently has onsite bikeways that connect to the City of Long Beach's bicycle network as detailed on the City's General Plan.
Expand urban forestry and green infrastructure in new land development.	**Consistent.** The proposed Master Plan includes a Landscape Plan that would increase the number of trees on the PCC.
Require preferential parking spaces for park and ride to incentive carpooling.	**Consistent.** As part of the proposed Master Plan, in addition to the construction of the proposed parking structure, the existing PCC parking lots will be reconfigured to meet both current ADA requirements and CALGreen requirements that require dedicated spaces for carpools and clean air vehicles.

Table 3-13: Consistency with CARB's 2017 Scoping Plan Measures for Individual Projects

Measures from Scoping Plan	Project Consistency
Require a transportation management plan for specific plans which establishes a numeric target for non-SOV travel and overall VMT	**Consistent.** Although the PCC does not have a specific transportation management plan that quantifies non-single-occupancy vehicle (SOV) travel and overall vehicle miles traveled (VMT), the PCC does promote alternative transportation that results in lower SOV travel and overall VMT rates than what occurs in the region.
Develop a rideshare program targeting commuters to major employment centers.	**Not Applicable.** The Proposed Project consists of a Master Plan for a college. A large number of commuters would not be traveling from the Project Site to major employment centers.
Require the design of bus stops/shelters/express lanes in new development to promote the usage of mass-transit.	**Consistent.** Any bus stops or bus shelters that are moved or added as part of implementation of the proposed Master Plan will be designed to promote the usage of mass-transit. Any bus shelters that are moved or added shall include seating that is protected from weather and provides information about the bus service that includes maps and schedules of the routes serviced by the bus stop.
Require gas outlets in residential backyards for use with outdoor cooking appliances such as gas barbeques if natural gas service is available.	**Not Applicable.** No residential backyards would be a part of the Proposed Project.
Require the installation of electrical outlets on the exterior walls of both the front and back of residences to promote the use of electric landscape maintenance equipment	**Not Applicable.** No residential homes would be a part of the Proposed Project.
Require the design of the electric outlets and/or wiring in new residential unit garages to promote electric vehicle usage.	**Not Applicable.** No residential homes would be a part of the Proposed Project.
Require electric vehicle charging station and signage for non-residential developments.	**Consistent.** The proposed Master Plan includes the installation of a minimum of two electric vehicle charging stations per parking lot or a total of a minimum of 18 electric vehicle charging stations would be provided on the PCC.
Provide electric outlets to promote the use of electric landscape equipment to the extent feasible on parks and public/quasi-public lands.	**Consistent.** LBCCD will require all proposed buildings that are included in the Master Plan to meet the CALGreen Building requirements that require installation of outdoor outlets on non-residential structures.
Require each residential unit to be "solar ready," including installing the appropriate hardware and proper structural engineering.	**Not Applicable.** No residential homes would be a part of the Proposed Project.
Require the installation of energy conservation appliances such as on-demand tank-less water heaters and whole-house fans.	**Not Applicable.** These energy conservation appliances are for residential uses and would not operate efficiently in large non-residential buildings.
Require each residential and commercial building equip buildings with energy efficient AC units and heating systems with programmable	**Consistent.** LBCCD will require all proposed buildings that are included in the Master Plan to meet the CALGreen building requirements that require

Table 3-13: Consistency with CARB's 2017 Scoping Plan Measures for Individual Projects

Measures from Scoping Plan	Project Consistency
thermostats/timers.	installation of programmable thermostats.
Require large-scale residential developments and commercial buildings to report energy use, and set specific targets for per-capita energy use.	**Not Applicable.** The Proposed Project consists of a Master Plan for a college, which is neither a residential nor a commercial use.
Require each residential and commercial building to utilize low flow water fixtures such as low flow toilets and faucets.	**Consistent.** LBCCD will require all proposed buildings that are included in the Master Plan to meet the CALGreen building requirements that require installation of low flow water fixtures.
Require the use of energy-efficient lighting for all street, parking, and area lighting	**Consistent.** LBCCD will require all outdoor lighting that would be installed as part of implementation of the Master Plan to meet the CALGreen building requirements that require installation of energy-efficient lighting.
Require the landscaping design for parking lots to utilize tree cover and compost/mulch.	**Consistent.** LBCCD will require all renovated parking lots to meet City standards for tree coverage of parking lots.
Incorporate water retention in the design of parking lots and landscaping, including using compost/mulch.	**Consistent.** All parking lots and other improvements included in the proposed Master Plan will be required to meet the water retention requirements detailed in the WQMP.
Require the development project to propose an off-site mitigation project which should generate carbon credits equivalent to the anticipated GHG emission reductions.	**Not Applicable.** The GHG emissions calculations for the Proposed Project that are provided above in Impact 3.5-1 did not find an exceedance of the applicable GHG emissions thresholds and therefore no offsite mitigation is needed or required.
Require the project to purchase carbon credits from the CAPCOA GHG Reduction Exchange Program, American Carbon Registry (ACR), Climate Action Reserve (CAR) or other similar carbon credit registry determined to be acceptable by the local air district.	**Not Applicable.** The GHG emissions calculations for the Proposed Project that are provided above in Impact 3.5-1 did not find an exceedance of the applicable GHG emissions thresholds; and, therefore, no offsite mitigation is needed or required.
Encourage the applicant to consider generating or purchasing local and California-only carbon credits as the preferred mechanism to implement its off-site mitigation measure for GHG emissions and that will facilitate the State's efforts in achieving the GHG emission reduction goal.	**Not Applicable.** The GHG emissions calculations for the Proposed Project that are provided above in Impact 3.5-1 did not find an exceedance of the applicable GHG emissions thresholds; and, therefore, no offsite mitigation is needed or required.

Source: CARB 2017

As shown in Table 3-13, with implementation of design features committed to by the LBCCD and statewide regulatory requirements including the CALGreen building standards, the Proposed Project would be consistent with all feasible mitigation measure for individual projects provided in the CARB's 2017 Scoping Plan. Therefore, implementation of the proposed 2041 Facilities Master Plan would not conflict with any applicable plan that reduces GHG emissions. Impacts would be less than significant.

3.6 NOISE

3.6.1 Introduction

This section provides information on ambient noise conditions in the vicinity of the PCC and identifies potential impacts associated with noise as a result of the construction and operation of the Proposed Project. The noise measurement printouts and noise modeling output are included in this EIR as Appendix C.

3.6.2 Existing Environmental Setting

Noise Terminology

Noise Fundamentals

Noise is defined as unwanted or objectionable sound. The effect of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment. The unit of measurement used to describe a noise level is the decibel (dB). The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, the "A-weighted" noise scale, which weights the frequencies to which humans are sensitive, is used for measurements. Noise levels using A-weighted measurements are written dB(A) or dBA. Decibels are measured on a logarithmic scale, which quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as doubling a traffic volume, would increase the noise level by 3 dBA; a halving of the energy would result in a 3-dBA decrease.

A given level of noise may be more or less tolerable depending on the duration of exposure experienced by an individual. A number of measures of noise exposure consider not only the A-level variation of noise but also the duration of the disturbance. The Day-Night Average Level (L_{dn}) is the weighted average of the intensity of a sound, with corrections for time of day and averaged over 24 hours. The time of day corrections require the addition of 10 decibels to sound levels at night between 10 p.m. and 7 a.m. The Community Noise Equivalent Level (CNEL) is similar to the L_{dn}, except that it adds another 4.77 decibels to sound levels during the evening hours between 7 p.m. and 10 p.m. These additions are made to the sound levels at these time periods because during the evening and nighttime hours, when compared to daytime hours, ambient noise levels decrease, which creates an increased sensitivity to sounds. For this reason, the sound appears louder in the evening and nighttime hours and is weighted accordingly. The City of Long Beach Noise Element uses the Day-Night Sound Level (L_{dn}).

It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increases or decreases, that a change of 5 dBA is readily perceptible, and that an increase (or decrease) of 10 dBA sounds twice (half) as loud (Caltrans 2013).

Groundborne Vibration Fundamentals

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking

of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

Several different methods are used to quantify vibration amplitude such as the maximum instantaneous peak in the vibrations velocity, which is known as the peak particle velocity (PPV) or the root mean square (rms) amplitude of the vibration velocity. Due to the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels and is denoted as (L_v) and is based on the rms velocity amplitude. A commonly used abbreviation is "VdB", which in this text is when L_v is based on the reference quantity of 1 microinch per second.

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Off-site sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible groundborne noise or vibration.

Existing Noise Conditions

Ambient Noise Levels

To determine the existing noise level at the PCC, noise measurements have been taken in the vicinity of the Project Site. The field survey noted that noise within the area of the Project Site is generally characterized by vehicular traffic on Walnut Avenue, Orange Avenue, and East 20th Street. Other noises are related to yard maintenance, pets, pedestrians, and parking lot activities.

Depending upon how close the proposed improvements will be to the surrounding City arterials, traffic noise is generally the dominant noise source on campus. It does, however, dissipate at receptors that are more removed from the arterials and in locations where existing buildings provide shielding from the traffic noise. Noise generated by student and general campus maintenance activities are also noticeable but relatively quiet. General outdoor activities that occur throughout PCC include people walking, talking, eating, and studying.

The results of the noise level measurements are presented in Table 3-14. The noise measurements were taken on a Wednesday in order to obtain the worst-case activity levels at the PCC. A photo index of the noise monitoring sites and the noise monitoring data printouts are included in Appendix C (see pages C-1 to C-10 of Appendix C).

Table 3-14: Existing (Ambient) Noise Level Measurements at PCC

Site Description	Start Time and Duration of Measurement	Primary Noise Sources	Noise Levels
Located in front of the home at 1770 Walnut Avenue, approximately 20 feet east of the Walnut Avenue centerline and 190 feet south of the Pacific Coast Highway centerline	8:22 a.m. (15:00)	Vehicles on Walnut Avenue	63.1 dBA L_{eq} 81.9 dBA_{max}
Located on the driveway of the home at 1857 Orange Avenue, approximately 50 feet west of the Orange Avenue centerline and 125 feet south of the 19th Street centerline	8:46 a.m. (15:00)	Vehicles on Orange Avenue	65.7 dBA L_{eq} 76.7 dBA_{max}
Located in front of the home at 1441 20th Street, approximately 20 feet north of the 20th Street centerline and 60 feet east of the Alamitos Avenue centerline	9:05 a.m. (16:00)	Vehicles on 20th Street	55.0 dBA L_{eq} 64.0 dBA_{max}

Source: Larson-Davis Model 831 precision sound level meter programmed in "slow" mode to record noise levels in "A" weighted form.

Long Beach Airport

Another source of noise is the Long Beach Municipal Airport. However, as shown in Figure 3-1, the LBCC PCC is located well outside the 65 dB CNEL contour for the airport.

3.6.3 Applicable Regulations

The Proposed Project would be constructed in the City of Long Beach in Los Angeles County, within the State of California. The following subsections present a summary of noise-related regulatory requirements for the 2041 Facilities Master Plan for the PCC Improvements.

Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce
- Assisting state and local abatement efforts
- Promoting noise education and research

The Federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) agency prohibits exposure of workers to excessive sound levels. The Department of Transportation (DOT) assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration (FAA) regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration (FTA). Transit noise is regulated by the federal Urban Mass Transit Administration (UMTA), while freeways that are part of the interstate highway system are

regulated by the Federal Highway Administration (FHWA). Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that "noise sensitive" uses are either prohibited from being sited adjacent to a highway or, alternately, that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Although the Proposed Project is not under the jurisdiction of the FTA, the FTA is the only agency that has defined what constitutes a significant noise impact from implementing a project. The FTA recommends developing construction noise criteria on a project-specific basis that utilizes local noise ordinances if possible. Project construction noise criteria should take into account the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land uses. The FTA standards are based on extensive studies by the FTA and other governmental agencies on the human effects and reaction to noise and a summary of the FTA findings for a detailed construction noise assessment are provided below in Table 3-15.

Table 3-15: FTA Construction Noise Criteria

Land Use	Day (dBA L_{eq}(8-hour)	Night (dBA L_{eq}(8-hour))	30-Day Average (dBA L_{dn})
Residential	80	70	75[1]
Commercial	85	85	80[2]
Industrial	90	90	85[2]

Notes:
[1] In urban areas with very high ambient noise levels (Ldn > 65 dB), Ldn from construction operations should not exceed existing ambient +10 dB
[2] 24-hour Leq not Ldn
Source: Federal Transit Administration, 2006.

Table 3-16 provides the thresholds of permanent noise level increase at the project level utilized by the FTA. As shown in Table 3-16, the allowable cumulative noise level increase created from a project would range from 0 to 7 dBA, which is based on the existing (ambient) noise levels in the project vicinity. The justification for the sliding scale is that people already exposed to high levels of noise should be expected to tolerate only a small increase in the amount of noise in their community. In contrast, if the existing noise levels are quite low, it is reasonable to allow a greater change in the community noise for the equivalent difference in annoyance.

Figure 3-1: Long Beach Airport Noise Contours

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VISTA ENVIRONMENTAL

Figure 3-1
Long Beach Airport Noise Contours

Table 3-16: FTA Project Effects on Cumulative Noise Exposure

Existing Noise Exposure (dBA L_{eq} or L_{dn})	Allowable Noise Impact Exposure dBA L_{eq} or L_{dn}		
	Project Only	Combined	Noise Exposure Increase
45	51	52	+7
50	53	55	+5
55	55	58	+3
60	57	62	+2
65	60	66	+1
70	64	71	+1
75	65	75	0

Source: Federal Transit Administration 2006.

State Regulations

Noise Standards

California Department of Health Services Office of Noise Control

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the "Land Use Compatibility for Community Noise Environments Matrix," which allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise.

California Noise Insulation Standards

Title 24, Chapter 1, Article 4 of the California Administrative Code (California Noise Insulation Standards) requires noise insulation in new hotels, motels, apartment houses, and dwellings (other than single-family detached housing) that provides an annual average noise level of no more than 45 dBA CNEL. When such structures are located within a 60-dBA CNEL (or greater) noise contour, an acoustical analysis is required to ensure that interior levels do not exceed the 45-dBA CNEL annual threshold. In addition, Title 21, Chapter 6, Article 1 of the California Administrative Code requires that all habitable rooms, hospitals, convalescent homes, and places of worship shall have an interior CNEL of 45 dB or less due to aircraft noise.

Government Code Section 65302

Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

California Vehicle Code Section 27200-27207 – On-Road Vehicle Noise

California Vehicle Code Section 27200-27207 provides noise limits for vehicles operated in California. For vehicles over 10,000 pounds noise is limited to 88 dB for vehicles manufactured before 1973, 86 dB for

vehicles manufactured before 1975, 83 dB for vehicles manufactured before 1988, and 80 dB for vehicles manufactured after 1987. All measurements are based at 50 feet from the vehicle.

California Vehicle Code Section 38365-38380 – Off-Road Vehicle Noise

California Vehicle Code Section 38365-38380 provides noise limits for off-highway motor vehicles operated in California: 92 dBA for vehicles manufactured before 1973, 88 dBA for vehicles manufactured before 1975, 86 dBA for vehicles manufactured before 1986, and 82 dBA for vehicles manufactured after December 31, 1985. All measurements are based at 50 feet from the vehicle.

Vibration Standards

Title 14 of the California Administrative Code Section 15000 requires that all State and local agencies implement the California Environmental Quality Act (CEQA) Guidelines, which requires the analysis of exposure of persons to excessive groundborne vibration. However, no statute has been adopted by the State that quantifies the level at which excessive groundborne vibration occurs.

Caltrans issued the *Transportation- and Construction-Induced Vibration Guidance Manual* in 2004. The manual provides practical guidance to Caltrans engineers, planners, and consultants who must address vibration issues associated with the construction, operation, and maintenance of Caltrans projects. However, this manual is also used as a reference point by many lead agencies and CEQA practitioners throughout California, as it provides numeric thresholds for vibration impacts. Thresholds are established for continuous (construction-related) and transient (transportation-related) sources of vibration, which found that the human response becomes distinctly perceptible at 0.25 inch per second PPV for transient sources and 0.04 inch per second PPV for continuous sources.

Local Regulations – City of Long Beach

The City of Long Beach General Plan and Municipal Code establishes the following applicable policies related to noise and vibration.

City of Long Beach General Plan

Table 3-17 identifies the standards for transportation noise sources as listed in the Noise Element for the City of Long Beach General Plan.

Table 3-17: City of Long Beach Noise Element Standards

Major Land Use Type	Exterior			Interior L_{dn}
	Maximum Single Hourly Peak	L10[a]	L50[b]	
All noise-sensitive land-uses (residential, school, hospital, etc.) 7:00 a.m. – 10:00 p.m.	70 dB(A)	55 dB(A)	45 dB(A)	45 dB(A)
All noise-sensitive land uses (residential, school, hospital, etc.) 10:00 p.m. – 7:00 a.m.	60 dB(A)	45 dB(A)	35 dB(A)	35 dB(A)
Commercial (anytime)	75 dB(A)	65 dB(A)	55 dB(A)	N/A

Table 3-17: City of Long Beach Noise Element Standards

Major Land Use Type	Exterior			Interior L_{dn}
	Maximum Single Hourly Peak	L10[a]	L50[b]	
Industrial (anytime)	85 dB(A)	70 dB(A)	60 dB(A)	N/A

Notes:
a. Noise levels exceeded 10% of the time
b. Noise levels exceeded 50% of the time
Source: City of Long Beach General Plan Noise Element.

City of Long Beach Municipal Code

The City's Municipal Code identifies standards for noise intrusion from non-transportation sources within various Noise Districts. LBCC PCC is located in District One. Table 3-18 summarizes the applicable standards in Noise District One.

Table 3-18: City of Long Beach Exterior Noise Ordinance Standards

Noise level that may not be exceeded for more than…	Daytime[a] 7 a.m. – 10 p.m.	Nighttime[a] 10 p.m. – 7 a.m.
30 minutes in any hour	50 dB(A)	45 dB(A)
15 minutes in any hour	55 dB(A)	50 dB(A)
5 minutes in any hour	60 dB(A)	55 dB(A)
1 minute in any hour	65 dB(A)	60 dB(A)
Any time	70 dB(A)	65 dB(A)

Notes:
a. In the event that the alleged offensive noise contains a steady audible tone such as a whine, screech, or hum, or is a repetitive noise such as hammering or riveting or contains music or speech conveying informational content, the specified noise limits are reduced by 5 dB(A).
Source: City of Long Beach Municipal Code Chapter 8.80.160.

Section 8.80.202 of the City's Noise Ordinance regulates noise from construction activities. These regulations limit the permissible hours of construction to between 7:00 a.m. and 7:00 p.m. on weekdays or federal holidays and between 9:00 a.m. and 6:00 p.m. on Saturdays. Construction is generally prohibited on Sundays. The Noise Ordinance also limits hours of operation for mechanically powered tools (e.g., saws, sanders, drills, grinders, lawnmowers, and garden tools) from 7:00 a.m. to 10:00 p.m. Leaf blowers have more stringent standards and can only be used between 8:00 a.m. and 8:00 p.m. on weekdays, 9:00 a.m. and 5:00 p.m. on Saturdays, and 11:00 a.m. and 5:00 p.m. on Sundays.

The Noise Ordinance also provides standards for vibration (Section 8.80.200(G)). It is a violation to operate or permit the operation of any device that creates vibration that is above the vibration perception threshold of an individual at or beyond the property boundary of the source. The Noise Ordinance defines the perception threshold as 0.001 g's in the frequency range of 0-30 hertz and 0.003 g's in the frequency range between 30 and 100 hertz. It should be noted that this perception threshold is only applicable to vibration caused during the operation of the Proposed Project.

3.6.4 Impacts and Mitigation

Impact 3.6-1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies.

The Proposed Project would not generate substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the General Plan or Noise Ordinance or applicable standards of other agencies. The following section calculates the potential noise emissions associated with the construction and operations of the Proposed Project and compares the noise levels to the City standards.

Construction-Related Noise

Construction activities for the Proposed 2041 Facilities Master Plan are anticipated to include demolition of 44,292 square feet of existing structures, grading up to 30 acres of the PCC, building construction of 361,561 feet of new building space and renovating 20,111 square feet of building space, paving the onsite roads and parking areas, and applying architectural coatings. Noise impacts from construction activities associated with the Proposed Project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. The nearest sensitive receptors are students and workers at the Mary Butler School, located adjacent to the proposed renovation activities. Single-family homes are also located approximately 45 feet to the north of the Project Site on the north side of 20th Street, 80 feet to the west of the Project Site on the west side of Orange Avenue; and single-family homes are located approximately 250 feet southeast of the Project Site on the southeast corner of Pacific Coast Highway and Walnut Avenue.

Section 8.80.202 of the City's Noise Ordinance restricts construction activities from occurring between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, between 6:00 p.m. and 9:00 a.m. on Saturdays, or anytime on Sundays or federal holidays. Through adherence to the construction-related noise requirements provided in the City's Noise Ordinance, construction-related noise levels would not exceed any noise standards established in the general plan or noise ordinance. However, the City construction noise standards do not provide any limits to the noise levels that may be created from construction activities; and, even with adherence to the City standards, the resultant construction noise levels may result in a significant substantial temporary noise increase to the nearby sensitive receptors.

In order to determine if the proposed construction activities would create a significant substantial temporary noise increase, the FTA construction noise criteria thresholds detailed above have been utilized, which show that a significant construction noise impact would occur if construction noise exceeds 80 dBA during the daytime at any of the nearby homes or school.

Construction noise impacts to the nearby sensitive receptors have been calculated through the use of the Roadway Construction Noise Model (RCNM) and the parameters and assumptions detailed in Appendix C. The results are shown below in Table 3-19, and the RCNM printouts are provided in Appendix C (see pages C-11 to C-28 of Appendix C).

Table 3-19 Worst Case Construction Noise Levels at Nearest Receptors

Construction Phase	Mary Butler School to the Northwest		Homes on East Side of Walnut Avenue		Homes on West Side of Orange Avenue		Homes on North Side of 20th Street	
	Distance (feet)	Noise Level (dBA L_{dn})	Distance (feet)	Noise Level (dBA L_{dn})	Distance (feet)	Noise Level (dBA L_{dn})	Distance (feet)	Noise Level (dBA L_{dn})
Demolition	90	79	250	71	380	68	510	65
Grading	270	70	250	71	380	68	740	63
Building Construction	90	75	275	69	270	69	510	65
Paving	270	65	250	65	380	62	740	57
Architectural Coatings	270	59	275	59	270	59	510	54
City's Noise Threshold		**80**		**80**		**80**		**80**

Source: RCNM, Federal Highway Administration, 2006 (See pages C-11 to C-28 of Appendix C).

Table 3-19 shows that the greatest noise impact would occur during the demolition phase of construction at the Mary Butler School located northwest of proposed building renovations with a noise level as high as 79 dBA, which is within the FTA's construction noise threshold of 80 dBA. Table 3-19 also shows that none of the construction phases would exceed the City's noise standard. Through adherence to the noise limitation of allowable construction times provided in Section 8.80.202 of the City's Municipal Code, the Proposed Project would not create a substantial temporary increase in ambient noise levels from construction of the Proposed Project. Therefore, construction-related noise impacts would be less than significant.

Operational-Related Noise

The implementation of the proposed 2041 Facilities Master Plan would include development of institutional junior college land uses. Potential noise impacts associated with the operations of the Proposed Project would be from Project-generated vehicular traffic on the nearby roadways and from onsite activities, which have been analyzed separately below.

Roadway Vehicular Noise

Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires. The level of traffic noise depends on three primary factors (1) the volume of traffic, (2) the speed of traffic, and (3) the number of trucks in the flow of traffic. The Proposed Project does not propose any uses that would require a substantial number of truck trips; and the Proposed Project would not alter the speed limit on any existing roadway, so the Proposed Project's potential offsite noise impacts have been focused on the noise impacts associated with the change of volume of traffic that would occur with development of the Proposed Project.

The City of Long Beach General Plan Noise Element provides the goal of *diminishing the transportation roar that impacts on the population*. However, neither the General Plan nor the *CEQA Guidelines* define what constitutes a "substantial permanent increase to ambient noise levels;" as such, this impact analysis has utilized guidance from the Federal Transit Administration for a moderate impact that has been detailed above in Table 3-19.

The potential offsite traffic noise impacts created by the ongoing operations of the Proposed Project have been analyzed through utilization of the FHWA model. The FHWA model noise calculation spreadsheets that show the parameters utilized in the FHWA model are provided in Appendix C (see pages C-29 to C-56 of Appendix C). The Proposed Project's offsite traffic noise impacts have been analyzed for both the existing and year 2041 conditions, which are discussed below.

Existing Conditions

The Proposed Project's potential offsite noise impacts have been calculated through a comparison of the Existing scenario with the Existing plus Project scenario. The results of this comparison are shown in Table 3-20.

Table 3-20 Existing Year Project Traffic Noise Contributions

Roadway	Segment	dBA L_{dn} at Nearest Receptor[a]			Increase Threshold[b]
		Existing	Existing With Project	Project Contribution	
Atlantic Avenue	North of Pacific Coast Highway	67.3	67.4	0.1	+1 dBA
Atlantic Avenue	South of Pacific Coast Highway	67.6	67.7	0.1	+1 dBA
Martin Luther King Jr. Avenue	North of Pacific Coast Highway	60.0	60.1	0.1	+2 dBA
Orange Avenue	North of Hill Street	66.4	66.5	0.1	+1 dBA
Orange Avenue	North of 20th Street	67.0	67.0	0.0	+1 dBA
Orange Avenue	North of East 19th Street/Alamitos Avenue	64.0	64.1	0.1	+2 dBA
Orange Avenue	North of Pacific Coast Highway	67.7	67.9	0.2	+1 dBA
Orange Avenue	South of Pacific Coast Highway	63.1	63.2	0.1	+2 dBA
Walnut Avenue	North of Hill Street	56.3	56.6	0.3	+3 dBA
Walnut Avenue	North of 20th Street	52.0	52.4	0.4	+5 dBA
Walnut Avenue	North of Pacific Coast Highway	61.1	61.7	0.6	+2 dBA
Walnut Avenue	South of Pacific Coast Highway	59.7	59.9	0.2	+3 dBA
Cherry Avenue	North of Pacific Coast Highway	68.9	69.0	0.1	+1 dBA
Cherry Avenue	South of Pacific Coast Highway	68.1	68.2	0.1	+1 dBA
Hill Street	West of Orange Avenue	55.9	56.0	0.1	+3 dBA
Hill Street	East of Walnut Avenue	56.5	56.6	0.1	+3 dBA
20th Street	West of Orange Avenue	55.3	55.4	0.1	+3 dBA
20th Street	West of Alamitos Avenue	51.0	51.2	0.2	+5 dBA
20th Street	East of Alamitos Avenue	56.4	56.5	0.1	+3 dBA
20th Street	East of Walnut Avenue	55.7	55.8	0.1	+3 dBA
19th Street	West of Orange Avenue	52.7	52.7	0.0	+5 dBA
Pacific Coast Highway	West of Atlantic Avenue	70.1	70.2	0.1	+1 dBA
Pacific Coast Highway	West of Martin Luther King Jr. Avenue	72.2	72.3	0.1	+1 dBA
Pacific Coast Highway	West of Orange Avenue	69.3	69.5	0.2	+1 dBA
Pacific Coast Highway	West of May Avenue	71.1	71.2	0.1	+1 dBA
Pacific Coast Highway	East of Walnut Avenue	72.6	72.7	0.1	+1 dBA
Pacific Coast Highway	East of Cherry Avenue	68.7	68.8	0.1	+1 dBA

Table 3-20 Existing Year Project Traffic Noise Contributions

Notes:
a. Distance to nearest residential uses are shown in Appendix C. Noise levels do not take into account existing noise barriers.
b. Increase Threshold obtained from the FTA's allowable noise impact exposures.

Source: FHWA Traffic Noise Prediction Model FHWA-RD-77-108 (see pages C-29 to C-42 of Appendix C).

Table 3-20 shows that for the existing conditions, the Proposed Project's permanent noise increases to the nearby homes from the generation of additional vehicular traffic would not exceed the FTA's allowable increase thresholds detailed above. Therefore, the Proposed Project would not result in a substantial permanent increase in ambient noise levels for the existing conditions. Impacts would be less than significant.

Year 2041 Conditions

The Proposed Project's potential offsite noise impacts have been calculated through a comparison of the year 2041 without Project scenario to the year 2041 with Project scenario. The results of this comparison are shown in Table 3-21.

Table 3-21 Year 2041 Project Traffic Noise Contributions

Roadway	Segment	dBA L_{dn} at Nearest Receptor[a]			Increase Threshold[b]
		2041 No Project	2041 With Project	Project Contribution	
Atlantic Avenue	North of Pacific Coast Highway	68.1	68.1	0.0	+1 dBA
Atlantic Avenue	South of Pacific Coast Highway	68.4	68.5	0.1	+1 dBA
Martin Luther King Jr. Avenue	North of Pacific Coast Highway	60.7	60.8	0.1	+2 dBA
Orange Avenue	North of Hill Street	67.2	67.2	0.0	+1 dBA
Orange Avenue	North of 20th Street	67.8	67.8	0.0	+1 dBA
Orange Avenue	North of East 19th Street/Alamitos Avenue	64.8	64.9	0.1	+2 dBA
Orange Avenue	North of Pacific Coast Highway	68.5	68.7	0.2	+1 dBA
Orange Avenue	South of Pacific Coast Highway	64.0	64.0	0.0	+2 dBA
Walnut Avenue	North of Hill Street	57.0	57.3	0.3	+3 dBA
Walnut Avenue	North of 20th Street	53.1	53.4	0.3	+5 dBA
Walnut Avenue	North of Pacific Coast Highway	61.9	62.5	0.6	+2 dBA
Walnut Avenue	South of Pacific Coast Highway	60.4	60.5	0.1	+2 dBA
Cherry Avenue	North of Pacific Coast Highway	69.6	69.7	0.1	+1 dBA
Cherry Avenue	South of Pacific Coast Highway	68.8	68.9	0.1	+1 dBA
Hill Street	West of Orange Avenue	56.5	56.6	0.1	+3 dBA
Hill Street	East of Walnut Avenue	57.2	57.3	0.1	+3 dBA
20th Street	West of Orange Avenue	56.0	56.1	0.1	+3 dBA
20th Street	West of Alamitos Avenue	52.2	52.3	0.1	+5 dBA
20th Street	East of Alamitos Avenue	57.4	57.5	0.1	+3 dBA

Table 3-21 Year 2041 Project Traffic Noise Contributions

Roadway	Segment	dBA L_{dn} at Nearest Receptor[a]			Increase Threshold[b]
		2041 No Project	2041 With Project	Project Contribution	
20th Street	East of Walnut Avenue	56.5	56.6	0.1	+3 dBA
19th Street	West of Orange Avenue	53.3	53.3	0.0	+5 dBA
Pacific Coast Highway	West of Atlantic Avenue	71.7	71.7	0.0	+1 dBA
Pacific Coast Highway	West of Martin Luther King Jr. Avenue	73.7	73.8	0.1	+1 dBA
Pacific Coast Highway	West of Orange Avenue	70.8	70.9	0.1	+1 dBA
Pacific Coast Highway	West of May Avenue	72.5	72.6	0.1	+1 dBA
Pacific Coast Highway	East of Walnut Avenue	74.0	74.2	0.1	+1 dBA
Pacific Coast Highway	East of Cherry Avenue	70.2	70.3	0.1	+1 dBA

Notes:

a. Distance to nearest residential uses are shown in Appendix C. Noise levels do not take into account existing noise barriers.
b. Increase Threshold obtained from the FTA's allowable noise impact exposures.

Source: FHWA Traffic Noise Prediction Model FHWA-RD-77-108 (see pages C-43 to C-56 of Appendix C).

Table 3-21 shows that for the year 2041 conditions, the Proposed Project's permanent noise increases to the nearby homes from the generation of additional vehicular traffic would not exceed the FTA's allowable increase thresholds detailed above. Therefore, the Proposed Project would not result in a substantial permanent increase in ambient noise levels for the year 2041 conditions. Impacts would be less than significant.

Therefore, roadway vehicle noise impacts resulting from the ongoing operation of the Proposed 2041 Facilities Master Plan would be less than significant.

Onsite Noise Sources

The operation of the Proposed Project would create an increase in onsite noise levels from rooftop mechanical equipment, parking lot activities, and delivery truck activities.

Section 8.80.160 of the City's Municipal Code limits noise levels at the nearby residential properties to 50 dBA between 7:00 a.m. and 10:00 pm. and 45 dBA between 10:00 p.m. and 7:00 a.m. the following day.

In order to determine the noise impacts from rooftop mechanical equipment, parking lot activities, and delivery truck activities, reference noise measurements were taken of each noise source and are shown below in Table 3-22. Table 3-22 also shows the anticipated noise level from each source at the nearest off-site receptors, which were analyzed based on the propagation rates for point sources of 6 dB per doubling of distance (i.e., if the noise level is 56 dB at 50 feet from the source it would be 50 dB at 100 feet). It should also be noted that the distances utilized in the reference noise measurements vary between 5 feet and 50 feet, so in some cases the reference noise level may be higher; but, depending on the distances it was taken, it may result in a lesser noise impact at the nearby homes. The operational reference noise measurements are shown in Appendix C (see pages C-57 to C-62 of Appendix C).

Table 3-22: Operational Noise Levels at the Nearest Receptors

Noise Source	Mary Butler School to the Northwest		Homes on East Side of Walnut Avenue		Homes on West Side of Orange Avenue		Homes on North Side of 20th Street	
	Distance (feet)	Noise Level (dBA L_{eq})	Distance (feet)	Noise Level (dBA L_{eq})	Distance (feet)	Noise Level (dBA L_{eq})	Distance (feet)	Noise Level (dBA L_{eq})
Rooftop Equipment[1]	125	45	285	38	280	38	520	32
Parking Lot[2]	220	30	370	26	340	26	790	19
Truck Delivery[3]	230	37	370	33	600	29	670	28
Combined Noise Levels		**45**		**39**		**38**		**34**
City Noise Standards (Day/Night)		**50/45**		**50/45**		**50/45**		**50/45**
Exceeds City Standards (Day/Night)?		**No/No**		**No/No**		**No/No**		**No/No**

Notes:

[1] The rooftop equipment noise level was based on a noise measurement 10 feet from an operational rooftop HVAC unit that measured 66.6 dBA Leq. (see pages C-57 to C-58 of Appendix C).

[2] The parking lot noise level was based on a noise measurement 5 feet from a commercial parking lot that produced a noise level of 63.1 dBA Leq (see pages C-59 to C-60 of Appendix C).

[3] The truck delivery noise level was based on a noise measurement 30 feet from a truck unloading that produced a noise level of 54.8 dBA Leq (see pages C-61 to C-62 of Appendix C).

Source: Noise calculation methodology from Caltrans, 2013.

Table 3-22 shows that the students and workers at the Mary Butler School located northwest of the Project Site would experience the highest operational noise level impact from the Proposed Project with a combined noise level of 45 dBA L_{eq}. This is within both the City's daytime and nighttime noise standards of 50 dBA L_{eq} and 45 dBA L_{eq}, respectively. Table 3-22 also shows that the combined levels at all the nearby homes would be within the City's daytime and nighttime noise standards. Therefore, the Proposed Project's onsite operational noise sources would not generate noise levels in the vicinity of the Project Site in excess of standards in the Noise Ordinance. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are necessary.

Residual Impacts

Impacts would be less than significant.

Impact 3.6-2: Generation of excessive groundborne vibration or groundborne noise levels.

The Proposed Project would not expose persons to or generate excessive groundborne vibration or groundborne noise levels. The following section analyzes the potential vibration impacts associated with the construction and operations of the Proposed Project.

Construction-Related Vibration Impacts

Construction activities for the Proposed 2041 Facilities Master Plan are anticipated to include demolition of 44,292 square feet of existing structures, grading up to 30 acres of the PCC, building construction of 361,561 feet of new building space and renovating 20,111 square feet of building space, paving the onsite roads and parking areas, and applying architectural coatings. Vibration impacts from construction activities associated with the Proposed Project would typically be created from the operation of heavy off-road equipment, such as bulldozers, excavators, scrapers, vibrator rollers, etc. The nearest sensitive receptors are students and workers at the Mary Butler School, located approximately 90 feet from the proposed renovation activities.

Section 8.80.200(G) of the City's Municipal Code limits vibration impacts to the nearby single-family homes to 0.001 g's in the frequency range of 0 to 30 hertz and 0.003 g's in the frequency range of 30 to 100 hertz. The acceleration of gravity (g), which is 32.2 feet per second, can be converted into peak particle velocity by multiplying 0.001 g's by 32.2 and then converting to inch per second, which results in a threshold of 0.386 inch per second peak particle velocity (PPV).

Table 3-23: Typical Vibration from Construction Equipment and Vibration Levels at Nearest Homes

Construction Equipment		Peak Particle Velocity (inches/second)	
		Reference Level at 25 feet	At Mary Butler School (90 Feet)
Pile Driver (Impact)	Upper Range	1.518	0.3710
	Typical	0.644	0.1574
Pile Driver (Sonic)	Upper Range	0.734	0.1794
	Typical	0.170	0.0415
Clam Shovel Drop (Slurry Wall)		0.202	0.0494
Vibratory Roller		0.210	0.0513
Hoe Ram		0.089	0.0217
Large Bulldozer		0.089	0.0217
Caisson Drill		0.089	0.0217
Loaded Trucks		0.076	0.0186
Jackhammer		0.035	0.0086
Small Bulldozer		0.003	0.0007

Source: Federal Transit Administration 2006.

Table 3-23 shows that the highest vibration level at the Mary Butler School located as near as 90 feet from proposed construction activities would occur during operation of a pile driver with a vibration level as high as 0.371 inch per second PPV. Table 3-23 also shows that, based on typical propagation rates, all vibration levels at the nearby Mary Butler School would be within the City's 0.386 in per second PPV vibration standard. Impacts would be less than significant.

Operational-Related Vibration Impacts

The Proposed Project would consist of the development of institutional junior college uses. The only anticipated source of vibration would be from the operation of delivery trucks on the PCC. The nearest sensitive receptors are students and workers at the Mary Butler School, located approximately 230 feet

from where delivery trucks that would be servicing the new and renovated structures on the PCC site are anticipated to operate.

Section 8.80.200(G) of the City's Municipal Code limits vibration impacts to the nearby single-family homes to 0.001 g's in the frequency range of 0 to 30 hertz and 0.003 g's in the frequency range of 30 to 100 hertz. The acceleration of gravity (g), which is 32.2 feet per second, can be converted into peak particle velocity by multiplying 0.001 g's by 32.2 and then converting to inch per second, which results in a threshold of 0.3864 inch per second PPV.

Caltrans has done extensive research on vibration levels created along freeways and State Routes, and their vibration measurements of roads have never exceeded 0.08 inch per second PPV at 15 feet from the center of the nearest lane with the worst combinations of heavy trucks. Truck loading activities associated with implementation of the Master Plan would occur onsite as near as 230 feet from the Mary Butler School. Based on typical propagation rates, the vibration level at the Mary Butler School would be 0.004 inch per second PPV. This would be within the City's vibration standard of 0.386 inch per second PPV. Therefore, vibration created from operation of the Proposed Project would be below the threshold of perception at the nearby offsite receptors. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are necessary.

Residual Impacts

Impacts would be less than significant.

3.7 TRANSPORTATION

3.7.1 Introduction

This transportation section summarizes the results of a Traffic Study conducted for the proposed LBCCD 2041 Facilities Master Plan PCC Improvements, located in the City of Long Beach. This section focuses on evaluating the operating conditions at key study intersections within the Project vicinity, including estimating trip-generating potential of the Proposed Project and forecasting future operating conditions without and with the Proposed Project. The methodology, findings, and conclusions of the Traffic Impact Analysis (see Appendix D for the complete analysis) are presented herein. A total of 12 roadway intersections, or study intersections, in the vicinity of the Proposed Project were analyzed to assess the effects of the trips that would be generated by the Proposed Project. The City of Long Beach was consulted to obtain consensus on the traffic scope, methodology, and assumptions. The traffic report satisfies the traffic impact requirements of the Cities of Long Beach and Signal Hill and is consistent with the most current *Congestion Management Program (CMP) for Los Angeles County.* The traffic impact analysis also incorporated both cumulative traffic growth from specific development projects in the surrounding area and overall ambient growth in background traffic.

As noted in the Initial Study (see Appendix A), potential impacts related to consistency with *CEQA Guidelines* Section 15064.3, increase in hazards, and emergency access were found to have less-than-significant impacts. Therefore, these issues are not discussed in the SEIR. Refer to Appendix A, Initial Study, for details on these environmental assessments.

3.7.2 Existing Environmental Setting

Project Study Area

For the Project traffic impact analysis, 12 study intersections were defined for the overall study area. The following is a list of the study intersections:

Table 3-24: Project Study Intersections

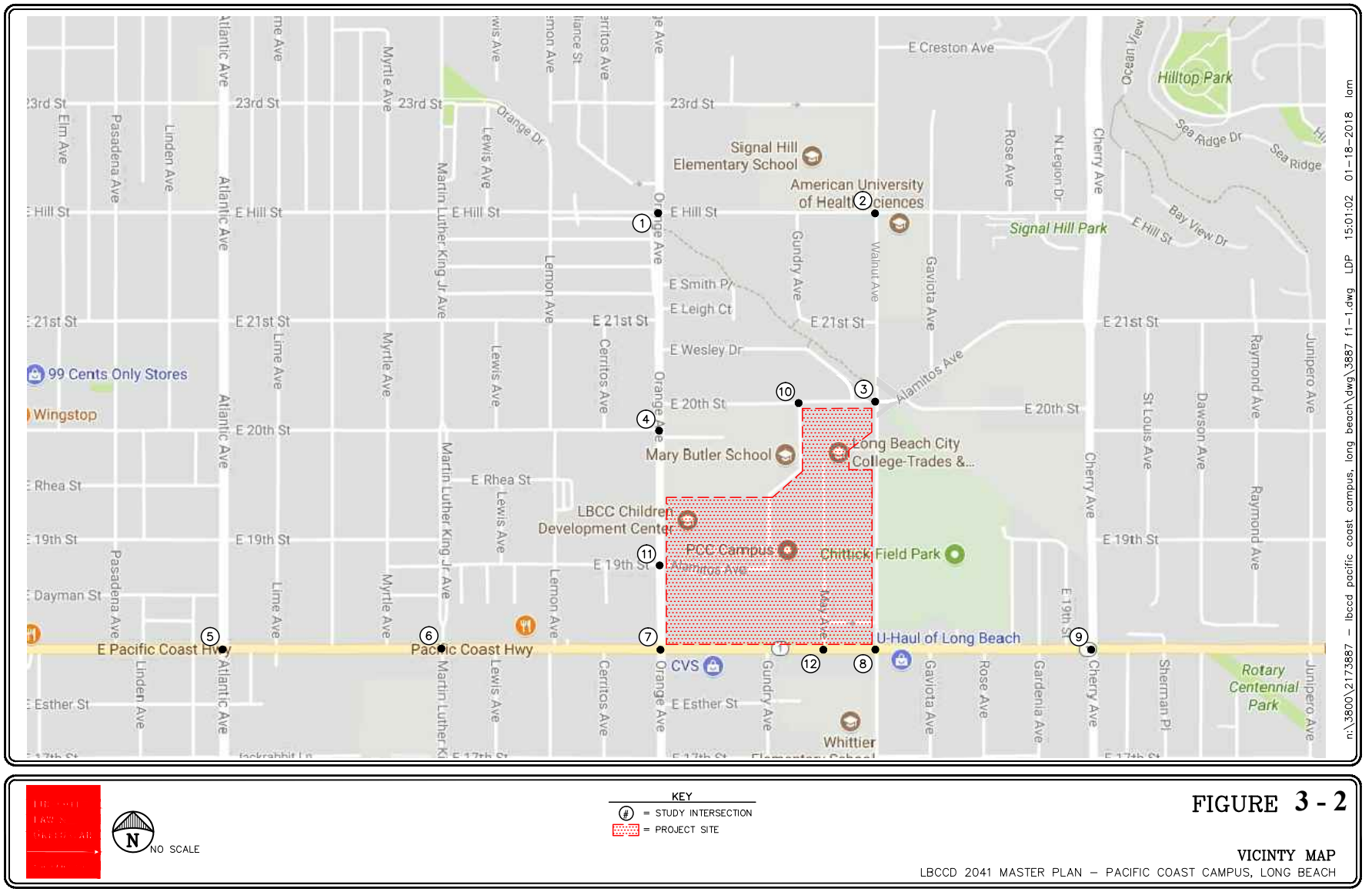
1. Orange Avenue at Hill Street	7. Orange Avenue at Pacific Coast Highway
2. Walnut Avenue at Hill Street	8. Walnut Avenue at Pacific Coast Highway
3. Walnut Avenue at 20th Street/Alamitos Avenue	9. Cherry Avenue at Pacific Coast Highway
4. Orange Avenue at 20th Street	10. Alamitos Avenue at E. 20th Street
5. Atlantic Avenue at Pacific Coast Highway	11. Orange Avenue at 19th Street/Alamitos Avenue
6. Martin Luther King Jr. Avenue at Pacific Coast Highway	12. May Avenue at Pacific Coast Highway

The locations of the study intersections in relation to the Project Site are illustrated on Figure 3-2.

Existing Traffic Volumes

The Volume-Capacity (V/C) and Level of Service (LOS) investigations at these key locations were used to evaluate the potential traffic-related impacts associated with area growth, cumulative projects, and the Proposed Project.

Figure 3-2: Locations of Study Intersections



Twelve key study intersections have been identified as the locations at which to evaluate existing and future traffic operating conditions. Some portion of potential project-related traffic will pass through each of these intersections, and their analysis will reveal the expected relative impacts of the Project. Existing daily, AM peak-hour and PM peak-hour traffic volumes for the locations evaluated in this report were obtained from daily machine and manual peak-hour turning movement counts conducted by Transportation Studies Inc. in October 2017.

Figures 3-3 and 3-4 illustrate the existing AM and PM peak-hour traffic volumes at the key study intersections evaluated in this report, respectively. Appendix D contains the detailed peak-hour count sheets for the key intersections evaluated in this report.

Table 3-25 summarizes the existing peak-hour service level calculations for the 12 key study intersections based on existing traffic volumes and current street geometrics. Review of Table 3-25 indicates that two of the 12 key study intersections currently operate at an unacceptable LOS during the AM and/or PM peak hours. The remaining 10 key study intersections currently operate at acceptable LOS D or better during the AM and/or PM peak hours.

Table 3-25: Existing Peak-Hour Intersection Capacity Analysis Summary

Key Intersection	Time Period	Jurisdiction	Existing Traffic Conditions	
			ICU/HCM	LOS
1. Orange Avenue at Hill Street	AM PM	Signal Hill	27.6 s/v 11.5 s/v	C B
2. Walnut Avenue at Hill Street	AM PM	Signal Hill	13.1 s/v 11.4 s/v	B B
3. Walnut Avenue at 20th Street/Alamitos Avenue	AM PM	Long Beach	0.566 0.514	A A
4. Orange Avenue at 20th Street	AM PM	Long Beach	0.683 0.680	B B
5. Atlantic Avenue at Pacific Coast Highway	AM PM	Long Beach/ Caltrans	0.696 0.706	B C
6. Martin Luther King Jr. Avenue at Pacific Coast Highway	AM PM	Long Beach/ Caltrans	0.593 0.613	A B
7. Orange Avenue at Pacific Coast Highway	AM PM	Long Beach/ Caltrans	0.761 0.742	C C
8. Walnut Avenue at Pacific Coast Highway	AM PM	Long Beach/ Caltrans	0.740 0.653	C B
9. Cherry Avenue at Pacific Coast Highway	AM PM	Long Beach/ Caltrans	0.825 0.740	D C
10. Alamitos Avenue at East 20th Street	AM PM	Long Beach	17.0 s/v 9.7 s/v	C A
11. Orange Avenue at 19th Street/Alamitos Avenue	AM PM	Long Beach	**132.4 s/v** **158.4 s/v**	**F** **F**
12. May Avenue at Pacific Coast Highway	AM PM	Long Beach/ Caltrans	65.9 s/v 27.8 s/v	**F** D

Notes:
s/v = seconds per vehicle
Bold ICU/LOS or **HCM/LOS** values indicate adverse service levels

Under the existing scenario, the data within Table 3-25 indicates that two of the 12 study intersections currently operate at poor LOS values of E or F during weekday peak hours.

- Orange Avenue at 19th Street/Alamitos Avenue – operates at LOS F in both the AM and PM peak hours.

- May Avenue at Pacific Coast Highway – operates at LOS F in the AM peak hours.

The existing (Year 2017) peak-hour traffic volumes at the study intersections are provided on Figure 3-3 (AM peak) and Figure 3-4 (PM peak).

Figure 3-3: Existing AM Peak-Hour Traffic Volumes

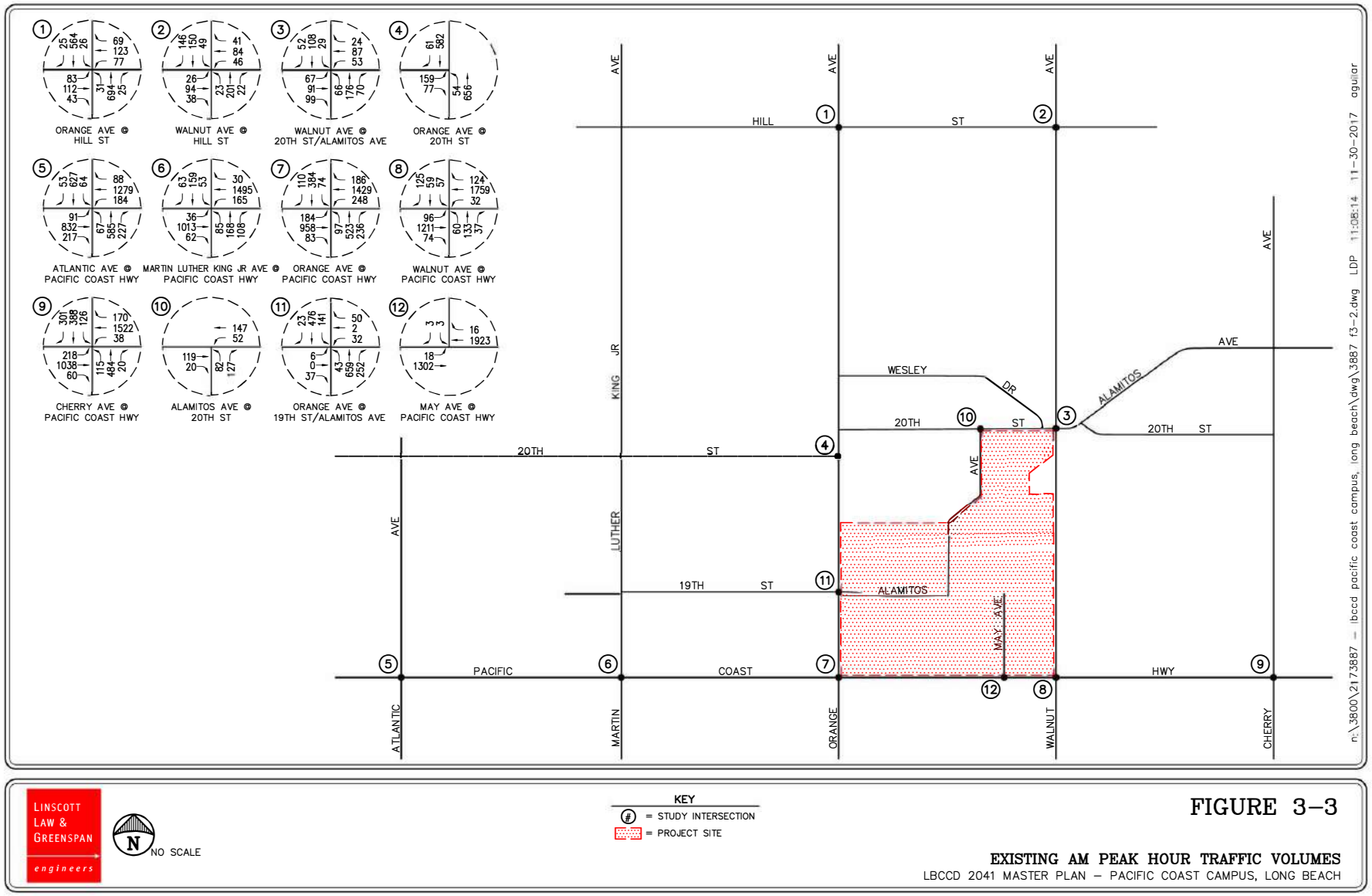
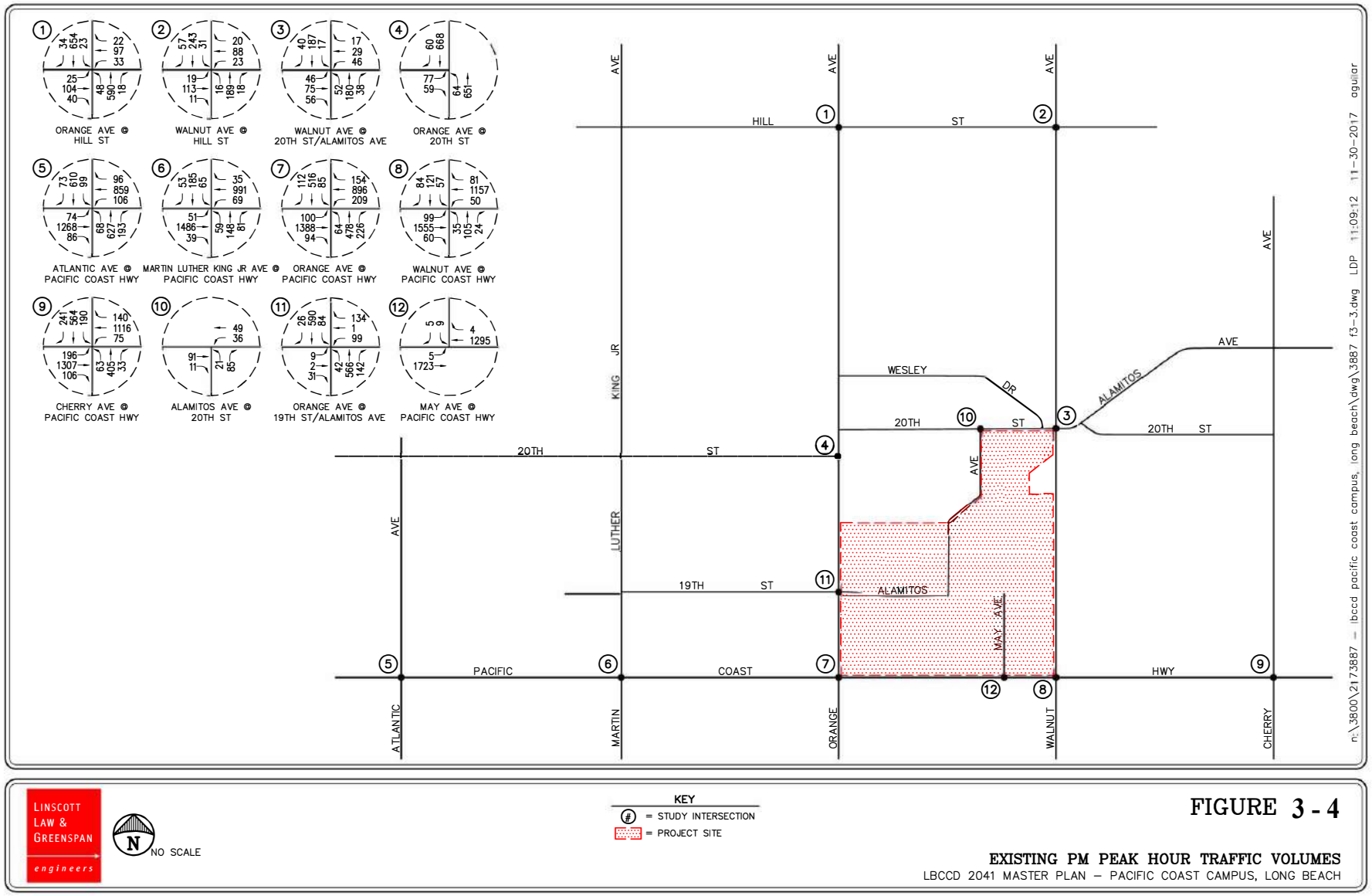


Figure 3-4: Existing PM -Hour Traffic Volumes



Existing Alternative Transit Conditions

Long Beach Transit (LBT) provides public transit services in the vicinity of the Proposed Project. Figure 3-5 graphically illustrates the LBT routes within the project study area, respectively. Figure 3-6 identifies the location of the existing bus stops in proximity to the Project Site.

The City of Long Beach promotes bicycling as a means of mobility and a way in which to improve the quality of life within its community. The Bicycle Master Plan recognizes the needs of bicycle users and aims to create a complete and safe bicycle network throughout the City. The City of Long Beach Bicycle Facilities in the vicinity of the Project Site (existing and proposed) are shown on Figure 3-7.

Figure 3-5: Existing Long Beach Transit

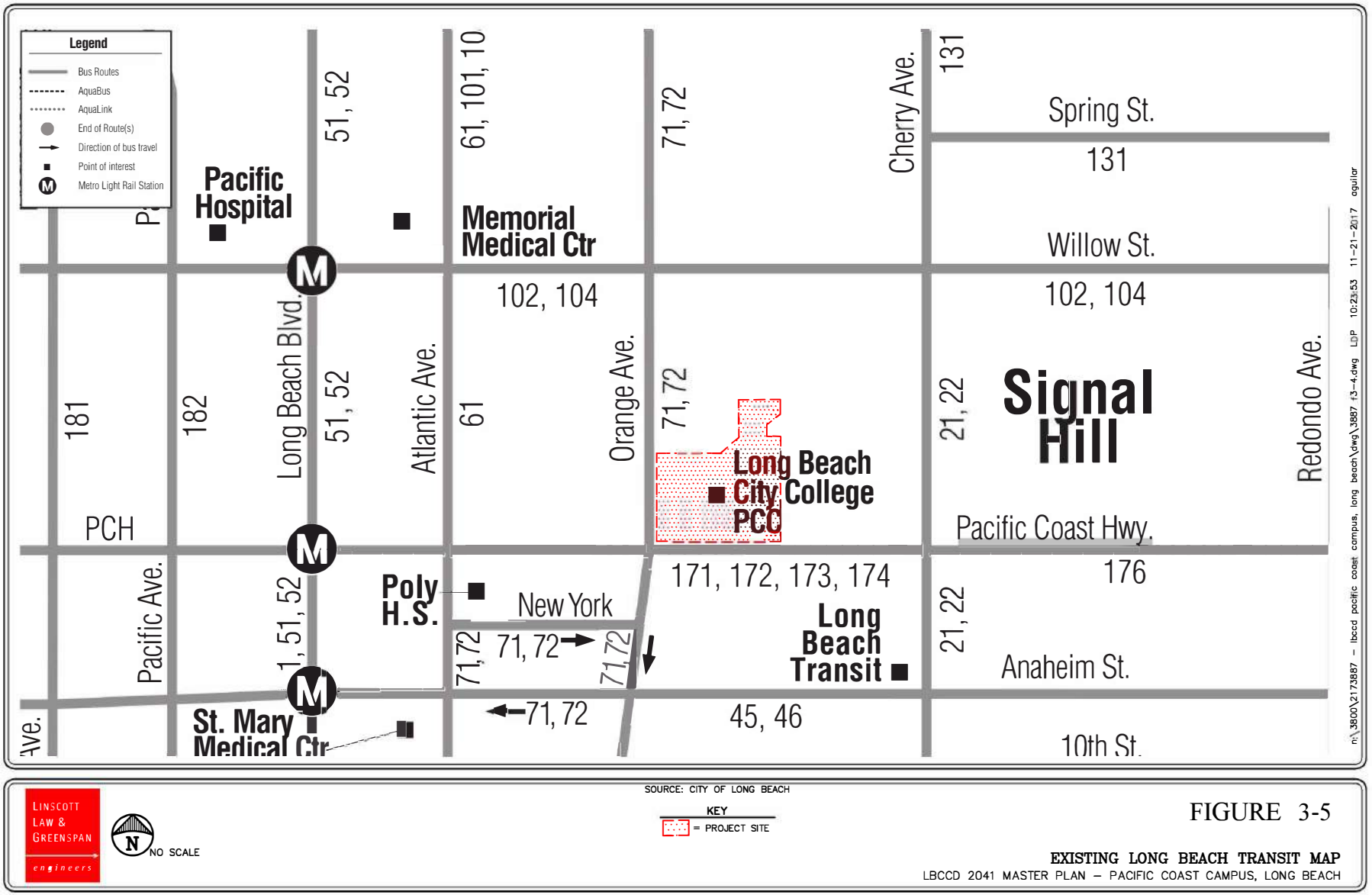


Figure 3-6: Transit Stop Locations

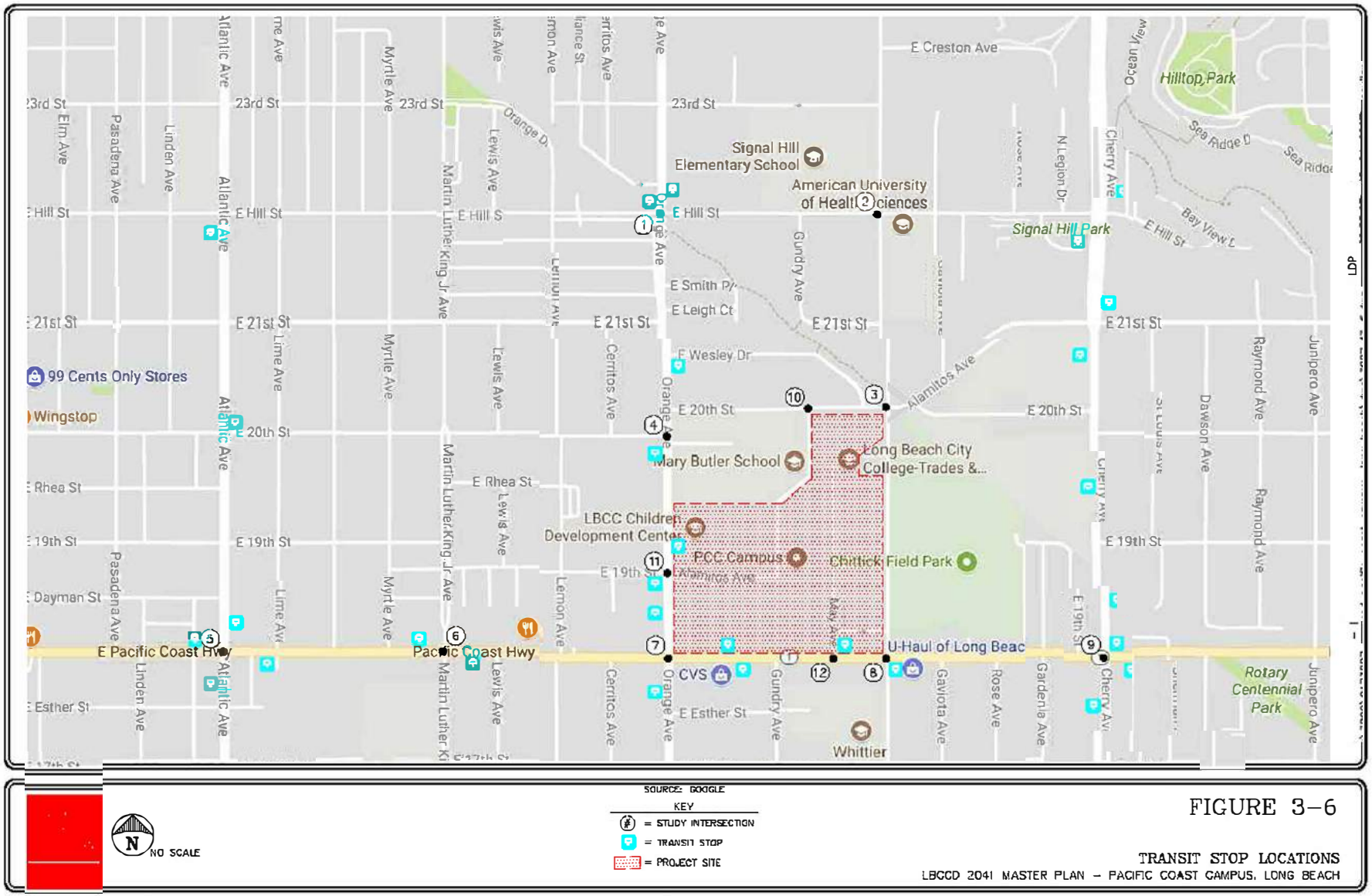
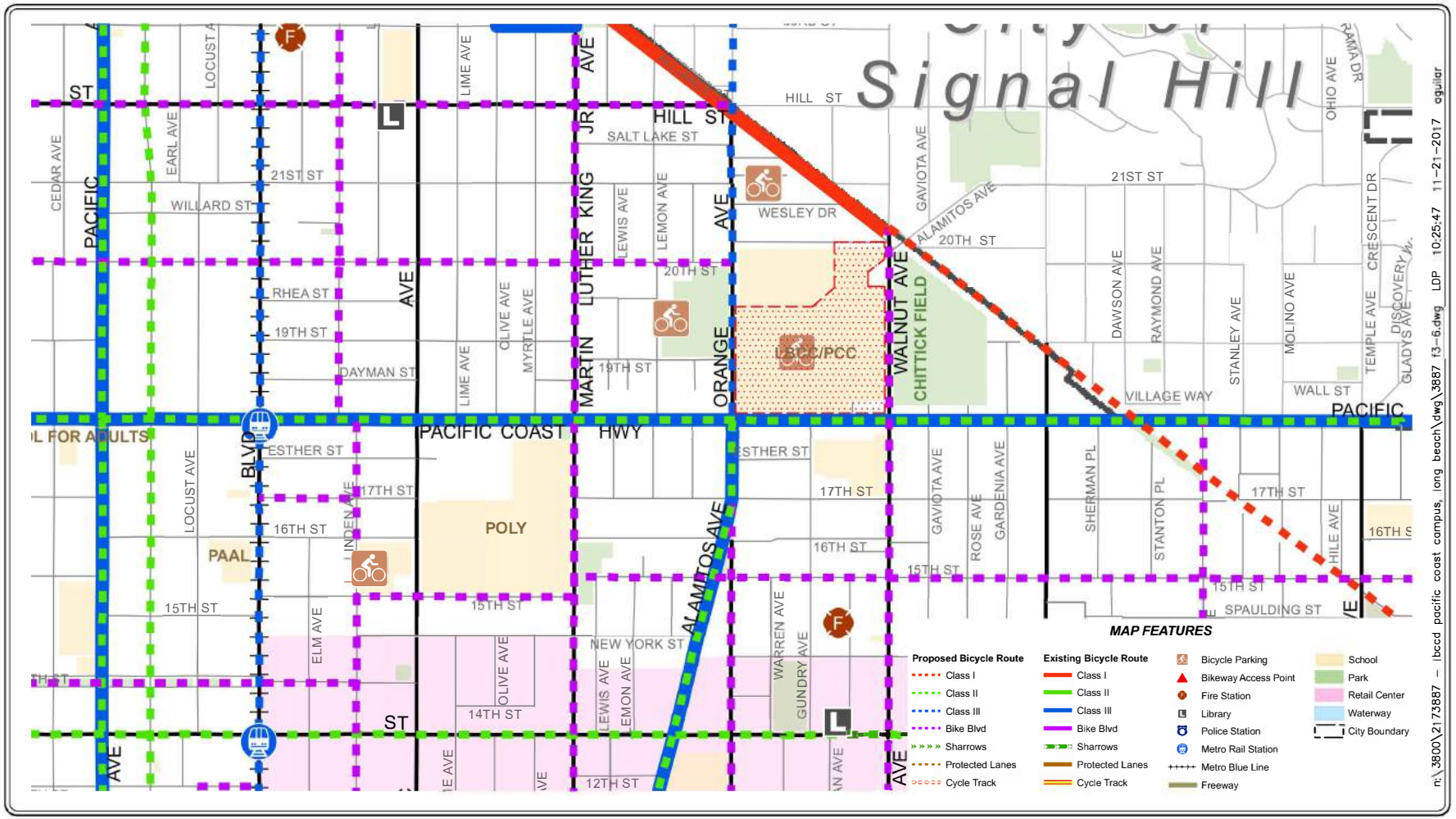


Figure 3-7: Long Beach Bikeway Facilities



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NO SCALE

SOURCE: CITY OF LONG BEACH

KEY
= PROJECT SITE

FIGURE 3-7

LONG BEACH BIKEWAY FACILITIES
LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH

3.7.3 Impacts and Mitigation

Methodology

In order to estimate the traffic impact characteristics of the Proposed Project, a multi-step process has been utilized. The first step is traffic generation, which estimates the total arriving and departing traffic on a peak-hour and daily basis. The second step of the forecasting process is traffic distribution, which identifies the origins and destinations of inbound and outbound project traffic. The third step is traffic assignment, which involves the allocation of project traffic to study area streets and intersections.

With the forecasting process complete and project traffic assignments developed, the impact of the Proposed Project is isolated by comparing operational (LOS) conditions at selected key intersections using expected future traffic volumes with and without forecast project traffic. The need for site-specific and/or cumulative local area traffic improvements can then be evaluated and the significance of the project's impacts identified.

Existing Intersection Conditions

Existing AM and PM peak-hour operating conditions for the key signalized study intersections were evaluated using the *Intersection Capacity Utilization* (ICU) methodology. All unsignalized intersections were evaluated using the *Highway Capacity Manual* (HCM) Operations methodology.

Intersection Capacity Utilization (ICU) Method of Analysis (Signalized Intersections)

In conformance with City of Long Beach, City of Lakewood, and Los Angeles County CMP requirements, existing weekday peak-hour operating conditions for the key signalized study intersections were evaluated using the ICU method. The ICU technique is intended for signalized intersection analysis and estimates the V/C relationship for an intersection based on the individual V/C ratios for key conflicting traffic movements. The ICU numerical value represents the percent signal (green) time and, thus, capacity, required by existing and/or future traffic. It should be noted that the ICU methodology assumes uniform traffic distribution per intersection approach lane and optimal signal timing.

Per City of Long Beach requirements, the ICU calculations use a lane capacity of 1,600 vehicles per hour (vph) for left-turn, through, and right-turn lanes, and dual left turn capacity of 2,880 vph. A clearance adjustment factor of 0.10 was added to each LOS calculation.

The ICU value translates to a LOS estimate, which is a relative measure of the intersection performance. The ICU value is the sum of the critical volume to capacity ratios at an intersection; it is not intended to be indicative of the LOS of each of the individual turning movements.

Highway Capacity Manual (HCM) Method of Analysis (Signalized Intersections)

Based on the HCM operations method of analysis, level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometries, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during ideal conditions: in the absence of

traffic control, in the absence of geometric delay, in the absence of any incidents, and when no other vehicles are on the road.

In the HCM, only the portion of total delay attributed to the control facility is quantified. This delay is called control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle.

Highway Capacity Manual (HCM) Method of Analysis (Unsignalized Intersections)

The HCM unsignalized methodology for stop-controlled intersections was utilized for the analysis of the unsignalized intersections. This methodology estimates the average control delay for each of the subject movements and determines the LOS for each movement. For all-way stop-controlled intersections, the overall average control delay measured in seconds per vehicle, and LOS, is calculated for the entire intersection. For one-way and two-way stop-controlled (minor street stop-controlled) intersections, this methodology estimates the worst side street delay, measured in seconds per vehicle and determines the LOS for that approach. The HCM control delay value translates to a LOS estimate, which is a relative measure of the intersection performance.

Level of Service Criteria

According to the City of Long Beach, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours, or the current LOS if the existing LOS is worse than LOS D (i.e., LOS E of F). For the study intersections in the City of Signal Hill, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours.

Project Traffic Distribution

Project traffic volumes both entering and exiting the Project Site have been distributed and assigned to the adjacent street system based on the following considerations:

- the site's proximity to major traffic carriers (i.e., Pacific Coast Highway, etc.)
- expected localized traffic flow patterns based on adjacent street channelization and presence of traffic signals
- location of additional parking spaces (i.e., new parking structure at the northwest corner of the intersection of Walnut Avenue/Pacific Coast Highway)
- ingress/egress availability at the Project Site

The traffic generation forecast is presented in Table 3-26, below.

Table 3-26: Project Trip Generation

ITE Land Use Code / Project Description	Weekday						
	Daily 2-way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Generation Factors							
540: Junior/Community College (TE/Student)	1.15	81%	19%	0.11	56%	44%	0.11
Generation Forecasts							
LBCCD – Pacific Coast Campus (Net Increase 3,279 Students)	3,771	292	69	361	202	159	361

Notes: ITE = Institute of Transportation Engineers; TE = Trip ends per student

Existing Plus Project Traffic Conditions

The existing plus project traffic conditions have been generated based upon existing conditions and the estimated project traffic. These forecast traffic conditions have been prepared pursuant to the *CEQA Guidelines*, which require that the potential impacts of a project be evaluated upon the circulation system as it currently exists. This traffic volume scenario and the related intersection capacity analyses will identify the roadway improvements necessary to mitigate the direct traffic impacts of the Project, if any.

Figures 3-8 and 3-9 present projected AM and PM peak-hour traffic volumes at the 21 key study locations with the addition of the trips generated by the Proposed Project to existing traffic volumes, respectively.

Figure 3-8: AM Peak-Hour Project Traffic Volumes

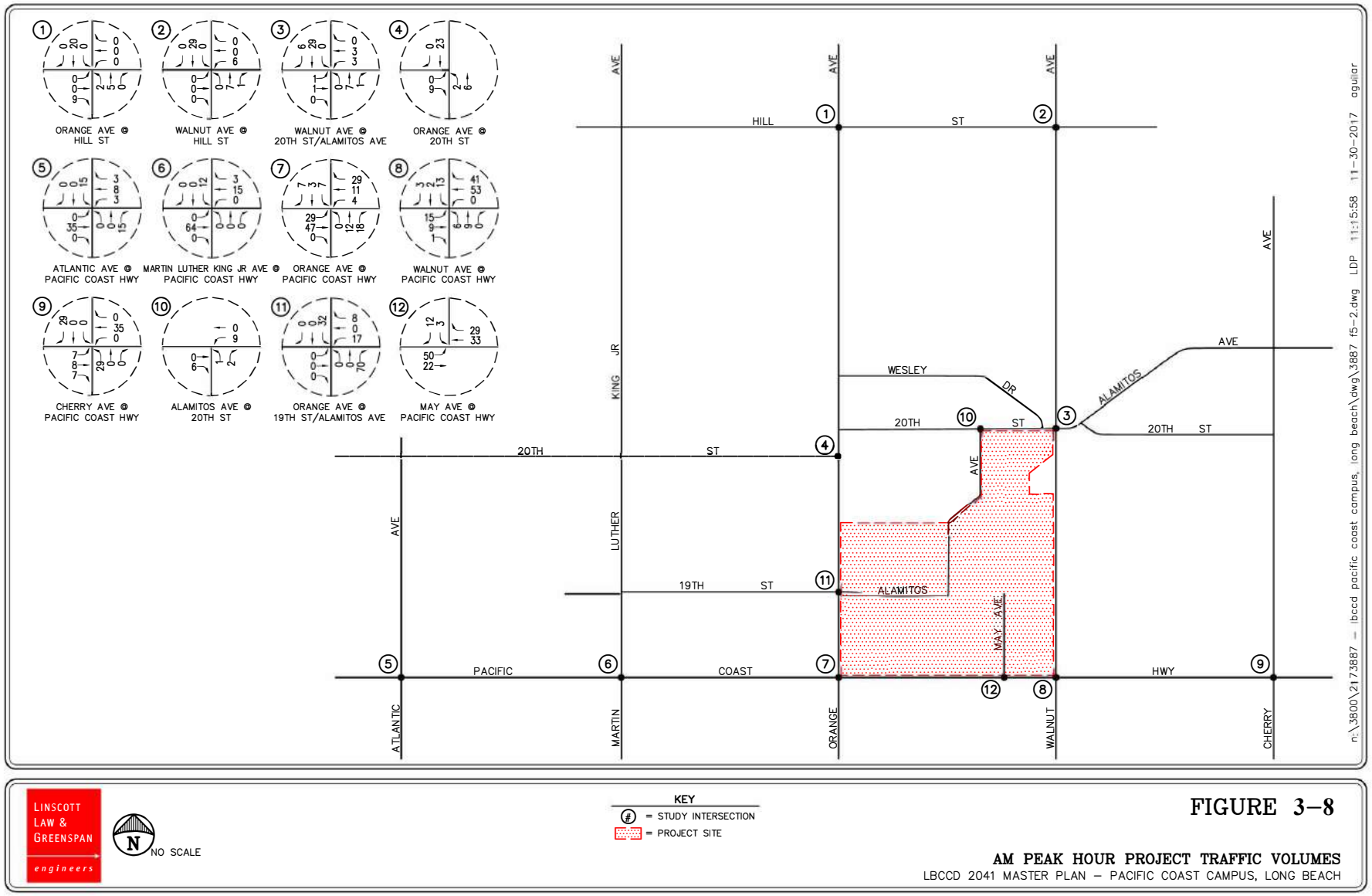


Figure 3-9: PM Peak-Hour Project Traffic Volumes

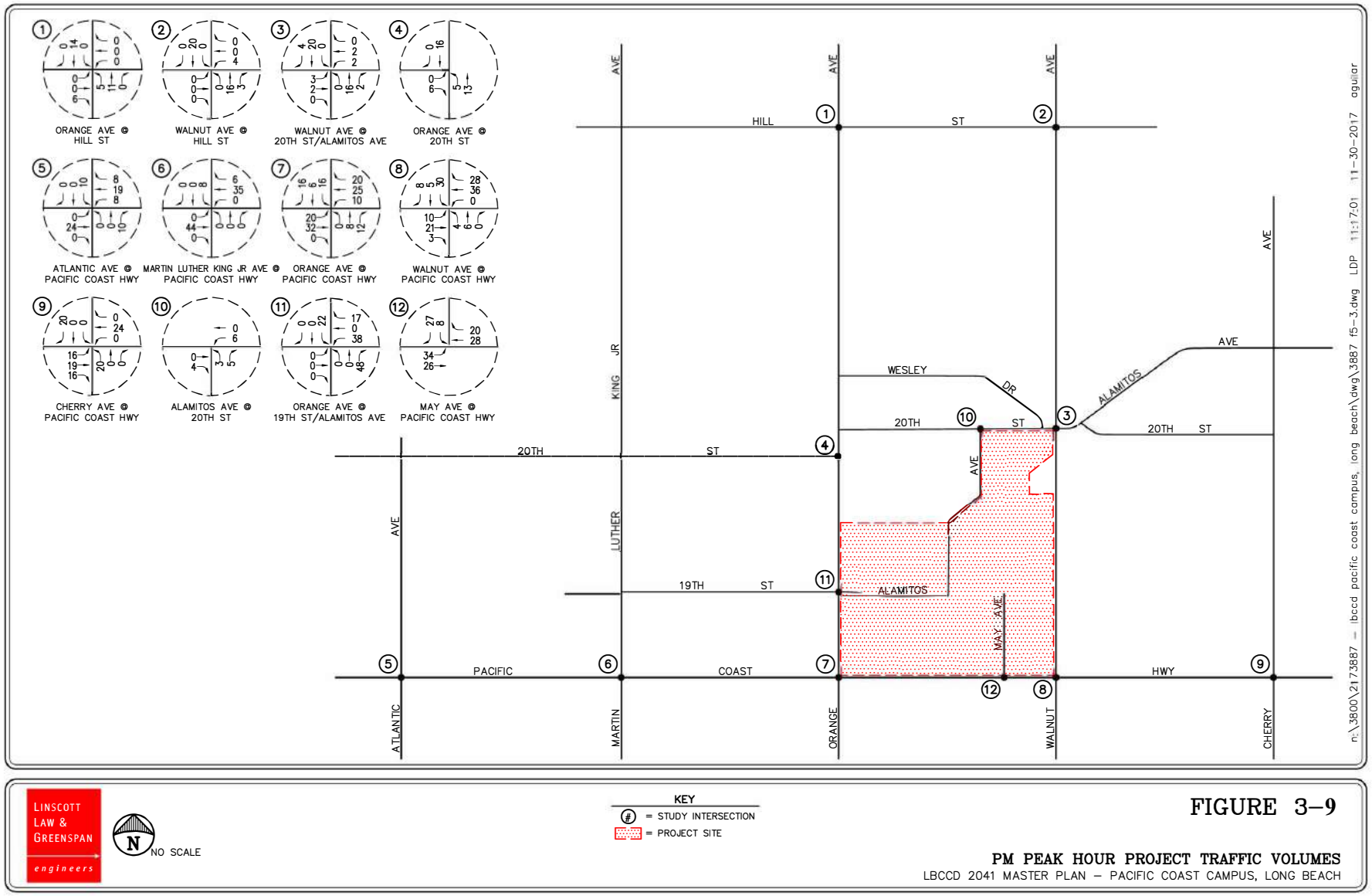


FIGURE 3–9

PM PEAK HOUR PROJECT TRAFFIC VOLUMES
LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH

Future Traffic Conditions

Ambient Traffic Growth

Horizon year, background traffic growth estimates have been calculated using an ambient traffic growth factor. The ambient traffic growth factor is intended to include unknown and future cumulative projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area. The future growth in traffic volumes has been calculated at 0.708 percent per year. Applied to the Year 2017 existing traffic volumes, this factor results in a 16.992 percent growth in existing volumes to the planning horizon Year 2041. Please note that the recommended ambient growth factor is consistent with the background traffic growth estimates contained in the most current *Congestion Management Program for Los Angeles County* (1992).

Cumulative Traffic Characteristics

In order to make a realistic estimate of future on-street conditions prior to implementation of the Proposed Project, the status of other known development projects (cumulative projects) has been researched at the Cities of Long Beach and Signal Hill. With this information, the potential impact of the Proposed Project can be evaluated within the context of the cumulative impact of all ongoing development. Based on research conducted for the Traffic Impact Analysis, 30 cumulative projects are located in the City of Long Beach and seven cumulative projects are located in the City of Signal Hill that have either been built but are not yet fully occupied, or are being processed for approval. These 37 cumulative projects have been included as part of the cumulative background setting.

Year 2041 Cumulative Traffic Volumes

Figures 3-12 and 3-13 present the Year 2041 AM and PM peak-hour cumulative traffic volumes at the key study intersections, respectively. Please note that the cumulative traffic volumes represent the accumulation of existing traffic, ambient growth traffic, and cumulative projects traffic.

Figures 3-14 and 3-15 illustrate the Year 2041 forecast AM and PM peak-hour traffic volumes, with the inclusion of the trips generated by the Proposed Project, respectively.

Traffic Impact Analysis Methodology

The relative impacts of the Proposed Project during the AM peak hour and PM peak hour were evaluated based on analysis of future operating conditions at the 12 key study intersections, without, then with, the Proposed Project. The previously discussed capacity analysis procedures were utilized to investigate the future V/C relationships and service level characteristics at each study intersection. The significance of the potential impacts of the Project at each key intersection was then evaluated using the following traffic impact criteria.

Figure 3-10: Existing Plus Project AM Peak-Hour Traffic Volumes

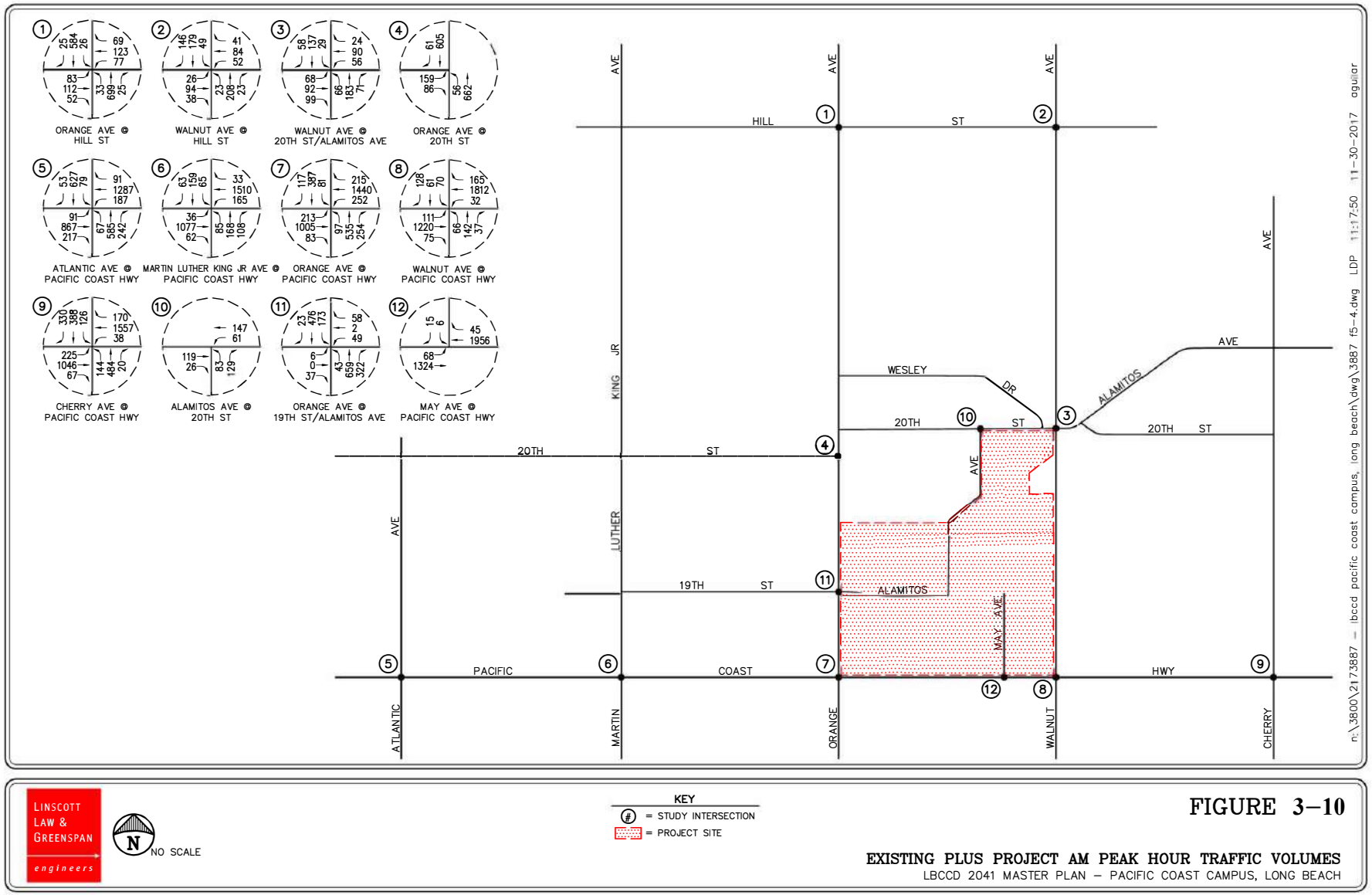


FIGURE 3–10

EXISTING PLUS PROJECT AM PEAK HOUR TRAFFIC VOLUMES
LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH

Figure 3-11: Existing Plus Project PM Peak-Hour Traffic Volumes

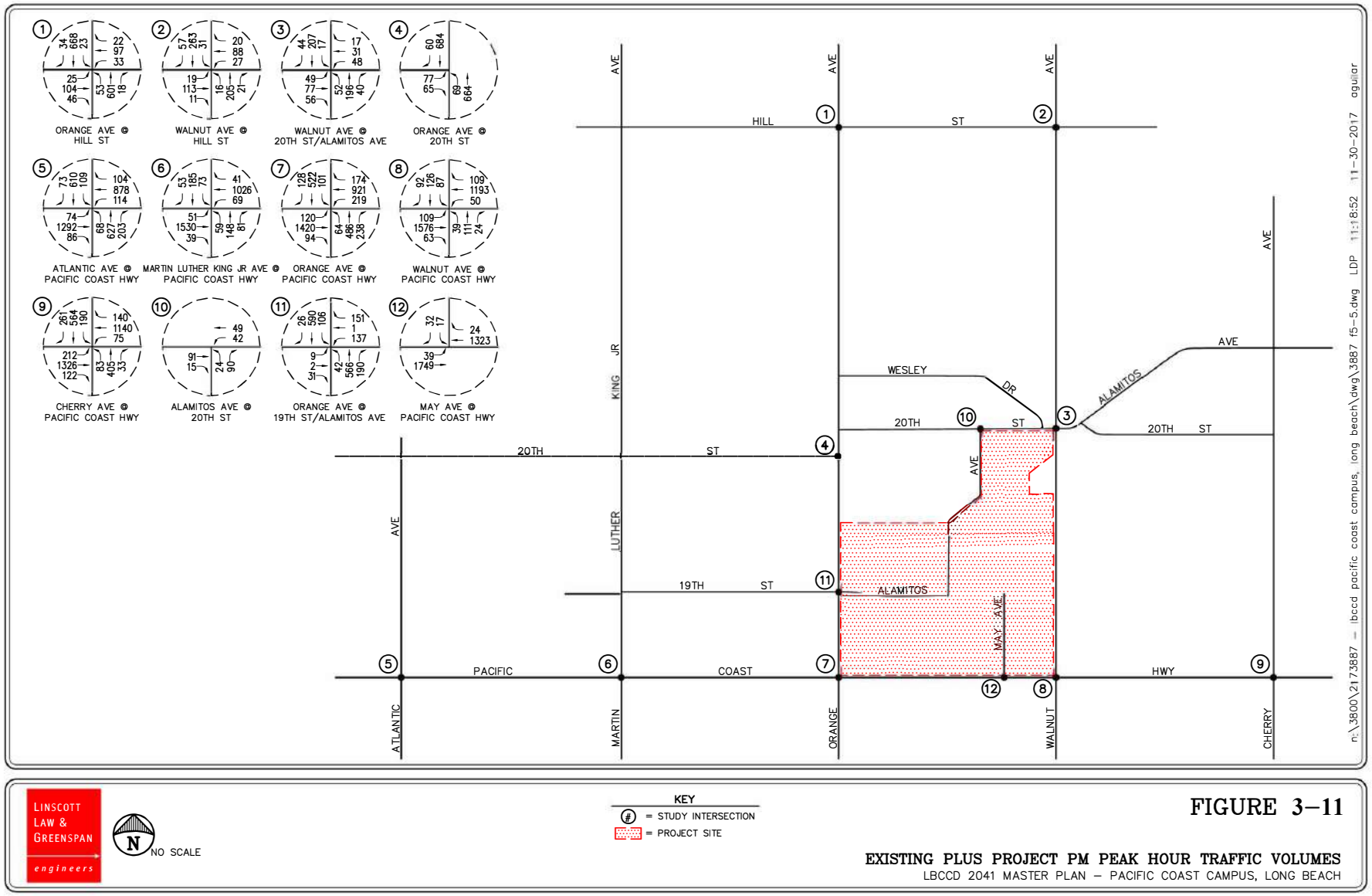
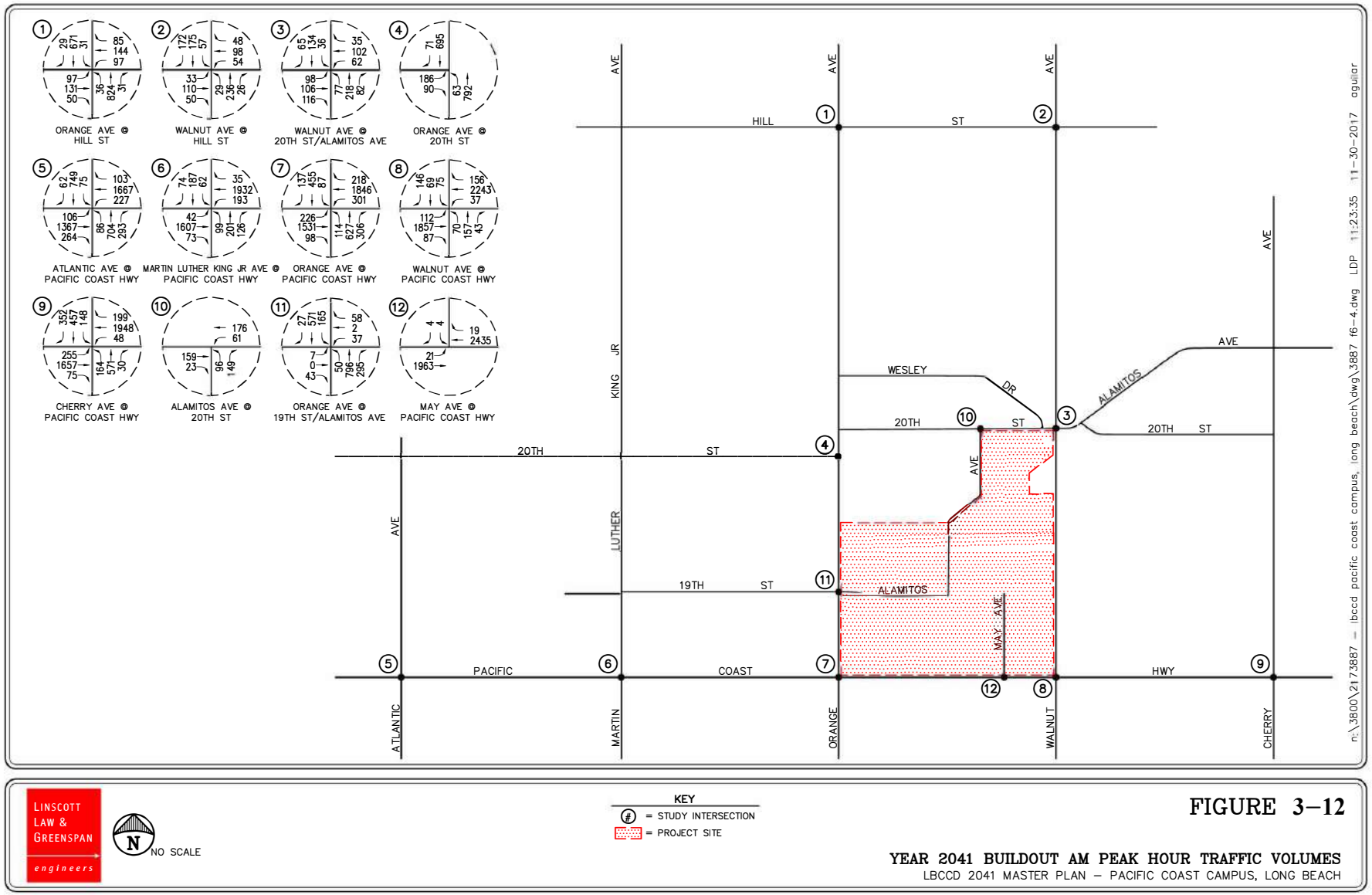


FIGURE 3–11

EXISTING PLUS PROJECT PM PEAK HOUR TRAFFIC VOLUMES
LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH

Figure 3-12: Year 2041 Buildout AM Peak-Hour Traffic Volumes



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N NO SCALE

KEY
(#) = STUDY INTERSECTION
= PROJECT SITE

FIGURE 3–12

YEAR 2041 BUILDOUT AM PEAK HOUR TRAFFIC VOLUMES
LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH

Figure 3-13: Year 2041 Buildout PM Peak-Hour Traffic Volumes

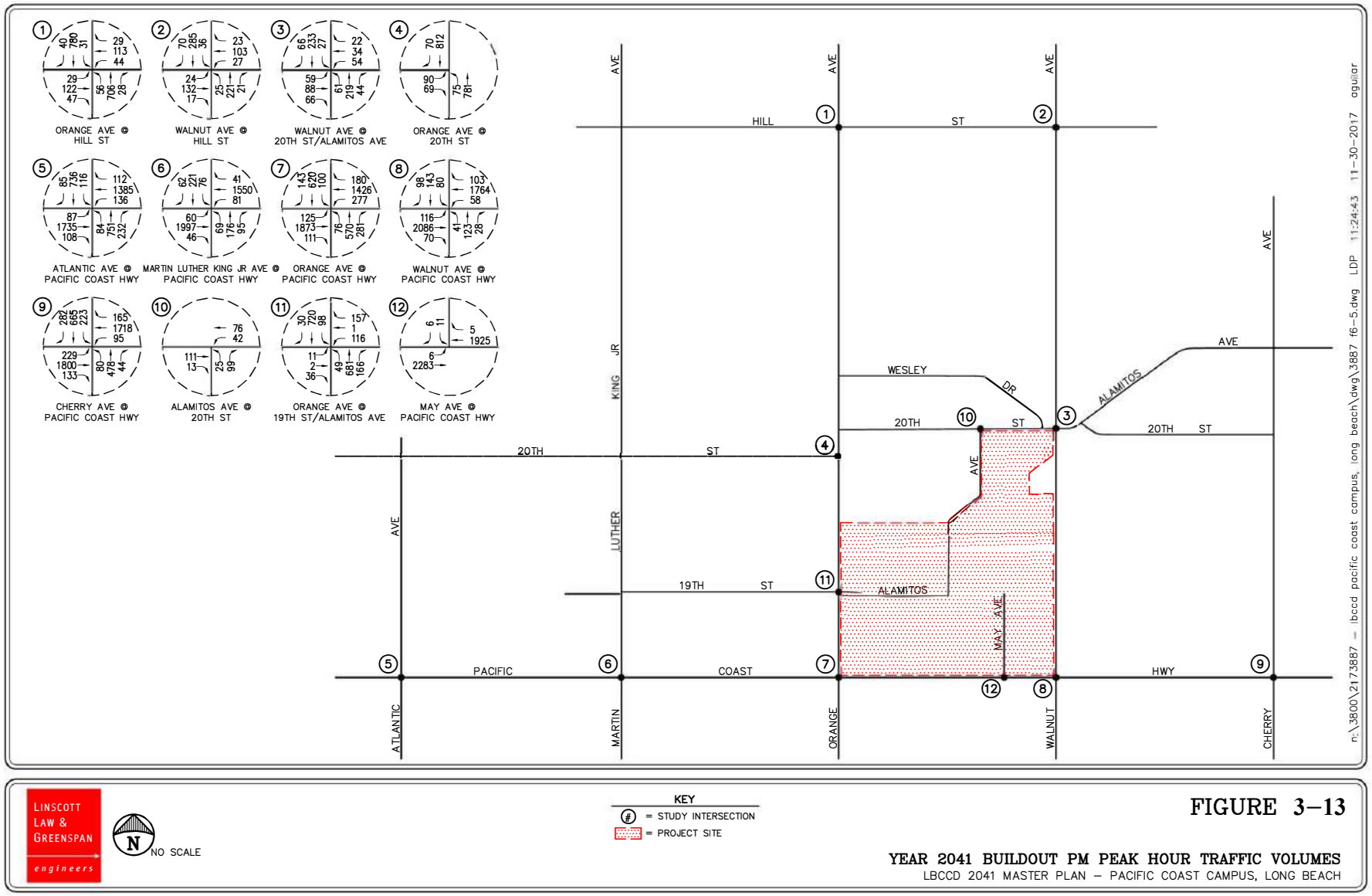
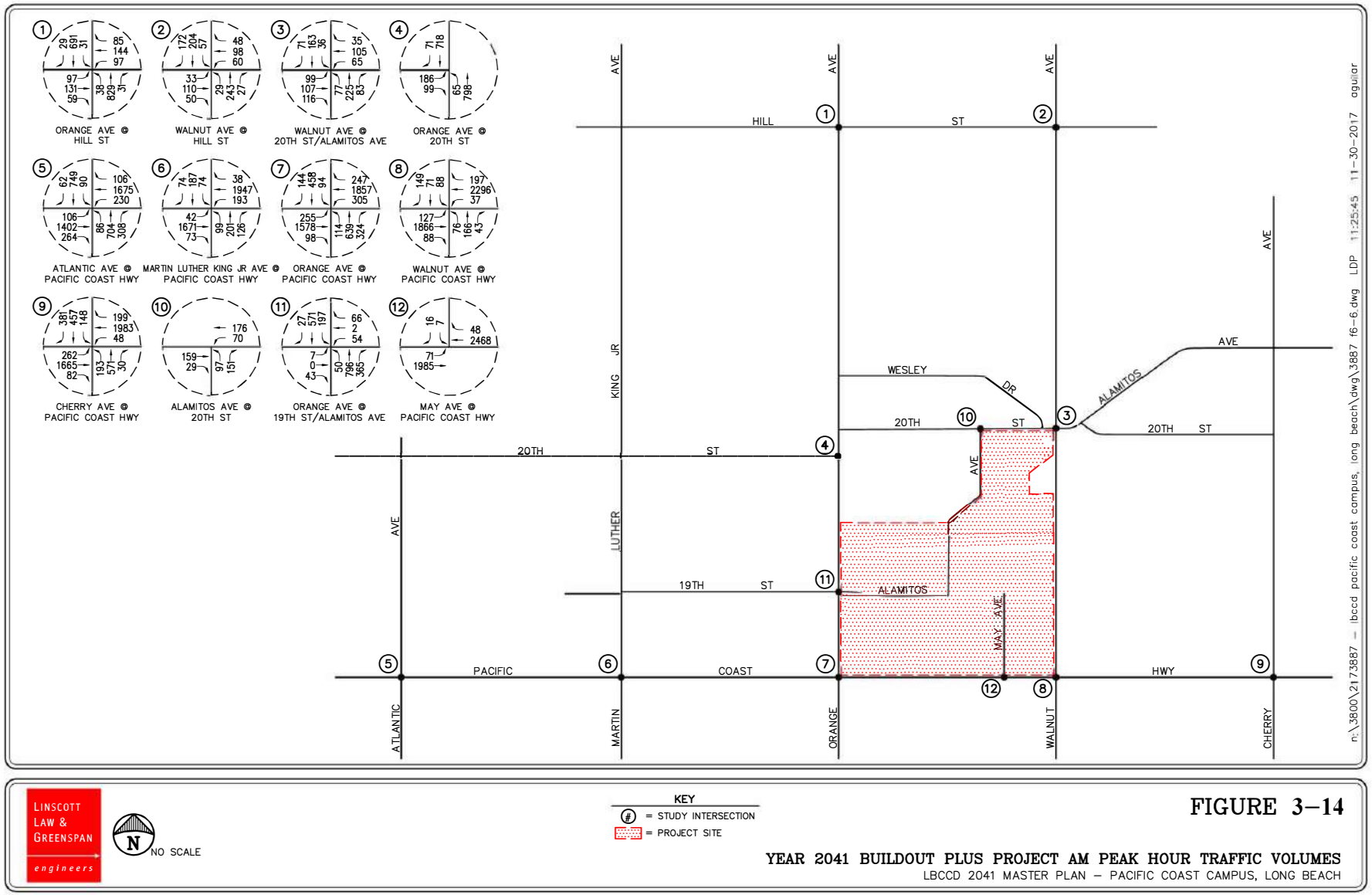


FIGURE 3–13

YEAR 2041 BUILDOUT PM PEAK HOUR TRAFFIC VOLUMES
LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH

Figure 3-14: Year 2041 Buildout Plus Project AM Peak-Hour Traffic Volumes



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N NO SCALE

KEY
(#) = STUDY INTERSECTION
= PROJECT SITE

FIGURE 3–14

YEAR 2041 BUILDOUT PLUS PROJECT AM PEAK HOUR TRAFFIC VOLUMES
LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH

Figure 3-15: Year 2041 Buildout Plus Project PM Peak-Hour Traffic Volumes

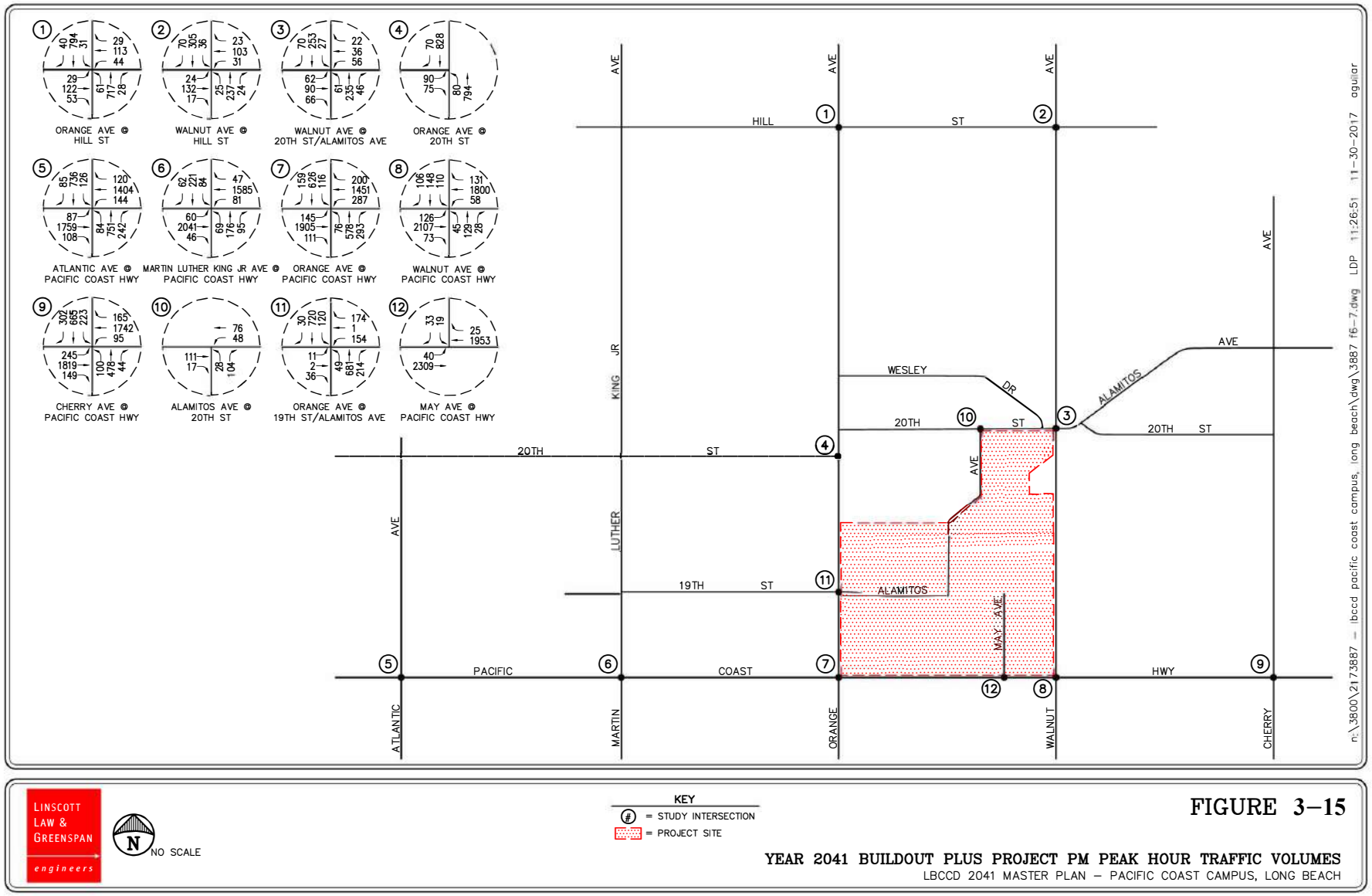

FIGURE 3–15

YEAR 2041 BUILDOUT PLUS PROJECT PM PEAK HOUR TRAFFIC VOLUMES
LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH

Impact Criteria and Thresholds

Impacts to City of Long Beach intersections (i.e., all 12 key study intersections except #1 and #2) are considered significant if:

- An unacceptable peak-hour LOS (i.e., LOS E or F) at any of the key intersections is projected. The City of Long Beach considers LOS D (ICU = 0.801 – 0.900) to be the minimum acceptable LOS for all intersections. For the City of Long Beach, the current LOS, if worse than LOS D (i.e., LOS E or F), should also be maintained; and

- The project increases traffic demand at the study intersection by 2 percent of capacity (ICU increase 0.020), causing or worsening LOS E or F (ICU > 0.901).

- At unsignalized intersections, an impact is considered to be significant if the project causes an intersection operating at LOS D or better to degrade to LOS E or F, and the traffic signal warrant analysis determines that a traffic signal is justified.

Impacts to City of Signal Hill intersections (i.e., key study intersections #1 and #2) are considered significant if:

- An unacceptable peak-hour LOS (i.e., LOS E or F) at any of the key intersections is projected. The City of Lakewood considers LOS D (ICU = 0.801 – 0.900) to be the minimum acceptable LOS for all intersections

Traffic Impact Analysis Scenarios

The following scenarios are those for which volume/capacity calculations have been performed at the 21 key study intersections for existing plus project and Year 2041 traffic conditions:

A. Existing Traffic Conditions

B. Existing Plus Project Traffic Conditions

C. Scenario (B) with Improvements, if necessary

D. Year 2041 Cumulative Traffic Conditions

E. Year 2041 Cumulative Plus Project Traffic Conditions

F. Scenario (E) with Improvements, if necessary

Project Impacts

Impact 3.7-1: Conflict with a plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle lanes, and pedestrian paths.

Overview of Senate Bill 743

On September 27, 2013, Governor Brown signed Senate Bill (SB) 743 (Steinberg, 2013). Among other things, SB 743 creates a process to change the methodology to analyze transportation impacts under CEQA (Public Resources Code section 21000 and following), which could include analysis based on project vehicle miles traveled (VMT) rather than impacts to intersection Level of Service. On December 30, 2013, the State of California Governor's Office of Planning and Research (OPR) released a preliminary evaluation of alternative methods of transportation analysis. The intent of the original guidance documentation was geared first towards projects located within areas that are designated as transit priority areas, to be followed by other areas of the State. OPR issued other draft discussion documents in March 2015 and January 2016, suggesting some new revisions to the state CEQA Guidelines. In November 2017, OPR submitted the proposed amendments to the CEQA Guidelines to the State's Natural Resources Agency (that include a proposed new Guidelines section 15064.3 which governs how VMT-based analyses of potential traffic impacts should be conducted). On January 26, 2018, the Natural Resource Agency published a Notice of Rulemaking, commencing the formal rulemaking process for the amendments to the CEQA Guidelines. Over the coming months, the Natural Resources Agency will conduct a formal administrative rulemaking process on the CEQA Guidelines. That rulemaking process will entail additional public review and may lead to further revisions. OPR then will update a technical advisory that accompanies the revised CEQA Guidelines. OPR has therefore not issued any final revisions to the state CEQA Guidelines to implement the CEQA traffic analysis component of SB 743; thus, the analysis in this study utilizes existing, long-established protocols in accordance with CEQA, the existing state CEQA Guidelines, and the City's CEQA Thresholds Guide. (See Public Resources Code section 21099(b).) However, to address the intent of the legislation and the guidance received from the State, the following analysis was conducted using the best available methodologies.

Because the Project is considered a "land use project", its consistency with CEQA Guidelines section 15064.3, subdivision (b)(1) should be evaluated. Section 15064.3 is a new section of the CEQA Guidelines proposed by OPR and the Natural Resource Agency within the draft updates. At the time of publication, this represents the best available guidelines and has been analyzed as such. Section 15064.3, subdivision (b)(1) reads as follows:

(b) Criteria for Analyzing Transportation Impacts.

(1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact.

Not only is the Project located along an existing transit corridor and served by several transit stops, but the implementation of the 2041 Facilities Master Plan for this campus will accommodate forecasted growth in school enrollment, allowing local students attendance at this campus and reducing the need to travel further to attend community college. This will decrease vehicle miles traveled as compared to existing conditions and therefore the project is considered to have a less than significant impact to this aspect of transportation, under the proposed CEQA Guidelines updates.

Existing Plus Project Analysis and Traffic Conditions

Table 3-27 summarizes the peak-hour LOS results at the 12 key study intersections for existing plus project traffic conditions. The first column of ICU/LOS values and HCM/LOS values in Table 3-27 presents a summary of existing AM and PM peak-hour traffic conditions (which were also presented in Table 3-25). The second column lists existing plus project traffic conditions. The third column shows the increase in ICU value and/or HCM value due to the added peak-hour project trips and indicates whether the traffic associated with the Project will have a significant impact based on the LOS standards and significant impact criteria defined in this report. The fourth column indicates the anticipated level of service with recommended improvements, discussed later in this report.

Review of columns 2 and 3 of Table 3-27 indicates that traffic associated with the Proposed Project, when added to only existing traffic volumes, will significantly impact one of the 12 key study intersections when compared to the LOS standards and significant impact criteria specified in this report. Although the intersection of May Avenue/Pacific Coast Highway is forecast to operate at unacceptable LOS F during the AM peak hour, this unsignalized intersection is not impacted per the significant impact criteria specified in this report; signalization of the intersection could provide a means for reducing the indicated delay, but the peak-hour traffic signal warrant is not satisfied. The remaining 10 key study intersections currently operate and are forecast to continue to operate at an acceptable LOS during the AM and PM peak hours with the addition of project-generated traffic to existing traffic. The intersection operating at an adverse LOS under existing plus project traffic conditions is Orange Avenue at 19th Street/Alamitos Avenue.

As shown in column 4, the implementation of improvements (discussed later in this report) at the one impacted key study intersection completely offsets the impact of project traffic, and the key study intersection is forecast to operate at an acceptable LOS during the AM and PM peak hours.

Table 3-27: Existing Plus Project Peak-Hour Intersection Capacity Analysis Summary

Key Intersection	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Significant Impact		(4) Existing Plus Project Traffic Conditions with Improvements	
		ICU/HCM	LOS	ICU/HCM	LOS	Increase	Yes/No	ICU/HCM	LOS
1. Orange Avenue at Hill Street	AM	27.6 s/v	C	27.8 s/v	C	0.2 s/v	No	--	--
	PM	11.5 s/v	B	11.6 s/v	B	0.1 s/v	No	--	--
2. Walnut Avenue at Hill Street	AM	13.1 s/v	B	14.1 s/v	B	1.0 s/v	No	--	--
	PM	11.4 s/v	B	12.0 s/v	B	0.6 s/v	No	--	--
3. Walnut Avenue at 20th Street/ Alamitos Avenue	AM	0.566	A	0.574	A	0.008	No	--	--
	PM	0.514	A	0.533	A	0.019	No	--	--
4. Orange Avenue at 20th Street	AM	0.683	B	0.704	C	0.021	No	--	--
	PM	0.680	B	0.697	B	0.017	No	--	--
5. Atlantic Avenue at Pacific Coast Highway	AM	0.696	B	0.698	B	0.002	No	--	--
	PM	0.706	C	0.722	C	0.016	No	--	--
6. Martin Luther King Jr. Avenue at Pacific Coast Highway	AM	0.593	A	0.596	A	0.003	No	--	--
	PM	0.613	B	0.623	B	0.010	No	--	--
7. Orange Avenue at Pacific Coast Highway	AM	0.761	C	0.796	C	0.035	No	--	--
	PM	0.742	C	0.767	C	0.025	No	--	--
8. Walnut Avenue at Pacific Coast Highway	AM	0.740	C	0.784	C	0.044	No	--	--
	PM	0.653	B	0.688	B	0.035	No	--	--
9. Cherry Avenue at Pacific Coast Highway	AM	0.825	D	0.837	D	0.012	No	--	--
	PM	0.740	C	0.755	C	0.015	No	--	--
10. Alamitos Avenue at East 20th Street	AM	17.0 s/v	C	18.2 s/v	C	1.2 s/v	No	--	--
	PM	9.7 s/v	A	9.8 s/v	A	0.1 s/v	No	--	--
11. Orange Avenue at 19th Street/Alamitos Avenue	AM	**132.4 s/v**	**F**	**359.1 s/v**	**F**	226.7 s/v	No [a]	0.897	D
	PM	**158.4 s/v**	**F**	**356.4 s/v**	**F**	**198.0 s/v**	**Yes**	0.751	C
12. May Avenue at Pacific Coast Highway	AM	**65.9 s/v**	**F**	**187.7 s/v**	**F**	121.8 s/v	No [a]	--	--
	PM	27.8 s/v	D	30.7 s/v	D	2.9 s/v	No	--	--

Notes:
s/v = seconds per vehicle
Bold ICU/LOS or **HCM/LOS** values indicate adverse service levels
[a] = The peak-hour traffic signal warrant is not satisfied for this location, therefore, no significant impact per the criteria is mentioned in this report.

Year 2041 Traffic Conditions

Table 3-28 summarizes the peak-hour LOS results at the 12 key study intersections for the Year 2041 horizon year. The first column of ICU/LOS and HCM/LOS values in Table 3-28 presents a summary of existing AM and PM peak-hour traffic conditions (which were also presented in Table 3-25). The second column lists projected Year 2041 traffic conditions (existing plus ambient plus cumulative projects traffic) based on existing intersection geometry, but without any traffic generated from the Proposed Project. The third column presents forecast Year 2041 traffic conditions with the addition of project traffic. The fourth column shows the increase in ICU value and/or HCM value due to the added peak-hour project trips and indicates whether the traffic associated with the Project will have a significant impact based on the LOS standards and significant impact criteria defined in this report. The fifth column indicates the anticipated level of service with recommended improvements, discussed later in this report.

Year 2041 Buildout Traffic Conditions (without Project)

An analysis of future (Year 2041) cumulative traffic conditions indicates that the addition of ambient traffic growth and cumulative projects traffic will adversely impact four of the 12 key study intersections. The remaining eight key study intersections are forecast to continue to operate at acceptable LOS during the AM and PM peak hours with the addition of ambient traffic growth and cumulative projects traffic.

Year 2041 Buildout Plus Project Conditions

Review of Columns 3 and 4 of Table 3-5 indicates that the added traffic associated with the Proposed Project will significantly impact three of the 12 key study intersections when compared to the LOS standards and significant impact criteria specified in this report. Although the intersection of Cherry Avenue/Pacific Coast Highway is forecast to operate at unacceptable LOS E during the AM and PM peak hours with the addition of project traffic, the Proposed Project is expected to add less than 0.020 to the ICU value, which results in a less than significant impact. Further, although the intersection of May Avenue/Pacific Coast Highway is forecast to operate at unacceptable LOS F during the AM and PM peak hours, this unsignalized intersection is not impacted per the significant impact criteria specified in this report; signalization of the intersection could provide a means for reducing the indicated delay, but the peak-hour traffic signal warrant is not satisfied. The remaining seven key study intersections are forecast to continue to operate at an acceptable LOS with the addition of project-generated traffic in the Year 2041.

As shown in column 5, the implementation of improvements (discussed later in this report) at the impacted key study intersection of Orange Avenue/19th Street-Alamitos Avenue completely offsets the impact of project traffic, and the key study intersection is forecast to operate at an acceptable LOS during the AM and PM peak hours. For the remaining two impacted key study intersections of Orange Avenue/Pacific Coast Highway and Walnut Avenue/Pacific Coast Highway, additional capacity-enhancing improvements at these two key study intersections do not appear feasible due to physical and right-of-way restrictions that prohibit any additional widening and/or restriping. Therefore, the impacts at these two locations will remain significant.

Table 3-28: Year 2041 Plus Project Peak-Hour Intersection Capacity Analysis Summary

Key Intersection	Time Period	(1) Existing Traffic Conditions		(2) Year 2041 Buildout Traffic Conditions		(3) Year 2041 Buildout Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2041 Buildout Plus Project Traffic Conditions with Improvements	
		ICU/HCM	LOS	ICU/HCM	LOS	ICU/HCM	LOS	Increase	Yes/No	ICU/HCM	LOS
1. Orange Avenue at Hill Street	AM	27.6 s/v	C	30.8 s/v	C	31.2 s/v	C	0.4 s/v	No	--	--
	PM	11.5 s/v	B	13.6 s/v	B	13.8 s/v	B	0.2 s/v	No	--	--
2. Walnut Avenue at Hill Street	AM	13.1 s/v	B	13.6 s/v	B	14.4 s/v	B	0.8 s/v	No	--	--
	PM	11.4 s/v	B	13.6 s/v	B	14.6 s/v	B	1.0 s/v	No	--	--
3. Walnut Avenue at 20th Street/Alamitos Avenue	AM	0.566	A	0.649	B	0.657	B	0.008	No	--	--
	PM	0.514	A	0.592	A	0.611	B	0.019	No	--	--
4. Orange Avenue at 20th Street	AM	0.683	B	0.791	C	0.812	D	0.021	No	--	--
	PM	0.680	B	0.798	C	0.814	D	0.016	No	--	--
5. Atlantic Avenue at Pacific Coast Highway	AM	0.696	B	0.889	D	0.898	D	0.009	No	--	--
	PM	0.706	C	0.878	D	0.892	D	0.014	No	--	--
6. Martin Luther King Jr. Avenue at Pacific Coast Highway	AM	0.593	A	0.749	C	0.763	C	0.014	No	--	--
	PM	0.613	B	0.758	C	0.767	C	0.009	No	--	--
7. Orange Avenue at Pacific Coast Highway	AM	0.761	C	**0.922**	**E**	**0.956**	**E**	**0.034**	**Yes**	N.F.	N.F.
	PM	0.742	C	**0.928**	**E**	**0.953**	**E**	**0.025**	**Yes**	N.F.	N.F.
8. Walnut Avenue at Pacific Coast Highway	AM	0.740	C	0.895	D	**0.939**	**E**	**0.044**	**Yes**	N.F.	N.F.
	PM	0.653	B	0.812	D	0.846	D	0.034	No	N.F.	N.F.
9. Cherry Avenue at Pacific Coast Highway	AM	0.825	D	**0.987**	**E**	**0.999**	**E**	0.012	No	--	--
	PM	0.740	C	**0.938**	**E**	**0.953**	**E**	0.015	No	--	--
10. Alamitos Avenue at East 20th Street	AM	17.0 s/v	C	13.5 s/v	B	13.9 s/v	B	0.4 s/v	No	--	--
	PM	9.7 s/v	A	9.9 s/v	A	10.0 s/v	B	0.1 s/v	No	--	--
11. Orange Avenue at 19th Street/Alamitos Avenue	AM	**132.4 s/v**	**F**	**221.5 s/v**	**F**	**522.8 s/v**	**F**	301.3 s/v	No [a]	0.786	--
	PM	**158.4 s/v**	**F**	**492.8 s/v**	**F**	**905.9 s/v**	**F**	413.1 s/v	**Yes**	0.728	--
12. May Avenue at Pacific Coast Highway	AM	**65.9 s/v**	**F**	**191.5 s/v**	**F**	**10,000 s/v**	**F**	9,808.5 s/v	No [a]	--	--
	PM	27.8 s/v	D	**79.8 s/v**	**F**	**171.3 s/v**	**F**	91.5 s/v	No [a]	--	--

Notes:
s/v = seconds per vehicle
Bold ICU/LOS or HCM/LOS values indicate adverse service levels
[a] = The peak hour traffic signal warrant is not satisfied for this location; therefore, no significant impact per the criteria is mentioned in this report.
N.F. = none feasible

Caltrans Methodology

In conformance with the current Caltrans *Guide for the Preparation of Traffic Impact Studies*, existing and projected peak-hour operating conditions at the five signalized stop-controlled study intersections within the study area have been evaluated using the *Highway Capacity Manual* operations method of analysis. These signalized stop-controlled locations include the following five of 12 key study intersections:

5. Atlantic Avenue at Pacific Coast Highway
6. Martin Luther King Jr. Avenue at Pacific Coast Highway
7. Orange Avenue at Pacific Coast Highway
8. Walnut Avenue at Pacific Coast Highway
9. Cherry Avenue at Pacific Coast Highway

Caltrans "endeavors to maintain a target LOS at the transition between LOS 'C' and LOS 'D' on State highway facilities"; it does not require that LOS "D" (shall) be maintained. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. For this analysis, LOS D is the target level of service standard and will be utilized to assess the project impacts at the stop-controlled study intersections.

Existing Plus Project Traffic Conditions

Table 3-29 summarizes the existing plus project peak-hour HCM level of service results at the five signalized stop-controlled study intersections within the study area. The first column (1) of HCM/LOS values in Table 3-29 presents a summary of existing traffic conditions. The second column (2) presents existing plus project traffic conditions. The third column (3) indicates whether the traffic associated with the Project will have a significant impact based on the LOS standards defined in this report. The fourth column (4) indicates the anticipated operating conditions with implementation of improvements recommended to mitigate Project traffic and/or achieve an acceptable LOS.

Existing Traffic Conditions

Review of Column 1 of Table 3-29 indicates that all of the stop-controlled study intersections currently operate at acceptable LOS C or better during the AM and PM peak hours.

Existing Plus Project Traffic Conditions

Review of Columns 2 and 3 of Table 3-29 indicates that added traffic associated with the Proposed Project will not significantly impact any of the five signalized stop-controlled study intersections when compared to the LOS standards specified in this report. The five signalized stop-controlled study intersections are forecast to continue to operate at acceptable LOS C or better with the addition of project-generated traffic to existing traffic.

Year 2041 Traffic Conditions

Table 3-29 summarizes the Year 2041 peak-hour HCM level of service results at the five signalized stop-controlled study intersections within the study area. The first column (1) of HCM/LOS values in Table 3-29 presents a summary of existing traffic conditions. The second column (2) presents Year 2041 traffic conditions based on existing intersection geometry but without any project-generated traffic. The third column (3) presents Year 2041 traffic conditions with the addition of Project traffic. The fourth column (4) indicates whether the traffic associated with the Project will have a significant impact based on the LOS standards defined in this report. The fifth column (5) indicates the anticipated operating conditions with implementation of improvements recommended to mitigate Project traffic and/or achieve an acceptable LOS.

Year 2041 Buildout Traffic Conditions (Without Project Traffic)

An analysis of future (Year 2041) traffic conditions indicates that the addition of ambient traffic growth and cumulative projects traffic will not adversely impact any of the five signalized stop-controlled study intersections. The five signalized stop-controlled study intersections are forecast to operate at acceptable LOS D or better during the AM and PM peak hours with the addition of ambient traffic growth and cumulative projects traffic.

Year 2041 Buildout Plus Project Traffic Conditions

Review of Columns 3 and 4 of Table 3-29 indicates that traffic associated with the Proposed Project will not significantly impact any of the five signalized stop-controlled study intersections, when compared to the LOS standards specified in this report. The five signalized stop-controlled study intersections are forecast to continue to operate at acceptable LOS D or better with the addition of project-generated traffic in the Year 2041.

Table 3-29: Existing Plus Project Peak-Hour Intersection Capacity Analysis Summary - CALTRANS

Key Intersection	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Significant Impact		(4) Existing Plus Project Traffic Conditions with Improvements	
		ICU/HCM	LOS	ICU/HCM	LOS	Increase	Yes/No	ICU/HCM	LOS
5. Atlantic Avenue at Pacific Coast Highway	AM	23.9 s/v	C	25.0 s/v	C	1.1 s/v	No	--	--
	PM	22.5 s/v	C	22.9 s/v	C	0.4 s/v	No	--	--
6. Martin Luther King Jr. Avenue at Pacific Coast Highway	AM	12.0 s/v	B	12.9 s/v	B	0.9 s/v	No	--	--
	PM	11.0 s/v	B	11.0 s/v	B	0.0 s/v	No	--	--
7. Orange Avenue at Pacific Coast Highway	AM	26.1 s/v	C	27.8 s/v	C	1.7 s/v	No	--	--
	PM	23.3 s/v	C	24.3 s/v	C	1.0 s/v	No	--	--
8. Walnut Avenue at Pacific Coast Highway	AM	10.7 s/v	B	12.2 s/v	B	1.5 s/v	No	--	--
	PM	9.5 s/v	A	11.0 s/v	B	1.5 s/v	No	--	--
9. Cherry Avenue at Pacific Coast Highway	AM	30.0 s/v	C	31.0 s/v	C	1.0 s/v	No	--	--
	PM	25.4 s/v	C	26.9 s/v	C	1.5 s/v	No	--	--

Notes:
s/v = seconds per vehicle
Bold ICU/LOS or **HCM/LOS** values indicate adverse service levels

Table 3-30: Year 2041 Plus Project Peak-Hour Intersection Capacity Analysis Summary - CALTRANS

Key Intersection	Time Period	(1) Existing Traffic Conditions		(2) Year 2041 Buildout Traffic Conditions		(3) Year 2041 Buildout Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2041 Buildout Plus Project Traffic Conditions with Improvements	
		ICU/HCM	LOS	ICU/HCM	LOS	ICU/HCM	LOS	Increase	Yes/No	ICU/HCM	LOS
5. Atlantic Avenue at Pacific Coast Highway	AM	23.9 s/v	C	30.4 s/v	C	30.8 s/v	C	0.4 s/v	No	--	--
	PM	22.5 s/v	C	32.8 s/v	C	32.8 s/v	C	0.0 s/v	No	--	--
6. Martin Luther King Jr. Avenue at Pacific Coast Highway	AM	12.0 s/v	B	15.3 s/v	B	16.0 s/v	B	0.7 s/v	No	--	--
	PM	11.0 s/v	B	14.0 s/v	B	14.5 s/v	B	0.5 s/v	No	--	--
7. Orange Avenue at Pacific Coast Highway	AM	26.1 s/v	C	36.2 s/v	D	38.4 s/v	D	2.2 s/v	No	--	--
	PM	23.3 s/v	C	34.4 s/v	C	36.6 s/v	D	2.2 s/v	No	--	--
8. Walnut Avenue at Pacific Coast Highway	AM	10.7 s/v	B	16.0 s/v	B	20.0 s/v	B	4.0 s/v	No	--	--
	PM	9.5 s/v	A	13.2 s/v	B	16.4 s/v	B	3.2 s/v	No	--	--
9. Cherry Avenue at Pacific Coast Highway	AM	30.0 s/v	C	39.1 s/v	D	40.7 s/v	D	1.6 s/v	No	--	--
	PM	25.4 s/v	C	37.5 s/v	D	38.5 s/v	D	1.0 s/v	No	--	--

Notes:
s/v = seconds per vehicle
Bold ICU/LOS or HCM/LOS values indicate adverse service levels

Mitigation Measures

MM TRA-1: Orange Avenue at 19th Street/Alamitos Avenue: Install a two-phase traffic signal. The installation of this improvement is subject to the approval of the City of Long Beach.

MM TRA-2: Orange Avenue at 19th Street/Alamitos Avenue: Install a two-phase traffic signal. Restripe Orange Avenue to provide an exclusive northbound right-turn lane. The installation of these improvements is subject to the approval of the City of Long Beach.

For the following intersections which would experience significant impacts, no physical mitigation measures are feasible:

- Orange Avenue at Pacific Coast Highway
- Walnut Avenue at Pacific Coast Highway

Residual Impacts

For the Year 2041 Buildout Plus Project Analysis, implementation of improvements at the impacted key study intersection of Orange Avenue/19th Street-Alamitos Avenue completely offsets the impact of project traffic and the key study intersection is forecast to operate at an acceptable LOS during the AM and PM peak hours. For the remaining two impacted key study intersections of Orange Avenue/Pacific Coast Highway and Walnut Avenue/Pacific Coast Highway, additional capacity-enhancing improvements at these two key study intersections do not appear feasible due to physical and right-of-way restrictions that prohibit any additional widening and/or restriping. Therefore, the impacts at these two locations will remain significant. It should be noted that these locations are only significantly impacted by the Proposed Project under the City of Long Beach ICU methodology. These locations do not have a significant impact based on the Caltrans HCM methodology.

3.7.4 Cumulative Impacts

Impact 3.7-2: Result in cumulatively considerable impact with respect to traffic.

Cumulative impacts are considered in the Project impact analysis above, as the transportation analysis includes cumulative project traffic in the area as well as future growth at LBCCD PCC. Future traffic volumes are identified in Figures 3-14 and 3-15; and impacts regarding Year 2041 Buildout Plus Project conditions are portrayed in Table 3-30.

Based on this analysis (see Impact 3.7-1 above), traffic generated as a result of cumulative growth projects is included in the analysis for the Proposed Project, which resulted in a significant and unavoidable impact.

Mitigation Measures

See Mitigation Measures TRA-1 and TRA-2, above.

Residual Impacts

For the Year 2041 Buildout Plus Project Analysis, implementation of improvements at the impacted key study intersection of Orange Avenue/19th Street-Alamitos Avenue completely offsets the impact of project traffic and the key study intersection is forecast to operate at an acceptable LOS during the AM and PM peak hours. For the remaining two impacted key study intersections of Orange Avenue/Pacific Coast Highway and Walnut Avenue/Pacific Coast Highway, additional capacity-enhancing improvements at these two key study intersections do not appear feasible due to physical and right-of-way restrictions that prohibit any additional widening and/or restriping. Therefore, the impacts at these two locations will remain significant. It should be noted that these locations are only significantly impacted by the Proposed Project under the City of Long Beach ICU methodology. These locations do not have a significant impact based on the Caltrans HCM methodology.

SECTION 4.0 – ALTERNATIVES ANALYSIS

4.1 INTRODUCTION AND OVERVIEW

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) describe a range of reasonable alternatives to the project, or to the location of the project, which could feasibly avoid or lessen any significant environmental impacts while substantially attaining the basic objectives of the project. An EIR should also evaluate the comparative merits of the alternatives. This chapter describes potential alternatives to the Proposed Project that were considered, identifies alternatives that were eliminated from further consideration and reasons for dismissal, and analyzes available alternatives in comparison to the potential environmental impacts associated with the Proposed Project.

Key provisions of the *CEQA Guidelines* pertaining to the alternatives analysis are summarized below:

- The discussion of alternatives shall focus on alternatives to the Proposed Project or its location that are capable of avoiding or substantially lessening any significant effects of the Proposed Project, even if these alternatives would impede to some degree the attainment of the Proposed Project objectives or would be more costly.

- The No Project Alternative shall be evaluated along with its impact. The No Project analysis shall discuss the existing conditions at the time the Notice of Preparation is published. Additionally, the analysis shall discuss what would be reasonably expected to occur in the foreseeable future if the Proposed Project were not approved, based on current plans and consistent with available infrastructure and community services.

- The range of alternatives required in an EIR is governed by a "rule of reason"; therefore, the EIR must evaluate only those alternatives necessary to permit a reasoned choice. Alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the Proposed Project.

- For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the Proposed Project need to be considered for inclusion in the EIR.

- An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.

The range of feasible alternatives is selected and discussed in a manner to foster meaningful public participation and informed decision-making. Among the factors that may be taken into account when addressing the feasibility of alternatives are environmental impacts; site suitability; economic viability; availability of infrastructure; general plan contingency; regulatory limitation; jurisdictional boundaries; and whether the proponent could reasonably acquire, control, or otherwise have access to the alternative site. An EIR need not consider an alternative whose effects cannot be reasonably identified, whose implementation is remote or speculative, and that would not achieve the basic project objectives.

4.2 PROJECT OBJECTIVES

As discussed in Chapter 2, Project Description and Environmental Setting, the Proposed Project is intended to advance California's economic growth and global competitiveness through education, training, and services that contribute to continuous workforce improvement.

The District's goal as part of the California community college system is to offer academic and vocational education to students at the lower college division level. In addition, the District's goal is to advance California's economic growth and global competitiveness through education, training, and services that contribute to continuous workforce improvement. Long Beach City College is committed to providing equitable student learning and achievement, academic excellence, and workforce development by delivering high quality educational programs and support services to their diverse communities.

The objective of the 2041 Facilities Master Plan is to provide plans to implement proposed necessary construction, renovation, and general capital improvements at the campus in order to meet the District's goals. The improvements are intended to update and improve existing technological and program services in order to meet the increasing needs of students and faculty. Specific objectives that have been identified by the LBCCD include the following:

- Provide equitable student learning and achievement, academic excellence, and workforce development by delivering high quality education programs and support services to diverse communities

- Provide clear pathways to students to achieve their career and educational goals through providing adequate facilities to support the ability for students to earn an associate degree or certificate solely within each campus, without having to take classes at both campuses

- Provide upgraded athletic facilities that support physical activity on campus and provide opportunities for organized recreational use for the community

- Provide renovated classrooms and educational facilities in order to properly serve current and future students on campus

- Ensure a sustainable and state-of-the-art facilities infrastructure

4.3 ALTERNATIVES TO THE PROPOSED PROJECT

The alternatives identified below, with the exception of the mandatory No Project Alternative, were selected due to their potential to attain the basic project objectives discussed above and to lessen or avoid significant environmental effects resulting from implementation of the Proposed Project. Alternatives considered in this EIR include:

- No Project Alternative

- Reduced Project Alternative

In summary, the purpose of this section is to discuss feasible alternatives and to evaluate the ability of each alternative to reduce or avoid significant adverse environmental impacts while achieving the basic

project objective. The reader is referred to the individual sections of the EIR (Chapter 3) and to the Executive Summary for a detailed discussion of environmental impacts, by each issue area, that would result from implementation of the Proposed Project.

4.3.1 No Project Alternative

Section 15126.6(e) of the *CEQA Guidelines* requires analysis of a No Project alternative that (1) discusses existing site conditions at the time the Notice of Preparation (NOP) is prepared or the SEIR is commenced, and (2) analyzes what is reasonably to be expected to occur in the foreseeable future based on current plans if the Proposed Project were not approved.

Under this alternative, the Proposed Project would not be implemented. The Proposed Project would not be implemented; but the campus would be developed with improvements that have been approved under the 2004 PCC Master Plan, its addendums, and the 2020 Unified Master Plan PCC Improvements.

Potential effects for the No Project Alternative were compared to the areas of potentially significant effects prior to mitigation that could be a result of the Proposed Project.

Air Quality

Construction air quality impacts would be less under the No Project Alternative than for the Proposed Project, since less construction would result in lower construction emissions. During the operational phase, this alternative would result in a lower number of vehicle trips compared to the Proposed Project, thereby resulting in lower vehicle emissions. The No Project Alternative would have reduced air quality impacts in comparison to the Proposed Project. This alternative is considered environmentally superior to the Proposed Project with respect to air quality impacts.

Greenhouse Gas Emissions

Construction greenhouse gas emissions impacts would be less under the No Project Alternative than for the Proposed Project, since less construction would result in lower construction emissions. During the operational phase, this alternative would result in a lower number of vehicle trips compared to the Proposed Project, thereby resulting in lower vehicle emissions. The No Project Alternative would have reduced greenhouse gas emissions impacts in comparison to the Proposed Project. This alternative is considered environmentally superior to the Proposed Project with respect to greenhouse gas emissions impacts.

Noise

Under the No Project Alternative, while length of construction activities could be shorter, daily noise associated with construction would be the same as for the Proposed Project. In addition, this alternative would involve the introduction of new traffic to the site as a result of the increase in instructional building square footage associated with the continued buildout of the 2020 Unified Master Plan for PCC. However, the project traffic would be reduced due to reduction in instructional building square footage and associated college population. Therefore, the No Project Alternative would have reduced noise impacts in comparison to the Proposed Project. This alternative is considered environmentally superior to the Proposed Project with respect to noise impacts.

Transportation and Traffic

The No Project Alternative will not limit the traffic increase that LBCC PCC will experience due to regional growth. However, short-term traffic impacts caused by construction will be reduced. Also, due to the reduced size of this alternative, the increase in traffic volume would be lower. Therefore, the No Project Alternative would reduce transportation and traffic impacts in comparison to the Proposed Project. This alternative is considered environmentally superior to the Proposed Project with respect to transportation and traffic impacts.

Conclusion and Relationship to Project Objectives

The No Project Alternative would result in the continuation of existing conditions at the Proposed Project site. The LBCCD PCC would remain as is, as described in Chapter 2.0, Project Description and Environmental Setting. Compared to the Proposed Project, the No Project Alternative is environmentally superior in the areas of air quality, noise, and transportation and traffic. While the overall impacts associated with the No Project Alternative are considered to be environmentally superior to the Proposed Project, under the No Project Alternative none of the project objectives provided in Section 4.2, above, would be achieved.

4.3.2 Reduced Project Alternative

The Reduced Project Alternative assumes that the campus would be developed consistent with planned improvements outlined in the LBCC 2041 Facilities Master Plan for PCC but that Building OO construction (previously Building 1 Humanities with new construction of 24,500 square feet in the 2020 Unified Master Plan) would not be implemented. After the reduction of Building OO, the Reduced Project Alternative would result in an estimated decrease in 120,000 square feet of new construction. Table 4-1 presents the improvements that would take place under the Reduced Project Alternative. Table 4-2 presents the improvements that would be eliminated under the Reduced Project Alternative.

Table 4-1: Reduced Project Alternative Improvements

Project	Scope/Usage	Scope (GSF)
Building FF Fine Arts/Senior Center	Demolition of building due to the age of the facility and overall condition. Site will be utilities for a new campus entry including a drop-off area and vehicular turnabout	Demolition – 10,640
Building MM Construction Trades (Phase 1)	Major renovation of existing facility and construction of an addition to the building. Renovation includes upgrades to electrical systems, ADA access compliance, HVAC replacement, lighting, plumbing, and aesthetic improvements	New Construction – 4,531 Renovation: 13,288
Building MM Construction Trades (Phase 2)	New construction to provide space for the Drafting and Architecture programs	New Construction – 15,749
Building P2 Parking Structure	Remove existing Buildings UU and VV, construct new multi-story parking structure to serve approximately 500 to 600 vehicles	New Construction -175,000 Remove: 15,550

Table 4-1: Reduced Project Alternative Improvements

Project	Scope/Usage	Scope (GSF)
Buildings QQ & RR Electrical/Dyer Hall/Lifetime Learning	Remove existing Buildings QQ, OO, & PP. Comprehensive renovation of existing RR building, construction of new QQ building, and new landscaping and hardscaping	New Construction – 16,281 Renovation: 6,823 Remove: 18,102
Walkways & Wayfinding	New and revised walkways, installation of uniform signage program to allow for more efficient wayfinding	New Construction

ADA: Americans with Disabilities Act; HVAC: heating, ventilation, and air conditioning

After the reduction of the eliminated Facilities Master Plan improvements, the LBCCD 2041 Facilities Master Plan PCC improvements would result in an estimated decrease from the 2020 Unified Plan PCC Improvements of 95,550 square feet of new building construction.

Table 4-2: Improvements Eliminated Under Reduced Project Alternative

Project	Scope/Usage	Scope (GSF)
Building OO Classroom	Construction of a new instructional building for interdisciplinary classroom facilities	New Construction – 150,000

Air Quality

Construction air quality impacts would be less under the Reduced Project Alternative than for the Proposed Project, since less construction would result in lower construction emissions. During the operational phase, this alternative would result in a lower number of vehicle trips compared to the Proposed Project, thereby resulting in lower vehicle emissions. The Reduced Project Alternative would have reduced air quality impacts in comparison to the Proposed Project. This alternative is considered environmentally superior to the Proposed Project with respect to air quality impacts.

Noise

Under the Reduced Project Alternative, while length of construction activities could be shorter, daily noise associated with construction would be the same as for the Proposed Project. Compared to the Proposed Project, the Reduced Project traffic would be reduced due to reduction in instructional building square footage and associated college population. Therefore, the Reduced Project Alternative would have reduced noise impacts in comparison to the Proposed Project. This alternative is considered environmentally superior to the Proposed Project with respect to noise impacts.

Transportation and Traffic

The Reduced Project Alternative would generate new traffic to the surrounding roadway network. However, due to the reduced size of this alternative, the increase in traffic volume would be lower. Therefore, the Reduced Project Alternative would reduce transportation and traffic impacts in comparison to the Proposed Project. This alternative is considered environmentally superior to the Proposed Project with respect to transportation and traffic impacts.

Conclusion and Relationship to Project Objectives

Compared to the Proposed Project, the Reduced Project Alternative is environmentally superior in the areas of air quality, greenhouse gas emissions, noise, and transportation and traffic. While the overall impacts associated with the Reduced Project Alternative are considered to be environmentally superior to the Proposed Project, under the Reduced Project Alternative, project objectives provided in Section 4.2, above, would be achieved at a lower level; and some objectives would not be achieved at all. Building OO would allow for more classes to be offered at the PCC campus such that students working toward their Associate degree would not need to take classes at both LAC and PCC. Building OO would also provide additional computer lab facilities to support students on campus.

4.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Of the alternatives analyzed in the SEIR, the No Project Alternative is considered the environmentally superior alternative as it would avoid or reduce most of the potential impacts associated with construction and operation of the Proposed Project (see Table 4-3). However, the No Project Alternative would not meet the objectives of the Proposed Project, as it would not provide essential educational facilities at the LBCCD PCC.

CEQA Guidelines requires that if the No Project Alternative is determined to be the environmentally superior alternative, an environmentally superior alternative must also be identified among the remaining alternatives. As such, the Reduced Project Alternative would result in the fewest environmental impacts as compared to the Proposed Project, while still achieving some of the objectives of the Proposed Project.

Table 4-3: Comparison of Alternatives

Environmental Issue Area	Proposed Project	No Project Alternative	Reduced Project Alternative
Air Quality	Less than Significant	Reduced Less than Significant	Reduced Less than Significant
Greenhouse Gas Emissions	Less than Significant	Reduced Less than Significant	Reduced Less than Significant
Noise	Less than Significant with Mitigation	Reduced Less than Significant	Reduced Less than Significant
Transportation	Significant and Unavoidable	Reduced Less than Significant	Reduced Significant and Unavoidable

SECTION 5.0 – OTHER CEQA CONSIDERATIONS

This chapter presents the evaluation of other types of environmental impacts required by the California Environmental Quality Act (CEQA) that are not covered within the other chapters of this Supplemental Environmental Impact Report (SEIR). The other CEQA considerations include environmental effects that were found not to be significant, growth-inducing impacts, and significant and unavoidable adverse impacts.

5.1 ENVIRONMENTAL EFFECTS FOUND NOT TO BE SIGNIFICANT

The Initial Study (IS) for the Proposed Project, completed in February 2018, which is included in the EIR as Appendix A, determined that the Proposed Project would result in no impact or a less than significant impact to 15 of 19 environmental issue areas. The IS for the Proposed Project discusses why the Project would have no impact or less than significant impacts for these issue areas, which are subsequently not discussed in detail in this SEIR. The issue areas determined to have no impact or a less than significant impact in the IS analysis include the following:

- Aesthetics
- Agricultural Resources
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Recreation and Parks
- Utilities and Service Systems
- Wildfire

After a more detailed evaluation of the environmental issues associated with the Proposed Project, the SEIR determined that impacts would be less than significant with incorporation of project design features and mitigation measures for the following environmental issue areas:

- Air Quality
- Greenhouse Gas Emissions
- Noise

After a more detailed evaluation of the environmental issues associated with the Proposed Project, the SEIR determined that impacts would be significant and unavoidable for the following environmental issue areas:

- Transportation

5.2 IRREVERSIBLE ENVIRONMENTAL CHANGES

According to *CEQA Guidelines*, "[u]ses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified." Therefore, the purpose of this analysis is to identify any significant irreversible environmental effects of project implementation that cannot be avoided.

Both construction and operation of the Proposed Project would lead to the consumption of limited, slowly renewable and non-renewable resources, committing such resources to uses that future generations would be unable to reverse. The new development would require the commitment of resources that include: (1) building materials, (2) fuel and operational materials/resources, and (3) the transportation of goods and people to and from the Proposed Project site.

Construction of the Proposed Project would consume certain types of lumber and other forest products, the raw materials in steel, metals such as copper and lead, aggregate materials used in concrete and asphalt such as sand and stone, water, petrochemical construction materials such as plastic, petroleum-based construction materials, and other similar slowly renewable or nonrenewable resources. Additionally, fossil fuels for construction vehicles and equipment would also be consumed. In terms of project operations, the following slowly renewable or nonrenewable resources would be required: natural gas and electricity, petroleum-based fuels, fossil fuels, and water. Title 24 of the California Administrative Code regulates the amount of energy consumed by new development for heating, cooling, ventilation, and lighting purposes. Nevertheless, the consumption of such resources would represent a long-term commitment of those resources.

The commitment of resources required for the construction and operation of the Proposed Project would limit the availability of such resources for future generations or for other uses during the life of the Project. However, continued use of such resources is consistent with the anticipated growth and planned changes on the Proposed Project Site and within the general vicinity. Furthermore, impacts to the energy supply would be less than significant given the existing levels of development within the City of Long Beach and the County of Los Angeles.

Future generations will likely continue to use LBCCD PCC for educational and community purposes. The Proposed Project will not preclude use of the site for other purposes in the future to any degree greater than the No Project Alternative. Additionally, these same resources will be required for the development of the Proposed Project in an available alternative location. In the long term, compared to initial implementation of the Proposed Project, the level of resource commitment for continued operation and maintenance of the LBCCD PCC will be minimal.

5.3 GROWTH-INDUCING IMPACTS

Pursuant to the *CEQA Guidelines*: an EIR must address whether a project will directly or indirectly foster growth as follows:

> *[An EIR shall] discuss the ways in which the Proposed Project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of wastewater treatment plant, might, for example, allow for more construction in service areas). Increases in the population may further tax existing community service facilities so consideration must be given to this impact. Also, discuss the characteristic of some projects, which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.*

As discussed below, this analysis evaluates whether the Proposed Project would directly, or indirectly, induce economic, population, or housing growth in the surrounding environment.

5.3.1 Direct Growth-Inducing Impacts in the Surrounding Environment

Direct growth-inducing impacts occur when the development of a project induces population growth or the construction of additional developments in the same area of a proposed project and produces related growth-associated impacts. Growth-inducing projects, such as the construction of a new road into an undeveloped area, a wastewater treatment plant expansion, and projects that allow new development in the service area, remove physical obstacles to population growth. Constructions of such infrastructure projects are considered in relation to the potential development and the potential environmental impacts.

Implementation of the LBCCD Facilities Master Plan for the PCC campus will affect the construction of new buildings, renovation and modernization of and additions to existing facilities, demolition of existing buildings, and landscaping and open space on campus designed to accommodate projected growth in student population by the LBCCD and regional planning agencies. However, the Proposed Project does not include residential development and does not directly induce population growth. Additionally, a low potential exists that the Proposed Project will directly induce construction of similar college-level facilities in the Project Area and cause growth-related impacts. The Proposed Project will not remove obstacles to regional growth and related development.

5.3.2 Indirect Growth-Inducing Impacts in the Surrounding Environment

Although the Proposed Project will result in additional employment in response to projected enrollment growth, increase in employment has been accounted for by local and regional planning agencies (i.e., City of Long Beach Planning Department and the SCAG), prior to design of the Proposed Project. The purpose of the Proposed Project is to respond to anticipated growth in student enrollment and the need to upgrade the quality of campus educational facilities. The Proposed Project does not contain components likely to indirectly induce employment or an employment-related increase in population.

5.4 SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL IMPACT

The potentially adverse effects of the Proposed Project are discussed in Chapter 3.0 of this SEIR. Project design features and mitigation measures have been recommended that would reduce impacts to air quality, and noise to less than significant based on each set of significance criteria. However, impacts to

transportation would remain significant and unavoidable following implementation of mitigation measures MM TRA-1 and MM TRA-2.

SECTION 6.0 – FINAL SEIR INTRODUCTION

This Final Supplemental Environmental Impact Report (Final SEIR) has been prepared pursuant to requirements of the California Environmental Quality Act (CEQA) and the CEQA Guidelines for the LBCCD 2041 Facilities Master Plan PCC Improvements, State Clearinghouse Number 2004051061. The Final EIR includes: a description of the Community Outreach and Public Review Process for preparing and receiving comments on the Draft EIR (Chapter 7); Response to Comments, which includes LBCCD's responses to all written comments received by agencies, private organizations, and the public for the Draft EIR (Chapter 8); the Draft EIR with changes shown in strikethrough for deletions and ***bold italics*** for additions (Chapter 9); and the Mitigation Monitoring and Reporting Plan (Chapter 10), which lists all the mitigation measures required for implementation of the project, the phase in which the measures will be implemented, and the enforcement agency responsible for compliance.

Environmental Review Process

In accordance with the requirements of CEQA Guidelines Section 15162 and based on the findings of the IS, LBCCD determined that a Draft SEIR should be prepared to analyze the potential impacts associated with the proposed the LBCCD 2041 Facilities Master Plan PCC Improvements.

On February 8, 2018, LBCCD distributed the IS and a Notice of Preparation (NOP) describing the Proposed Project and potential environmental affects, and determined that LBCCD would prepare a Draft SEIR. As listed in Appendix A, the IS/NOP was distributed to the State Clearinghouse and various other local agencies and organizations. In accordance with the requirements of CEQA, LBCCD provided a 30-day scoping/comment period between February 8, 2018 and March 9, 2018, and requested stakeholders to identify specific topics of environmental concern that should be studied in the Draft EIR.

The Draft SEIR was prepared and circulated for a 45-day public review period as required by CEQA, beginning September 19, 2018 and ending November 2, 2018. The Notice of Completion (NOC) and the Draft SEIR was distributed to the State Clearinghouse and various other local agencies and organizations. The CEQA Guidelines require that the Lead Agency responsible for the preparation of the SEIR evaluate comments on environmental issues received from parties who reviewed the Draft SEIR and prepare a written response addressing each of the comments, as described in Chapter 8 of this Final SEIR.

This Final SEIR assembles, in one document, all of the environmental information and analysis prepared for the Proposed Project, including comments on the information and analysis contained in the Draft SEIR, and responses by LBCCD to those comments. The intent of the Final SEIR is to provide a forum to address comments pertaining to the information and analysis contained within the Draft SEIR and to provide an opportunity for clarifications, corrections, or minor revisions to the Draft SEIR, as needed.

SECTION 7.0 – PUBLIC REVIEW PROCESS

Information about the environmental document and public review periods were distributed to the surrounding community using three methods: the NOP and NOC were mailed, and each notice was published in newspaper legal section. The NOP and NOA included information on where to view the Initial Study (IS) and Draft SEIR, and how to comment on the IS and Draft SEIR. The public review period for the NOP/IS (see Appendix A) was from February 8, 2018 to March 9 2018, and the public review period for the Draft SEIR was from September 19, 2018 to November 2, 2018.

Notice of Preparation

Per CEQA Guidelines Section 15082, a NOP was prepared. Public outreach for the IS/NOP included distribution of the NOP using the following methods:

Newspaper Publication

- Published legal announcement of the NOP in the Long Beach Press-Telegram

Notices Available at Key Community Places

- LBCCD Bond Management Team office, Building O-1, 4901 E. Carson Street, Long Beach, California 90808
- PCC Learning Resource Center, Building LL, 1305 East Pacific Coast Highway, Long Beach, California 90806
- Mark Twain Library located at 1325 E. Anaheim Street, Long Beach, California 90813

In addition, the NOP was available online at the LBCCD website (https://www.lbcc.edu/pod/facilities-master-plans).

Notice of Completion and Draft Environmental Impact Report

Upon completion of the Draft EIR, and in accordance with CEQA Guidelines Section 15087(a), the NOC was prepared. Public outreach for the Draft EIR included distribution of the NOC using the following methods:

Newspaper Publications

- Published legal announcement of the NOP in the Long Beach Press-Telegram

Los Angeles County Clerk

- Filed Notice of Availability of the Draft SEIR at the Los Angeles County Clerk

Draft SEIR and NOC

The Draft SEIR and NOC were sent to the Office of Planning and Research, State Clearinghouse for distribution to State agencies. During the public review period, the Draft SEIR and NOC were made available for review at the following locations:

- LBCCD Bond Management Team office, Building O-1, 4901 E. Carson Street, Long Beach, California 90808
- PCC Learning Resource Center, Building LL, 1305 East Pacific Coast Highway, Long Beach, California 90806
- Mark Twain Library located at 1325 E. Anaheim Street, Long Beach, California 90813

In addition, the SEIR was available online at the LBCCD website (https://www.lbcc.edu/pod/facilities-master-plans/).

SECTION 8.0 – RESPONSE TO COMMENTS

This chapter includes written comments received on the Draft SEIR and LBCCD's response to each comment. Comment letters and specific comments are given numbers for reference purposes. Table 8-1, below, provides a list of agencies and persons that submitted comments on the Draft SEIR during the public review period.

Table 8-1: List of Agencies and Persons Submitting Comments

Comment Reference	Commenting Agency/Person	Date of Comment	Page	Type of Comment
Comment Letter #1	State Clearinghouse	November 2, 2018	148	Letter

Comment Letter #1 – State Clearinghouse

Comment Letter #1

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

November 2, 2018

Farzam Fathi
Long Beach Community College District
4901 E. Carson Street G21
Long Beach, CA 90808

Subject: 2041 Facilities Master Plan PCC Improvements
SCH#: 2004051061

Dear Farzam Fathi:

Comment 1-1 The State Clearinghouse submitted the above named Supplemental EIR to selected state agencies for review. The review period closed on November 1, 2018, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Comment 1-2 Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan
Director, State Clearinghouse

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
1-916-322-2318 FAX 1-916-558-3184 www.opr.ca.gov

Comment Letter #1 – State Clearinghouse

Document Details Report
State Clearinghouse Data Base

SCH#	2004051061
Project Title	2041 Facilities Master Plan PCC Improvements
Lead Agency	Long Beach Community College District
Type	SIR Supplemental EIR
Description	The 2041 Facilities Master Plan provides updates to the 2020 Unified Master Plan and provides updated construction dates and budgets for the facilities projects. The proposed project incorporates the space and building needs identified to the year 2041. The LBCCD 2041 Facilities Master Plan LAC improvements would result in an estimated increase over the 2020 Unified Master Plan of 10,640 sf of renovation, and 227,351 sf of new construction, and 10,640 sf removed.

Lead Agency Contact

Name	Farzam Fathi		
Agency	Long Beach Community College District		
Phone	(562) 938-5089	***Fax***	
email			
Address	4901 E. Carson Street G21		
City	Long Beach	***State*** CA	***Zip*** 90808

Project Location

County	Los Angeles		
City	Long Beach		
Region			
Lat / Long	33° 47' 26" N / 118° 10' 27" W		
Cross Streets	Pacific Coast Highway & Walnut Avenue		
Parcel No.			
Township	***Range***	***Section***	***Base***

Proximity to:

Highways	I-405
Airports	Long Beach Airport
Railways	
Waterways	
Schools	Lincoln ES
Land Use	institutional and school district/public facilities

Project Issues	Air Quality; Noise; Traffic/Circulation
Reviewing Agencies	Resources Agency; Department of Fish and Wildlife, Region 5; Cal Fire; Department of Parks and Recreation; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 7; California Department of Education; Department of General Services; State Water Resources Control Board, Division of Drinking Water; Regional Water Quality Control Board, Region 4; Department of Toxic Substances Control; Native American Heritage Commission; San Gabriel & Lower Los Angeles Rivers & Mountains Conservancy

Date Received 09/18/2018 ***Start of Review*** 09/18/2018 ***End of Review*** 11/01/2018

Response to Comment Letter #1 (State Clearinghouse)

Response to Comment 1-1:

This comment from the Governor's Office of Planning and Research confirms the dissemination of the Subsequent EIR to selected state agencies by the State Clearinghouse. The comment also acknowledges that the District has complied with State Clearinghouse review requirements for draft environmental documents. No further response is required.

Response to Comment 1-2:

This comment provides contact information for the State Clearinghouse. No further response is required.

SECTION 9.0 – CHANGES TO THE DRAFT SEIR

This errata section identifies changes made to the Draft SEIR to correct or clarify the information contained in the document. Changes made to the Draft SEIR are identified here in ~~strikeout text~~ to indicate deletions and ***bold italics*** to signify additions.

The changes to the Draft SEIR are listed by section and page number.

Executive Summary, Page 10

The 2041 Facilities Master Plan provides updates to the 2020 Unified Master Plan and provides updated construction dates and budgets for the facilities projects. The Proposed Project incorporates the space and building needs identified to the year 2041. The LBCCD 2041 Facilities Master Plan PCC improvements would result in an estimated change over the 2020 Unified Master Plan of a decrease in 10,640 square feet of renovation, an increase of ~~227,351~~ ***232,372***[2] square feet of new construction, and 10,640 square feet removed.

The following descriptions identify specific improvements recommended for the 2041 Facilities Master Plan PCC improvements that were not part of the 2020 Unified Master Plan or the original 2004 PCC Master Plan Program EIR.

- Building FF (10,640 GSF) will be removed instead of renovated, and the area will be utilized for a new campus entry including a student drop-off area and vehicular turnabout.
- Building MM (Phase 1) will involve a total of 5,307 square feet of new building and ***6,466*** ~~4,837~~ square feet of new canopy instead of 14,286 gross square feet (GSF) which is shown on 2020 Master Plan (~~4,142~~ ***2,513*** GSF of reduction in new construction).
- Building MM (Phase 2) will involve a total of 19,383 square feet of additional new building construction and demolition of approximately 26,240 of existing building.
- Building OO (formerly Building 1 Humanities in the 2020 Unified Master Plan) will increase the size of new construction from 35,000 gross square feet to 150,000 gross square feet.
- Existing Buildings UU and VV will be removed, and a new multi-story parking structure will be constructed to serve approximately 500 to 600 vehicles. The GSF will increase from 72,300 to approximately ~~175,000~~ ***178,392*** GSF.
- Drought-tolerant landscape and hardscape improvements will be made to the existing landscaped areas south and west of Building BB along the Pacific Coast Highway and Orange Avenue.
- Building YY Central Plant will increase new construction by approximately 3,000 GSF to allow for an increase in the capacity of the existing central plant.

[2] The increase in square footage included in the revisions to the Draft SEIR are already accounted for in the analysis as worst-case assumptions were made in the modeling scenario.

- In order for the District to meet the State requirements and Executive Order B-18-12 for Zero-Net-Energy, PCC campus will be studied for possible solar photovoltaic systems at various locations.

Section 2.4, Pages 32-33

Table 2-1: Updated 2041 Facilities Master Plan Improvements

Project	Scope/Usage	Scope (GSF)
Building FF Fine Arts/Senior Center	Demolition of building due to the age of the facility and overall condition. Site will be utilities for a new campus entry including a drop-off area and vehicular turnabout	Demolition – 10,640
Building MM Construction Trades (Phase 1)	Major renovation of existing facility and construction of an addition to the building. Renovation includes upgrades to electrical systems, ADA access compliance, HVAC replacement, lighting, plumbing, and aesthetic improvements	New Construction – 5,307 Renovation: 11,352 New Covered Canopies: ***6,466*** ~~4,837~~
Building MM Construction Trades (Phase 2)	New construction to provide space for the Drafting and Architecture programs	New Construction – 19,383 Demolition – 26,240
Building OO Classroom	Construction of a new instructional building for interdisciplinary classroom facilities	New Construction – 150,000
Building P2 Parking Structure	Remove existing Buildings UU and VV, New multi-story parking structure to serve approximately 500-600 vehicles	New Construction -***178,392*** ~~175,000~~ Remove: 15,550
Buildings QQ & RR Electrical/Dyer Hall/Lifetime Learning	Remove Existing Buildings QQ, OO, &PP, Comprehensive renovation of existing RR building, construction of new QQ building, and new landscaping and hardscaping	New Construction – 24,454 Renovation: 6,823 Remove: 18,102
Walkways & Wayfinding	New and revised walkways, installation of uniform signage program to allow for more efficient wayfinding	New Construction

ADA: Americans with Disabilities Act; HVAC: heating, ventilation, and air conditioning

The LBCCD 2041 Facilities Master Plan PCC improvements would result in an estimated change over the 2020 Unified Master Plan of a decrease in 10,640 square feet of renovation, an increase of ~~227,351~~ ***232,372*** square feet of new construction, and 10,640 square feet removed.

The following descriptions identify specific improvements recommended for the 2041 Facilities Master Plan PCC improvements that were not part of the 2020 Unified Master Plan or the original 2004 PCC Master Plan Program EIR.

- Building FF (10,640 GSF) will be removed instead of renovated, and the area will be utilized for a new campus entry including a student drop-off area and vehicular turnabout.

- Building MM (Phase 1) will involve a total of 5,307 square feet of new building and ***6,446*** ~~,837~~ square feet of new canopy instead of 14,286 gross square feet (GSF) which is shown on 2020 Master Plan (***2,513*** ~~4,142~~ GSF of reduction in new construction).

- Building MM (Phase 2) will involve a total of 19,383 square feet of additional new building construction and demolition of approximately 26,240 of existing building.

- Building OO (formerly Building 1 Humanities in the 2020 Unified Master Plan) will increase in size of new construction from 35,000 gross square feet to 150,000 gross square feet.

- Existing Buildings UU and VV will be removed, and a new multi-story parking structure will be constructed to serve approximately 500 to 600 vehicles. The Gross Square Footage will increase from 72,300 to approximately ***178,392*** ~~175,000~~ square feet.

- Building YY Central Plant will increase new construction by approximately 3,000 GSF to allow for an increase in the capacity of the existing central plant.

- Drought-tolerant landscape and hardscape improvements will be made to the existing landscaped areas south and west of Building BB along the PCH and Orange Avenue.

- In order for the District to meet the State requirements and Executive Order B-18-12 for Zero-Net-Energy, PCC campus will be studied for possible solar photovoltaic systems at various locations.

Section 5.5, Page 141

The potentially adverse effects of the Proposed Project are discussed in Chapter 3.0 of this SEIR. Project design features and mitigation measures have been recommended that would reduce impacts to air quality, ***and*** noise~~, and transportation and traffic~~ to less than significant based on each set of significance criteria. ~~The Project would not result in any significant unavoidable impacts.~~ ***However, impacts to transportation would remain significant and unavoidable following implementation of mitigation measures MM TRA-1 and MM TRA-2.***

SECTION 10.0 – MITIGATION MONITORING AND REPORTING PLAN

Project Location and Description

The LBCC PCC is located at 1305 East Pacific Coast Highway in the City of Long Beach, California 90806. The City of Long Beach is located in the southwest portion of Los Angeles County adjacent to the northern border of Orange County. The PCC is bounded by the Mary Butler School and 20th Street on the north; Walnut Avenue on the east; Pacific Coast Highway (PCH) on the south; and Orange Avenue on the west. Figure 2-1 illustrates the regional and local setting for the City of Long Beach. Figure 2-2 depicts the site on the United States (U.S.) Geological Survey (USGS) Long Beach 7.5-minute quadrangle topographic map.

The Proposed Project Site is approximately 6 miles west of Interstate 605 (San Gabriel River Freeway), 1.4 miles south of Interstate 405 (San Diego Freeway) and the Long Beach Municipal Airport (LBMA), and 1.8 miles east of Interstate 710 (Long Beach Freeway).

Since the 2020 Unified Master Plan, the District has prepared the LBCCD 2041 Facilities Master Plan to provide an understanding of the projects envisioned to be constructed in the near future. This Facilities Master Plan breaks down the type and size of each project for both campuses, as well as estimating the probable cost of each project. The 2041 Facilities Master Plan allows the District to re-evaluate available funds and expanded details of priority projects that the District is working to complete. Enrollment and the production of WSCH were used as the basis for quantifying growth as well as for determining the space needs of the future. The year 2041 was selected as the "target year." Based on the growth rates, the vectors for enrollment and WSCH were determined to intersect with the physical capacity of the two campuses at or about year 2041. Physical capacity was defined by the District as achieving student enrollment of 8,440 and 105,074 WSCH at PCC. At this point in time, the campus will have effectively reached its physical limit for available land area, for parking, and the ability to effectively serve students.

Looking to the year 2041, PCC's priorities will lie with addressing key areas for academic growth. These include the Construction Trades Buildings and Electrical/Lifetime Learning buildings. From the Student Services side of the equation, a new parking structure as well as walkways and wayfinding are a high priority.

The LBCCD 2041 Facilities Master Plan PCC improvements would result in an estimated change over the 2020 Unified Master Plan of a decrease in 10,640 square feet of renovation, an increase of 227,351 square feet of new construction, and 10,640 square feet removed.

Mitigation Monitoring and Reporting Plan Description

The purpose of this Mitigation Monitoring and Reporting Plan (MMRP) is to ensure the effective implementation of the mitigation measures imposed by the LBCCD for the Proposed Project. In addition, this MMRP provides a means of identifying corrective actions, if necessary, before irreversible environmental damage occurs. This plan includes the following:

- A brief description of each impact expected to occur from the proposed project
- Mitigation measure/s associated with each impact
- Responsible monitoring party

- Responsible implementing party
- Implementation phase (i.e., pre-construction, construction, prior to occupancy, post-occupancy)
- Completion date / initials of reviewing party

As the Lead Agency for the Proposed Project, the LBCCD will be required to comply with all applicable plans, permits, and conditions of approval for the Proposed Project, in addition to implementation of this MMRP. The mitigation measures presented in Table 10-1, below, will be implemented as indicated to avoid or minimize environmental impacts of the Proposed Project.

Table 10-1: LBCCD 2041 Facilities Master Plan PCC Improvements Mitigation Monitoring and Reporting Plan

Impact	Mitigation Measure	Responsible Monitoring Party	Responsible Implementing Party	Implementation Phase	Completion Date/Initials
Transportation					
Impact 3.7-1: Conflict with a plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle lanes, and pedestrian paths.	**MM TRA-1:** Orange Avenue at 19th Street/Alamitos Avenue: Install a two-phase traffic signal. The installation of this improvement is subject to the approval of the City of Long Beach.	LBCCD	LBCCD	Prior to operation	
	MM TRA-2: Orange Avenue at 19th Street/Alamitos Avenue: Install a two-phase traffic signal. Restripe Orange Avenue to provide an exclusive northbound right-turn lane. The installation of these improvements is subject to the approval of the City of Long Beach.	LBCCD	LBCCD	Prior to operation	
Impact 3.7-2: Result in cumulatively considerable impact with respect to traffic.	See **MM TRA-1** and **MM TRA-2** above	LBCCD	LBCCD	Prior to operation	

SECTION 11.0 – ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
Air Basin	South Coast Air Basin
AQMP	Air Quality Management Plan
ASF	Assignable Square Footage
BMP	Best Management Practice
Board	Long Beach Community College Board of Trustees
°C	Degrees Celsius
CAA	Federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
Cal EPA	California Environmental Protection Agency
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFC	Chlorofluorocarbon
CH_4	methane
CMP	Congestion Management Program
CNEL	Community Noise Equivalent Level
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
dB/dBA	Decibel(s)
District	Long Beach Community College District
DOT	Department of Transportation
DPM	Diesel particulate matter
Draft SEIR	Draft Supplemental Environmental Impact Report
EIR	Environmental Impact Report
EO	Executive Order
EV	electric vehicle
°F	degrees Fahrenheit
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FTIP	Federal Transportation Improvement Program

Final SEIR	Final Supplemental Environmental Impact Report
GHG	Greenhouse Gas
GSF	Gross Square Footage
GWP	Global warming potential
HAP	hazardous air pollutant
HCM	Highway Capacity Manual
HFCs	hydrofluorocarbons
HI	hazard index
I	Institutional (zoning)
ICU	Intersection Capacity Manual
IPCC	Intergovernmental Panel on Climate Change
IS	Initial Study
LAC	Liberal Arts Campus
LACMTA	Los Angeles County Metropolitan Transportation Authority
LBCC	Long Beach Community College
LBCCD	Long Beach Community College District
LBJC	Long Beach Junior College
LBMA	Long Beach Municipal Airport
LBT	Long Beach Transit
Ldn	Day-Night Sound Level
LEED	Leadership in Energy and Environmental Design
LOS	Level of Service
LST	Localized Significance Threshold
MATES	Multiple Air Toxics Exposure Study
MND	Mitigated Negative Declaration
mpg	miles per gallon
mph	miles per hour
MPO	Metropolitan Planning Organization
$MTCO^2e$	Million tons of carbon dioxide equivalent
Mwh	megawatt hour
$\mu g/m^3$	Micrograms per meters cubed
NAAQS	National Ambient Air Quality Standards
ND	Negative Declaration
NHTSA	National Highway Traffic Safety Administration
NOx	nitrogen oxides
NO_2	nitrogen dioxide
N_2O	nitrous oxide
NOP	Notice of Preparation
O_3	Ozone
OEHHA	California Office of Health Hazard Assessment
ONAC	Office of Noise Abatement and Control
ONC	Office of Noise Control

OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administration
Pb	Lead
PCC	Pacific Coast Campus
PCH	Pacific Coast Highway
PEIR	Program Environmental Impact Report
PFCs	perfluorocarbons
$PM_{2.5}$	Particulate Matter Less than 2.5 Microns in Diameter
PM_{10}	Particulate Matter Less than 10 Microns in Diameter
ppb	parts per billion
ppm	parts per million
REL	reference exposure level
RCNM	Roadway Construction Noise Model
RWQCB	Regional Water Quality Control Board
RTP	Regional Transportation Plan
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SEIR	Supplemental Environmental Impact Report
SF_6	sulfur hexafluoride
SIP	California State Implementation Plan
SO_2	Sulfur Dioxide
SO_4	Sulfates
SOC	Statement of Overriding Considerations
SRA	Source Receptor Area
SWPPP	Stormwater Pollution Prevention Program
TAC	Toxic Air Contaminant
UNFCCC	United Nations' Framework Convention on Climate Change
UMTA	Urban Mass Transit Administration
URBEMIS	Urban Emissions Model
U.S.	United States
U.S.C.	U.S. Code
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USGS	U.S. Geological Survey
VdB	Velocity Levels in Decibels
V/C	Volume-to-Capacity
VMT	Vehicle miles traveled
VOC	Volatile Organic Compound
vph	vehicles per hour
WSCH	Weekly Student Contact Hours

SECTION 12.0 – REFERENCES

California Air Resources Board (CARB)

2008a Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act, on October 24, 2008.

2008b Addendum to January 2 Technical Assessment. Comparison of Greenhouse Gas Reductions for All Fifty United States. Accessed 2018 at https://www.arb.ca.gov/cc/ccms/pavley-addendum.doc

2009 Technical Support Document for California's Greenhouse Gas Emissions Inventory and 1990 Emissions Level. California Air Resources Board. (March 2009). Available online at: http://www.arb.ca.gov/cc/inventory/doc/methods_v1/ghg_inventory_technical_support_document.pdf

2012 Proposed Amendments to New Passenger Motor Vehicle Greenhouse Gas Emission Standards for Model Year 2017-2025 to Permit Compliance Based on Federal Greenhouse Gas Emissions Standards and Additional Minor Revisions to the LEV III and ZEV Regulations, September 14, 2012. Accessed 2018 at https://www.arb.ca.gov/regact/2012/leviiidtc12/dtcisor.pdf

2014 First Update to the Climate Change Scoping Plan, May 2014. Accessed 2018 at https://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf

2017 Final Staff Report Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets, October 2017. Accessed 2018 at https://www.arb.ca.gov/cc/sb375/final_staff_proposal_sb375_target_update_october_2017.pdf

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California Climate Action Registry

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SECTION 13.0 – REPORT PREPARATION

Name	Project Role/EIR Chapter
Lead Agency/Reviewers	
Marlene Dunn	Vice President of Business Services
Brendan Hayes	Interim Deputy Director of Planning & Construction
Medhanie Ephrem	Deputy Director of Facilities & Maintenance
Bob Rapoza	Business Support Services, Director
Farzam Fathi	Bond Management Team, Construction Manager
Terrance DeGray	Bond Management Team, Program Director
CEQA Consultant: Chambers Group, Inc	
Meghan Gibson	Project Manager, Project Environmental Planner
Corinne Lytle Bonine	Managing Environmental Planner
Eunice Bagwan	Assistant Environmental Planner
Thomas Strand	Environmental Planner
Chambers Group Inc. Subconsultants	
Greg Tonkovich (Vista Environmental)	Air Quality, Greenhouse Gas, Noise Analysis
Dan Kloos (Linscott, Law, and Greenspan)	Traffic Impact Analysis

APPENDIX A – NOTICE OF PREPARATION, INITIAL STUDY, AND COMMENTS

LONG BEACH CITY COLLEGE
NOTICE OF PREPARATION
INITIAL STUDY
FOR THE 2041 FACILITIES MASTER PLAN
PACIFIC COAST CAMPUS IMPROVEMENTS

Prepared for:

LONG BEACH COMMUNITY COLLEGE DISTRICT
4901 East Carson Street
Long Beach, California 90808

Prepared by:

CHAMBERS GROUP, INC.
5 Hutton Centre Drive, Suite 750
Santa Ana, CA 92707-8714

February 2018

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SECTION 1.0 – INTRODUCTION

1.1 PURPOSE OF THE NOTICE OF PREPARATION AND INITIAL STUDY

The Long Beach Community College District (LBCCD or District) proposes to update the 2020 Unified Master Plan Pacific Coast Campus (PCC) Master Plan as described in the 2041 Facilities Master Plan, Pacific Coast Campus Improvements.

All "projects" within the State of California are required to undergo environmental review to determine the environmental impacts associated with implementation of the project in accordance with the California Environmental Quality Act (CEQA). CEQA was enacted in 1970 by the California Legislature to disclose to decision makers and the public the significant environmental effects of a Proposed Project and identify possible ways to avoid or minimize significant environmental effects of a project by requiring implementation of mitigation measures or recommending feasible alternatives. CEQA applies to all California governmental agencies at all levels, including local, regional and state, as well as boards, commissions, and special districts (such as LBCCD). As such, LBCCD is required to conduct an environmental review to analyze the potential environmental effects associated with the Proposed Project.

The findings in this Initial Study (IS) have determined that a Supplemental Environmental Impact Report (SEIR) is the appropriate level of environmental documentation. The Proposed Project could result in potentially significant impacts in air quality, greenhouse gas emissions, noise, and transportation issue areas. These issue areas shall be further addressed in the SEIR.

LBCCD will be the Lead Agency for the CEQA process related to this Proposed Project and for the SEIR that is recommended in this Notice of Preparations/Initial Study (NOP/IS). The attached IS analyzes the potential for environmental impacts to result from the updates to the 2004 PCC Master Plan and 2020 Unified Master Plan as described in the 2041 Facilities Master Plan.

LBCCD needs to know the views of your agency regarding the scope and content of the environmental information that should be included in the SEIR. The document will be prepared by LBCCD and will include any information necessary for your agency to meet any statutory responsibilities related to the Proposed Project. Your agency will need to use the SEIR when considering any permit or other approvals necessary to implement the project. A preliminary list of the environmental topics identified for study in this SEIR is provided in the IS checklist (Section 4). If the topics of concern to your agency have already been identified for analysis in the IS, your agency need not provide a response to this notice.

The project description, location, and the environmental issues to be addressed in the SEIR are contained in the attached materials.

Due to the time limits mandated by State law, your comments must be sent to LBCCD at the earliest possible date but not later than 30 days after receipt of this notice. Please send your response to:

Farzam Fathi
Long Beach Community College District – Bond Management Team
4901 E. Carson Street – G21
Long Beach, CA 90808

Your comments may also be sent via facsimile to (562) 938-5065 or by email to CEQA@lbcc.edu and include "2041 Facilities Master Plan PCC Improvements" in the subject line. Agency responses to the NOP should include the name of a contact person within the commenting agency.

1.2 USE OF MASTER PLAN PROGRAM EIR

LBCCD prepared a Program Environmental Impact Report (PEIR) which provided environmental review for the Long Beach City College (LBCC) PCC Master Plan in accordance with the requirements of CEQA. The objective of the Master Plan is to meet increasing enrollment needs, evolving demands for post-secondary educational institutions, and the needs of the Long Beach community. LBCCD Board of Trustees certified the PEIR on January 25, 2005. The PEIR provides general analysis and guidance on the Master Plan; project-specific analysis is provided in later CEQA documents through a process known as "tiering." LBCCD has utilized the PEIR in the preparation of this IS to determine the appropriate CEQA document needed to evaluate the environmental effects of the project. The PEIR is available for review at the LBCCD Bond Management Team office at the LBCC Liberal Arts Campus (LAC) in Building 01 – First Floor, located at 4901 E. Carson Street, Long Beach, California 90808 and at and PCC Learning Resource Center, Building L, located at 1305 East Pacific Coast Highway, Long Beach, California 90806.

1.3 AVAILABILITY OF THE NOP/IS

The NOP/IS for the 2041 Facilities Master Plan PCC Improvements project is being distributed through the State Clearinghouse and directly to numerous agencies, organizations, and interested groups and persons for comment during the scoping period. The NOP/IS is also available for review at the following locations:

- LBCCD Bond Management Team office, LBCC LAC, 4901 E. Carson Street, Long Beach, California 90808
- PCC Learning Resource Center, Building L, LBCC PCC, 1305 East Pacific Coast Highway, Long Beach, California 90806
- Mark Twain Library located at 1325 E. Anaheim Street, Long Beach, California 90813.

In addition, the NOP/IS is available online at the LBCCD website (https://www.lbcc.edu/pod/facilities-master-plans).

SECTION 2.0 – PROJECT DESCRIPTION AND ENVIRONMENTAL SETTING

2.1 PROJECT BACKGROUND AND OBJECTIVES

The LBCCD, founded in 1927, is one of the largest of the 114 California community college districts. The District is comprised of two campuses: the Liberal Arts Campus (LAC) located at 4901 East Carson Street, Long Beach, California and the Pacific Coast Campus (PCC), the subject of this Supplemental EIR. Together, the campuses currently serve a student population of more than 24,000.

The District's goal as part of the California Community College system is to offer academic and vocational education to students at the lower college division level. In addition, the District's goal is to advance California's economic growth and global competitiveness through education, training, and services that contribute to continuous workforce improvement. Long Beach City College is committed to providing equitable student learning and achievement, academic excellence, and workforce development by delivering high quality educational programs and support services to their diverse communities.

The objective of the 2041 Facilities Master Plan is to provide plans to implement proposed necessary construction, renovation, and general capital improvements at the campus in order to meet the District's goals and to support the District's Strategic Plan. The improvements are intended to create and improve building space to support the LBCCD Strategic Plan and Student Learning Outcomes in all areas.

Location

The LBCC PCC is located at 1305 East Pacific Coast Highway in the City of Long Beach, California 90806. The City of Long Beach is located in the southwest portion of Los Angeles County adjacent to the northern border of Orange County. The PCC is bound by the Mary Butler School and 20th Street on the north; Walnut Avenue on the east; Pacific Coast Highway (PCH) on the south; and Orange Avenue on the west. Figure 2-1 illustrates the regional and local setting for the City of Long Beach.

The Proposed Project Site is approximately six miles west of the Interstate 605 (San Gabriel River Freeway), 1.4 miles south of the Interstate 405 (San Diego Freeway) and the Long Beach Municipal Airport (LBMA), and 1.8 miles east of the Interstate 710 (Long Beach Freeway).

Adjacent Land Uses

The Proposed Project Site is located along PCH between Orange Avenue and Walnut Avenue in the City of Long Beach. The PCC is within the City of Long Beach General Plan Land Use District No. 10 – Institutions/Schools and is zoned Institutional (I). LBCC PCC is part of the Central Area Neighborhood Plan. Figure 2-2 presents the Proposed Project Site and adjacent land uses.

As shown in Figure 2-2, existing land use surrounding PCC are institutional (Mary Butler School), multi-family residential to the north; city park on the east; commercial, residential, and institutional on the south; and city park, residential, and neighborhood commercial uses on the west.

PCC Land Uses

The PCC contains approximately 30 acres and 23 buildings constructed between 1935 and 2017 and contains approximately 349,131 square feet of gross building area. The PCC also includes ancillary structures of landscaped areas, asphalt-paved parking lots, and pedestrian walkways. Table 2-1 provides a building inventory including the age of construction, use, and square footage of each building. Figure 2-3 presents the existing site plan for the PCC.

Figure 2-1 Regional and Local Settings

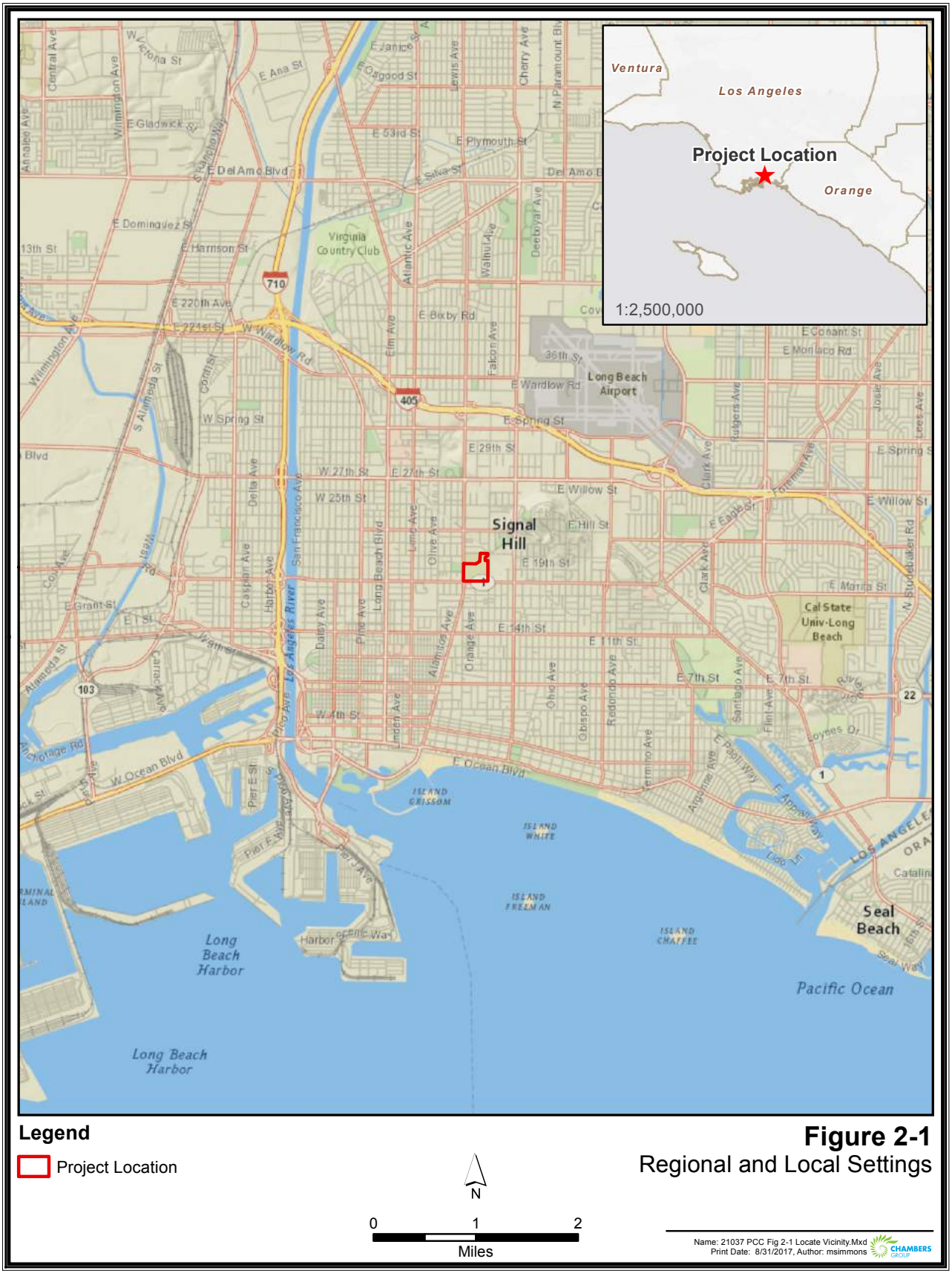


Figure 2-2 USGS Topographic Map

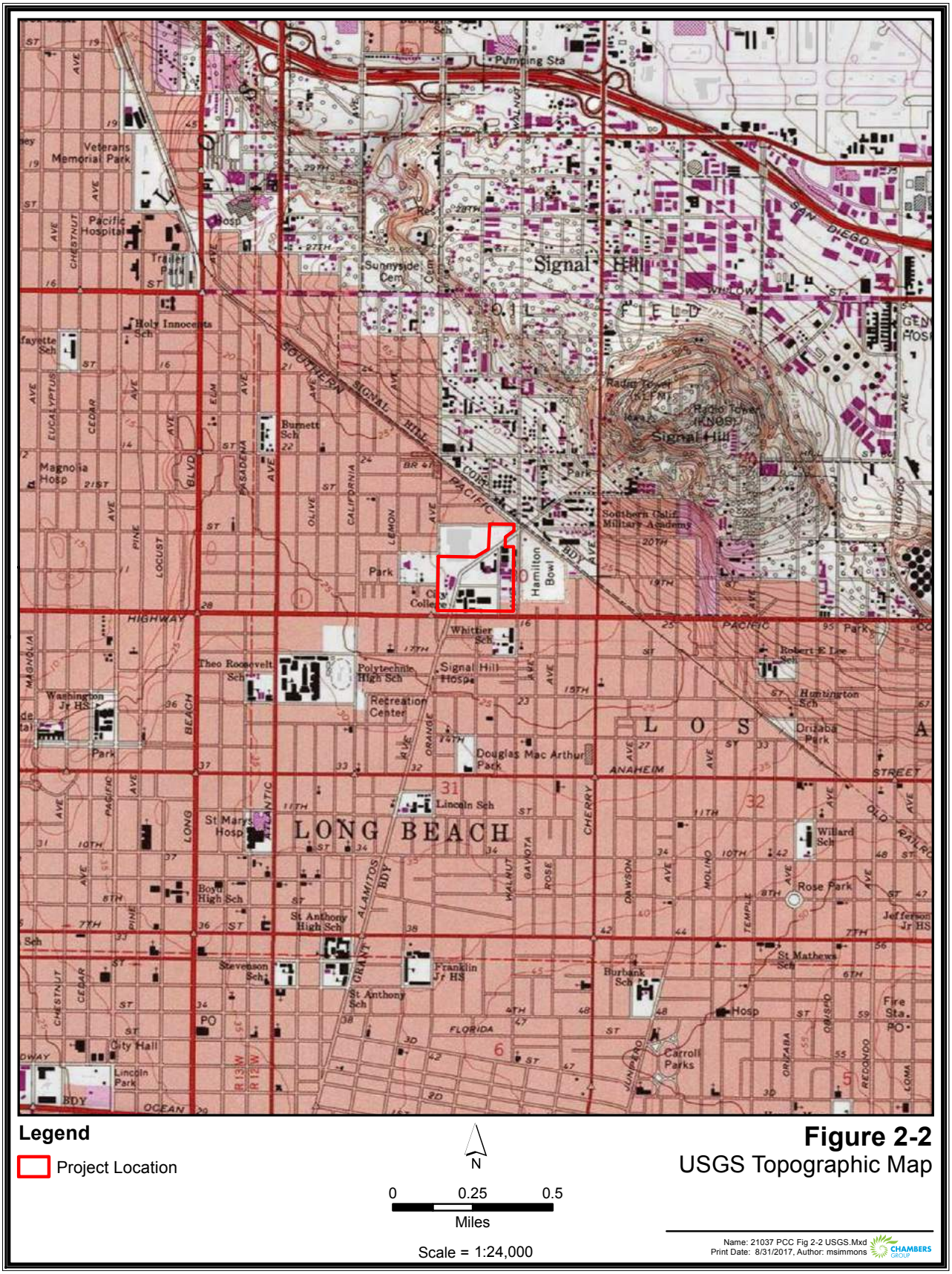


Table 2-1 PCC Existing Building Inventory

Building/Department Name	Building Number	Gross Square Feet	Year Built	Last Addition
ADMINISTRATION	AA	30,165	1935	2014
WRITING CENTER/ESL	BB	14,768	1935	2014
FITNESS CENTER	CC	7,150	1935	2012
CLASSROOMS/RESOURCE CTR	DD	14,639	1935	2011
STUDENT CENTER/BOOKSTORE	EE	46,439	1950	2011
CLASSROOMS/SENIOR CENTER	FF	10,640	1936	1957
STUDENT SERVICES	GG	43,124	2016	--
ALTERNATIVE FUELS	MM	5,127	1957	--
REF-AIR-COND-SHT-MET	MM	12,306	1957	--
TECH OFFICE CLASSROOM	MM	7,371	1969	--
CONSTRUCTION TRADES	MM	19,013	1952	1989
SHADE HOUSE	NN	4,000	1975	--
GREENHOUSE	KK	3,150	1975	1998
INDUSTRIAL TECH II	JJ	24,334	2007	--
LIBRARY/LRC	LL	21,336	2008	--
ROBOTICS	RR	7,667	1953	2017
INDUSTRIAL ELECTRIC	QQ	24,454	2017	--
CENTRAL PLANT	YY	6,900	2009	--
INDUSTRIAL TECH I	II	26,700	2010	--
CHILD DEVELOPMENT CENTER	HH	15,845	2005	--
UU-A	UUA	2,083	2006	--
UU-B	UUB	960	2006	--
UU-C	UUC	960	2006	--
Source: FUSION data base 2017				

Figure 2-3 Existing PCC Site Plan

2.1.1. LBCC and PCC History

LBCC, then known as Long Beach Junior College (LBJC), celebrated its 90th Anniversary in 2017. The college opened at Woodrow Wilson High School in September 1927. LBJC was the second two-year college established in the metropolitan area of Los Angeles. LBJC served students not only from Long Beach but also as far away as Redondo Beach (north) and Laguna Beach (south). LBJC was offered 25 acres on Carson Street for a new campus in 1933 from the Montana Land Company. The area was then known as "Lakewood Village." The Montana Land Company donated additional land parcels in 1934. The new campus with a total of 29.844 acres, now referred to as LBCC LAC, opened in 1935 with Mission architecture with tile roofs, white exterior walls, and patios. Bean, alfalfa, and carrot fields surrounded the new campus on Carson. The first mailing address of the Carson campus was Route No. 1, Clark and Carson Streets. The enrollment in 1935-36 was 1,603 students with 51 full-time faculty members. By 1942-43, the middle of the war years (1941-45), enrollment had climbed to 2,966 students with 56 full-time faculty members. In the postwar expansion period from 1945-52, LAC acquired an additional 38.379 acres south of Carson Street.

In response to the postwar increase in enrollment, the LAC also acquired the former Hamilton Junior High School site at PCH and Alamitos Avenue in 1949 for the newly formed Business and Technology Division of LBCC. This site is now the PCC of LBCC.

2.1.2 2004 Master Plan Elements

A general obligation bond election (Measure "E"/ Proposition 39) was approved in March 2002 for both general and specific improvements at LBCC at both the PCC and the LAC. The District is undertaking an extensive improvement and building program at the two campuses to meet increasing enrollment needs, evolving demands for post-secondary educational institutions, and the needs of the Long Beach community. Additionally, the District will be using capital improvement funds from the State of California for renovation and new construction projects.

In 2004, the District prepared the LBCC PCC Master Plan to reflect LBCC's projected instructional and programmatic needs for the PCC. The 2004 LBCC PCC Master Plan outlines capital improvements through 2015 and proposes construction of new buildings, renovation, modernization and additions to existing facilities, demolition of existing buildings, and landscaping enhancements. Improvements are intended to update existing technological and program services to meet increasing needs of students and faculty. Figure 2-4 and Table 2-2 presents the 2004 LBCC PCC Master Plan Improvements.

The District prepared a PEIR to address implementation of the 2004 LBCC PCC Master Plan. The Board of Trustees of the LBCCD certified the Final PEIR for the 2004 LBCC PCC Master Plan, State Clearinghouse No. 2004051060, on January 25, 2005. Since the adoption of the PEIR, two Addendums to the PEIR were completed to address updates to the original project description. The September 2008 Addendum addressed revising the project description to locate a proposed parking structure at one of two alternative locations on the PCC campus. This Addendum was approved by the Board of Trustees of the LBCCD on September 23, 2008. The May 2009 Addendum addressed a revision to the renovation/retrofit of Building MM proposed in the PEIR to add the replacement of 3,000 existing assignable square footage (ASF) with a 10,000 ASF addition. This Addendum was approved by the Board of Trustees of the LBCCD on May 19, 2009. Table 2-2 and Figure 2-4 present PCC Master Plan Improvements analyzed under the PEIR and its Addendums.

Table 2-2 2004 Unified Master Plan PCC Improvements

Project	Function/Support	Scope (GSF)
Buildings AA, BB, CC, DD, EE, FF, GG, MM, NN, QQ, & RR	Primary Academic Support	Renovate/Reconstruction – 203,100
Building MM Construction Trades	Replace a portion of Building MM.	Expansion – 14,286 Remove – 3,000
Technology Building	Demolish Buildings UU and VV, construct Technical Building	New Construction – 26,904
Aeronautics Test Cell Building	Aeronautics	New Construction – 1,800
Paint Booth	Adjacent to Test Cell	New Construction – 600
Building PCC-J Technology	Demolish Buildings SS and TT, construct Technical Building	New Construction – 29,793
Building PCC-L Learning Resource Center (LRC)	Learning Resources	New Construction – 55,441
Building PCC-H Child Development Center	Child Development Program	New Construction – 17,375
Parking	Remove Buildings UU and VV. Construct parking structure and surface parking lots	Remove – 15,550 New Construction - 72,300
Office/ Classroom Building	Office/ Classroom/ Lab	New Construction – 47,364
Office/ Classroom Building	Office/ Classroom/ Lab	New Construction – 60,314
Landscape Improvements	Campus wide	New Construction
Drainage Improvements	Campus wide	New Construction
Signage Improvements	Campus wide	New Construction
Central Plant	Maintenance and Operations	New Construction – 6,182
Restroom Facility		New Construction – 2,000

(Note: These square footage numbers have been changed from ASF to gross square footage (GSF) for purposes of analysis within this Supplemental EIR. Only conversions from ASF to GSF or clarifications in numbers were made here.)

2.1.3 2020 Unified Master Plan Elements

Although the Measure E Bond Program, approved in March 2002, provided a jump start to the District's capital facilities program, it was never intended to address all building/facilities needs for the campus. The age of the existing facilities coupled with the need to meet both current and future growth of the academic program of instruction required improvements that go beyond Measure E.

The District addressed this need in 2006 when it requisitioned the LBCC Resource and Facilities Plan. The Resource and Facilities Plan identified the growth rates vis-à-vis the academic programs of instruction at LAC and PCC. Enrollment and the production of weekly student contact hours (WSCH)

were used as the basis for quantifying growth as well as for determining the space needs of the future. The year 2020 was selected as the "target year." Based on the growth rates, the vectors for enrollment and WSCH were determined to intersect with the physical capacity of the two campuses at or about year 2020. Physical capacity was defined as achieving student enrollment of 8,700 and 130,000 WSCH at PCC. At this point in time, the campus will have effectively reached its physical limit for available land area, for parking, and the ability to effectively serve students.

While the 2020 target year was somewhat relative, the enrollment and WSCH benchmarks were not. Enrollment and WSCH projections may be reached prior to the year 2020 or after that point in time. However, when 130,000 WSCH are reached at PCC, the campus will effectively be operating at maximum capacity.

Looking to the year of 2020, PCC's priorities focused on addressing the key areas for academic growth. PCC has already benefited substantially from the current capital construction program. Four new building projects and one major renovation project (the Multi-disciplinary Building) were proposed to be completed via the current Measure E Program. For the 2020 target year, replacement of the Construction Trades Building was needed in addition to a new building (the Humanities Building) that can support the expansion of the academic program of instruction and diversity of the curriculum. Replacement of the building that presently supports Auto Body/Diesel Mechanics was also a point of focus as the building/facilities program moves out to the year 2020. Support services priorities at PCC were proposed to include a one-stop Student Services Center and a new Maintenance and Operations Building. The provision of additional parking was a requirement if PCC was to meet the enrollment and WSCH growth that was projected.

The 2020 Unified Master Plan provided a prioritized program of work incorporating the 2004 Master Plan and the space and building needs identified to the year 2020. Figure 2-4 presents the LBCC 2020 Unified Master Plan PCC improvements. Table 2-3 presents the updates to the Master Plan through eliminated projects. Table 2-4 presents the updates to the Master Plan through new projects which were not analyzed in the PEIR or its Addendums.

Table 2-3 Eliminated or Reduced Master Plan Improvements

Project	Function/Support	Scope (GSF)
Buildings AA, BB, DD, & EE Multi-Discipline	Primary Academic Support	Reduce Renovation by 32,069
Building FF Fine Arts/ Senior Center	Fine Arts/ Community	Reduce Renovation by 2,652
Building GG Student Services	Student Services	Reduce Renovation by 5,105
Building PCC-J Technology	Vocational/ Technical Programs	Reduce New Construction by 5,459
Building PCC-L Learning Resource Center (LRC)	Learning Resources	Reduce New Construction by 34,497
Office/ Classroom Building	Office/ Classroom/ Lab	New Construction – 33,155
Office/ Classroom	Office/ Classroom/ Lab	New Construction – 42,220

Building		

(Note: These square footage numbers have been changed from ASF to GSF for purposes of analysis within this Supplemental EIR. Only conversions from ASF to GSF or clarifications in numbers were made here.)

Table 2-4 Updated Master Plan Improvements

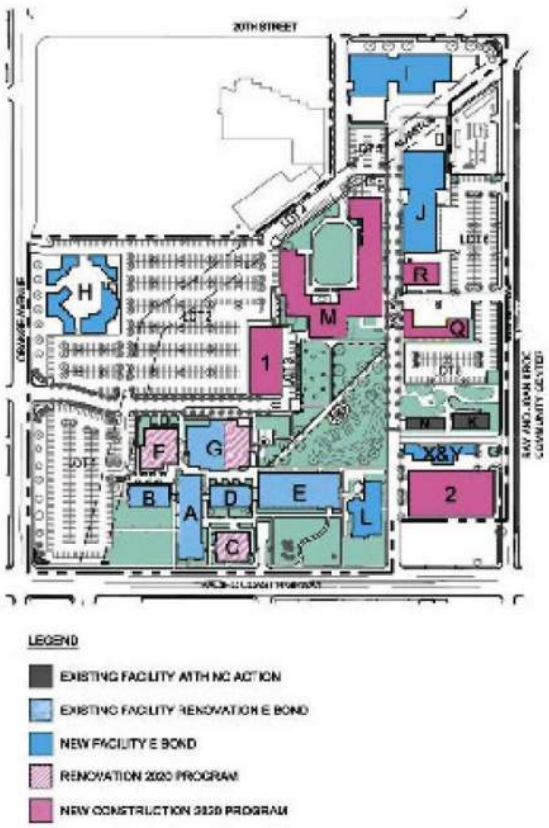
Project	Function/Support	Scope (GSF)
Buildings QQ & RR Auto Body/ Diesel	Replace Buildings QQ & RR with new construction.	New Construction - 33,044 Remove – 18,102
Building 1 Humanities	General Academic Programs	New Construction - 35,000
Land Acquisition	Land on the NW corner of Walnut Avenue and PCH	Acquisition - 32,400
Circulation Improvements	Campus wide	New Construction
Signage Improvements	New electronic informational sign adjacent to PCH	New Construction
Photovoltaic Projects	PCC buildings will be studied for possible Solar Photovoltaic systems.	New Construction

(Note: These square footage numbers have been changed from ASF to GSF for purposes of analysis within this Supplemental EIR. Only conversions from ASF to GSF or clarifications in numbers were made here.)

The following descriptions identify specific improvements recommended for the 2020 Unified Master Plan PCC Improvements which were not part of the 2004 Master Plan.

- Buildings QQ and RR will be removed and replaced with a new 33,044 GSF building.
- New Building 1 will be constructed adjacent to Building MM to the southwest. It will consist of 35,000 GSF and will support the General Academic Programs.
- LBCCD will acquire 32,400 sq. ft. of land adjacent to the PCC at the NW corner of Walnut Avenue and PCH.
- Two new campus vehicle drop off zones will be added in front of Building EE and between the Library and Parking Structure. Ray Avenue is proposed to include a dedicated service lane for electrical and small campus motorized maintenance vehicles. A new service lane is proposed to be located on the north side of Buildings GG for access.
- An electronic information sign will be installed adjacent to PCH near the corner of PCH and Orange Avenue. This sign will be approximately 26 feet tall and 9 feet wide.
- PCC buildings will be studied for possible Solar Photovoltaic systems. The first system will be placed on the roof of the addition to Building MM, and others may be added if appropriate rooftops are identified.

Figure 2-4 LBCC 2020 Master Plan Improvements



EXISTING FACILITY

A,B,D&E MULTI-DISCIPLINARY
D FITNESS CENTER
F FINE ARTS / SENIOR CENTER
G STUDENT SERVICES
H CHILD DEVELOPMENT CENTER
L LEARNING RESOURCE CENTER
N HORTICULTURE
K GREENHOUSE

E BOND PROGRAM

A,B,D&E MULTI-DISCIPLINARY
G STUDENT SERVICES
H CHILD DEVELOPMENT CENTER
I TECHNOLOGY PHASE 1
J TECHNOLOGY PHASE 2
L LEARNING RESOURCE CENTER
K INFRASTRUCTURE - RESTROOMS
Y INFRASTRUCTURE CENTRAL PLANT / SATELLITE MAINTENANCE

2020 PROGRAM

D FITNESS CENTER
F FINE ARTS / SENIOR CENTER
G STUDENT SERVICES
M CONSTRUCTION TRADES
Q AUTO BODY
R DIESEL MECHANICS
1 HUMANITIES BUILDING
2 PARKING STRUCTURE

N

PCC FACILITY SITE PLAN

The 2020 Facility Site Plan illustrates building projects included in the Measure E Bond Program and in the proposed 2020 plan. The plan shows growth of campus programs primarily through replacement and renovation in the areas where programs are currently located. Buildings I, J, and L are presently under construction as part of the Measure E Program. Proposed building zones for new construction in the 2020 building/facilities program are noted for Buildings 1, 2, M, R and Q. Replacement buildings are shown in the current configuration only to illustrate site size. A more finite building footprint will be developed as the project scope becomes more fully defined.

Figure 2-4
2020 Unified Master Plan PCC

Name: 21037 PCC Fig 2-4 2020 Master Plan.Mxd
Print Date: 8/31/2017, Author: msimmons
CHAMBERS GROUP

2.2 PROJECT DESCRIPTION

2041 Facilities Master Plan PCC Improvements

Since the 2020 Unified Master Plan, the District has prepared the LBCCD 2041 Facilities Master Plan to provide an understanding of the projects envisioned to be constructed in the near future. This Facilities Master Plan breaks down the type and size of each project for both campuses, as well as estimating the probable cost of each project. The 2041 Facilities Master Plan allows the District to re-evaluate available funds and expanded details of priority projects that the District is working to complete. Enrollment and the production of WSCH were used as the basis for quantifying growth as well as for determining the space needs of the future. The year 2041 was selected as the "target year." Based on the growth rates, the vectors for enrollment and WSCH were determined to intersect with the physical capacity of the two campuses at or about year 2041. Physical capacity was defined as achieving student enrollment of 8,440 and 105,074 WSCH at PCC. At this point in time, the campus will have effectively reached its physical limit for available land area, for parking, and the ability to effectively serve students.

Looking to the year 2041, PCC's priorities will lie with addressing key areas for academic growth. These include the Construction Trades Buildings and Electrical/Lifetime Learning buildings. From the Student Services side of the equation, a new parking structure as well as walkways and wayfinding are a high priority.

2.3 PROJECT DESIGN FEATURES

Master Plan Updates

The 2041 Facilities Master Plan provides updates to the 2020 Unified Master Plan and provides updated construction dates and budgets for the facilities projects. The projects incorporate the space and building needs identified to the year 2041. Figure 2-5 presents the LBCC 2041 Facilities Master Plan PCC improvements. Table 2-5 presents the updates to the Master Plan through new project details determined since the previous SEIR.

Figure 2-5 LBCC 2041 Facilities Master Plan PCC Improvements

Figure 2-5
2041 Facilities Master Plan PCC

Name: 21037 PCC Fig 2-5 2041 Master Plan.Mxd
Print Date: 8/31/2017, Author: msimmons

Table 2-5 Updated 2041 Facilities Master Plan Improvements

Project	Scope/Usage	Scope (GSF)
Building FF Fine Arts/Senior Center	Demolition of building due to the age of the facility and overall condition. Site will be utilities for a new campus entry including a drop-off area and vehicular turnabout	Demolition – 10,640
Building MM Construction Trades (Phase 1)	Major renovation of existing facility and construction of an addition to the building. Renovation includes upgrades to electrical systems, ADA access compliance, HVAC replacement, lighting, plumbing, and aesthetic improvements	New Construction – 4,531 Renovation: 13,288
Building MM Construction Trades (Phase 2)	New construction to provide space for the Drafting and Architecture programs	New Construction – 15,749
Building OO Classroom	Construction of a new instructional building for interdisciplinary classroom facilities	New Construction – 150,000
Building P2 Parking Structure	Remove existing Buildings UU and VV, New multi-story parking structure to serve approximately 500-600 vehicles	New Construction -175,000 Remove: 15,550
Buildings QQ & RR Electrical/Dyer Hall/Lifetime Learning	Remove Existing Buildings QQ, OO, &PP, Comprehensive renovation of existing RR building, construction of new QQ building, and new landscaping and hardscaping	New Construction – 16,281 Renovation: 6,823 Remove: 18,102
Walkways & Wayfinding	New and revised walkways, installation of uniform signage program to allow for more efficient wayfinding	New Construction

The LBCCD 2041 Facilities Master Plan LAC improvements would result in an estimated change over the 2020 Unified Master Plan of a decrease in 10,640 square feet of renovation, an increase of 218,104 square feet of new construction, and 10,640 square feet removed.

The following descriptions identify specific improvements recommended for the 2041 Facilities Master Plan PCC improvements that were not part of the 2020 Unified Master Plan or the original 2004 PCC Master Plan Program EIR.

- Building FF will be removed instead of renovated, and the area will be utilized for a new campus entry including a student drop-off area and vehicular turnabout.

- Building MM (Phases 1 and 2) will involve a total of 20,280 square feet of new construction for building additions instead of 14,286 GSF which is shown on 2020 master plan (5,994 GSF of more new construction).

- Building OO (formerly Building 1 Humanities in the 2020 Unified Master Plan) will increase in size of new construction from 24,500 square feet to 150,000 square feet.

- Existing Buildings UU and VV will be removed and new multi-story parking structure will be constructed to serve approximately 500-600 vehicles. The Gross Square Footage will increase from 73,200 to approximately 175,000 SF.

- Building YY Central Plant will increase new construction by approximately 3,000 GSF to allow for an increase in the capacity of the existing central plant.

- Drought tolerant landscape and hardscape improvements will be made to the existing landscaped areas south and west of Building BB along the Pacific Coast Highway and Orange Avenue.

- In order for the District to meet the state requirements and Executive Order B-18-12 for Zero-Net-Energy, PCC campus will be studied for possible Solar Photovoltaic systems at various locations.

Master Plan Schedule

The 2041 Facilities Master Plan provides an approximate schedule sequence that identifies timelines for construction and project scope. Table 2-5 summarizes the scope of the 2041 Facilities Master Plan Improvements including building renovation, expansion, and/or new construction. To determine the projects and sequencing in the 2041 Facilities Master Plan, the Board of Trustees of the Long Beach Community College District evaluated the District's urgent and critical capital needs, including school and student safety issues, enrollment trends, class size reduction, overcrowding, energy efficiency and computer technology, seismic safety requirements, and aging, outdated or deteriorating school buildings in developing the scope of projects to be funded. In developing the scope of projects, the District has prioritized the key health and safety and sustainability needs so that the most critical school site needs are addressed.

The timing of certain projects will be dependent on the completion of other projects and will ultimately occur over the different phases. For example, landscape improvements will occur across the PCC. However, these improvements will be completed in portions following building construction or renovation. Other projects like this include the security systems installation, technology replacement, energy and water conservation projects, and surface parking improvements.

The Master Plan projects called out the projects identified with the 2041 Facilities Master Plan and the timeframe that is most likely to occur during these time periods. However, the timeframe in which a project is planned may change if the priority characteristics change for an individual project due to program needs or state funding allocation. The general amount of building scope by phase is shown in Table 2-5 for the 2004 Unified Master Plan and in Table 2-6 for the 2041 Facilities Master Plan Updates.

Table 2-6 2041 Facilities Master Plan Construction by Planned Construction Years

Construction Start Year	Projects Planned
Ongoing	Minor Campus Improvements, Infrastructure Projects, Campus Landscaping, District Security Monitoring Systems
To Be Determined	Walkways & Wayfinding, Surface Parking Improvement
2019/2020	Building P2 – Parking Structure, Joint Use Facility
2020/2021	Building MM – Construction Trades Phase 1
2021/2022	Building MM – Construction Trades Phase 2
2022/2023	Building OO - Classroom
2023/2024	Building FF – Demolish Fine Arts/Senior Center

Design Guidelines

The Design Guidelines of the 2004 PCC Master Plan are incorporated by reference into the 2041 Facilities Master Plan. The Design Guidelines include "Guiding Principles" that govern the design of the proposed campus improvements, including buildings, parking areas, landscaping, pavement and courtyards, traffic/circulation, signage, lighting, site furnishings, and screening. According to the Design Guidelines:

- Design objectives and guidelines used for the improvement of the architectural character at the LBCC PCC are based on new construction, rehabilitation of existing buildings, and demolition or removal of obsolete or deteriorated facilities.

- Two design neighborhoods; the original Art Deco neighborhood and the balance of the campus called the "Modern" neighborhood should be considered.

- New facility design should contribute to a unified campus appearance with a consistent architectural character. All future construction in the neighborhood of the original Art Deco (i.e., Buildings, AA, BB, CC, DD, and FF) shall employ a unifying architectural vernacular based on a contemporary interpretation of the original Art Deco style. The Art Deco neighborhood shall include the demolition of Building FF and construction of the new campus entry and drop-off area shall conform to the standards for this neighborhood.

STATEMENT OF PROJECT GOALS AND OBJECTIVES

The District's goal as part of the California Community College system is to offer academic and vocational education to students at the lower college division level. In addition, the District's goal is to

advance California's economic growth and global competitiveness through education, training, and services that contribute to continuous workforce improvement.

The objective of the 2041 Facilities Master Plan is to provide plans to implement proposed necessary construction, renovation, and general capital improvements at the campus in order to meet the District's goals. The improvements are intended to update and improve existing technological and program services in order to meet the increasing needs of students and faculty.

2.4 REQUIRED PERMITS AND APPROVALS

As required by the *CEQA Guidelines*, this section provides, to the extent the information is known to LBCCD, the CEQA Lead Agency, a list of the agencies that are expected to use this IS in their decision making and a list of permits and other approvals required to implement the project.

Lead Agency Approval

The Final SEIR must be certified by the LBCCD Board of Trustees (Board) as to its adequacy in complying with the requirements of CEQA before taking any action on the Proposed Project. The Board will consider the information contained in the SEIR in making a decision to approve or deny the 2041 Facilities Master Plan PCC Improvements that were not previously addressed under the 2020 Unified Master Plan PCC or the 2004 PEIR (Proposed Project). The analysis in the SEIR is intended to provide environmental review for the whole of the Proposed Project, including the project planning, site acquisition, demolition of existing structures, site clearance, site excavation, and construction of school buildings and appurtenant facilities in accordance with CEQA requirements.

Required Permits and Approvals

A Responsible Agency is a public agency, other than the lead agency, that has discretionary approval power over a project. The Responsible Agencies, and their corresponding approvals, for this project include the following:

California Department of General Services

- Division of the State Architect (Approval of architectural plans)

City of Long Beach

- Department of Public Works (Approval of on- and off-site drainage infrastructure and roadway improvements)

Reviewing Agencies

Reviewing Agencies include those agencies that do not have discretionary powers, but that may review the IS for adequacy and accuracy. Potential Reviewing Agencies include the following:

State Agencies

- Department of Transportation (Caltrans)
- Environmental Protection Agency (Cal EPA)

- California Department of Fish and Wildlife (CDFW)

Regional Agencies

- Southern California Association of Governments
- South Coast Air Quality Management District

2.5 CUMULATIVE SCENARIO

Cumulative impacts refer to the combined effect of Proposed Project impacts with the impacts of other past, present and reasonably foreseeable future projects. Both CEQA and the CEQA Guidelines require that cumulative impacts be analyzed in an EIR. As set forth in the CEQA Guidelines, the discussion of cumulative impacts must reflect the severity of the impacts, as well as the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone. As stated in CEQA, "a project may have a significant effect on the environment if the possible effects of a project are individually limited but cumulatively considerable."

According to the CEQA Guidelines:

"Cumulative impacts" refer to two or more individual effects which, when considered together, are considerable and which compound or increase other environmental impacts.

- The individual effects may be changes resulting from a single project or a number of separate projects.

- The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the Proposed Project when added to other closely related past, present, and reasonable foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time."

In addition, as stated in the CEQA Guidelines, it should be noted that:

> "The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the Proposed Project's incremental effects are cumulatively considerable."

Cumulative impact discussions for each issue area are provided in the technical analyses contained within Section 4 – Environmental Impacts.

As previously stated, and as set forth in the CEQA Guidelines, related projects consist of, "closely related, past, present, and reasonable foreseeable probable future projects that would likely result in similar impacts and are located in the same geographic area." An area of influence, defined by an approximate 1.5-mile radius from the Proposed Project site, was utilized in order to capture specific locations of other approved and pending projects. Based on coordination with the City of Long Beach, an area projects list was created. Responses that were received from the city were incorporated in the analysis. A majority of the study area is located in an already highly urbanized area. The ability to develop new major projects within or adjacent to the study area is limited. Thirty pending/approved developments were identified in the City of Long Beach within the study area:

- Alamitos Concession Rebuild Project – western end of Alamitos Beach
- Adult daycare facility – 3311 East Willow Street
- Shoreline Gateway East Tower – 777 East Ocean Boulevard
- New Long Beach Civic Center – north of Ocean Boulevard, south of Broadway, between Magnolia Avenue and Pacific Avenue
- Drake Park Soccer Field – Between Loma Vista Drive and De Forest Avenue/Los Angeles River
- Long Beach Sports Park – south of Spring Street, bounded by California Avenue and Orange Avenue
- New retail/carwash – 4201 East Willow Street
- Ocean Boulevard Project – 1628-1724 Ocean Boulevard
- LBCIC Owned Properties – south of 14th Street between Pacific Avenue and Pine Avenue
- Adaptive Reuse Residential Project – 936 Pine Avenue
- 5-story Residential Development – 507 Pacific Avenue
- Adaptive Reuse Residential Beeks Building – 944 Pacific Avenue
- 7-story Residential Development – 1112 Locust Avenue
- 5-story Residential Development – 425 E. 5th Street
- 8-story Mixed-use Development – 1101 Long Beach Boulevard
- Two 8-story Residential Buildings – 635 Pine Avenue/636 Pacific Avenue
- Silversands – 2010 East Ocean Boulevard
- Broadway Block – Northwest corner of Broadway and Long Beach Boulevard
- Residential Units – 320 Alamitos Avenue
- Residences at Linden Mixed-Use Project – 135 Linden Avenue
- Broadway/Promenade Site – 127-135 E. Broadway
- 7-story Residential Development – 125 Broadway
- Fast food restaurant with drive thru – 2528 N. Lakewood Boulevard
- Pacific Edge Industrial – 2300 Redondo Avenue
- Medical Office Building – 1955 and 1965 Long Beach Boulevard
- 3-story Residential Development – 540-558 E. Willow Street
- Residential Units over Commercial space – 101 Pacific Coast Highway
- Commercial Building Modification – 622 -628 E. Anaheim Street
- Salvation Army Gym – 3012 Long Beach Boulevard
- Commercial Parking Lot and Passive Park – 2600 California Avenue

Seven pending/approved developments were identified by Signal Hill within the study area:

- Crescent Square – northeast corner of Walnut and Crescent Heights Street
- Zinna – 1500 E. Hill Street
- The Courtyard – 19369 Temple Avenue
- Single family residential – 2599 Pacific Coast Highway
- Office Building – 2351 Walnut Avenue
- Industrial Park – 2020 Walnut Avenue
- Honda Expansion – 1500 E. Spring Street

SECTION 3.0 – ENVIRONMENTAL DETERMINATION

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

3.2 DETERMINATION

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 impact" 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. ☒

Signature  Date 2-7-18

SECTION 4.0 – ENVIRONMENTAL IMPACTS

4.1 ORGANIZATION OF ENVIRONMENTAL ANALYSIS

Sections 4.4 through 4.24 provide a discussion of the potential environmental impacts of the Proposed Project. The evaluation of environmental impacts follows the questions provided in the Checklist provided in the CEQA Guidelines and annotated to meet requirements of Title 5 of the California Code of Regulations for school facilities.

4.2 TERMINOLOGY USED IN THIS ANALYSIS

For each question listed in the IS checklist, a determination of the level of significance of the impact is provided. Impacts are categorized in the following categories:

- **No Impact.** A designation of *no impact* is given when no adverse changes in the environment are expected.
- **Less Than Significant Impact.** A *less than significant impact* would cause no substantial adverse change in the environment.
- **Less than Significant Impact with Mitigation**. A *potentially significant (but mitigable) impact* would have a substantial adverse impact on the environment but could be reduced to a less-than-significant level with incorporation of mitigation measure(s).
- **Potentially Significant Impact.** A *significant and unavoidable impact* would cause a substantial adverse effect on the environment and no feasible mitigation measures would be available to reduce the impact to a less-than-significant level.

4.3 EVALUATION OF ENVIRONMENTAL IMPACTS

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 the project (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).

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.

Once the Lead Agency has determined that a particular physical impact may occur the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant.

"Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

"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." Mitigation measures are identified and explain how they reduce the effect to a less than significant level (mitigation measures may be cross-referenced).

Earlier analyses may be used where, pursuant to the PEIR 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 where they are available for review

b) Which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and whether such effects were addressed by mitigation measures based on the earlier analysis

c) The mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project, for effects that are "Less than Significant with Mitigation Measures Incorporated

References and citations have been incorporated into the checklist references to identify information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document, where appropriate, includes a reference to the page or pages where the statement is substantiated. Source listings and other sources used or individuals contacted are cited in the discussion.

The explanation of each issue identifies:

1. The significance criteria or threshold, if any, used to evaluate each question.

2. The mitigation measure identified, if any, to reduce the impact to less than significant.

4.4 AESTHETICS

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑

No Impact. LBCC PCC is located in an urbanized residential area and is a developed site. There are no designated scenic resources on the campus, nor is the campus part of a state, county, or municipally designated scenic vista (City 1975). The opportunities for long distance views are limited. From most directions, the visual horizon is limited by existing man-made features. Primary views of the site are in the immediate area from adjacent streets and land uses. Figures 4-1 and 4-2 show views of the Proposed Project Site from surrounding locations. Overall views from surrounding areas would not be significantly impacted due to the existing surrounding development which currently obscures or limits views to and from the PCC. With the implementation of the Proposed Project, some immediate views of the PCC would be of increased building density; however, the new structures would be consistent visually with the surrounding structures. In addition, implementation of additional landscaping elements will provide a landscape framework that will complement existing buildings and integrate future projects. Therefore, no impact would result, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
b) Would the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☑

No Impact. The Proposed Project Site is not a scenic resource within State scenic highway corridors. PCH, the closest local State highway, is not a designated scenic highway in this area (Caltrans 2017). Therefore, no impact would result, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
c) Would the Project substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☑

No Impact. The visual character of the PCC and surrounding area is that of a fully developed urban corridor, developed with a mix of institutional, commercial, residential, and park uses. Implementation

of the Proposed Project would involve redevelopment and new construction on the PCC. The 2041 Facilities Master Plan PCC Improvements incorporate the design features of the 2004 LBCC PCC Master Plan and the 2020 Unified Master Plan PCC Improvements. The LBCC PCC Master Plan has been developed to support the Long Beach Community College District vision, mission, and values. New design will contribute to a unified campus appearance with a consistent architectural character. Future construction will employ a unifying architectural vernacular, based on contemporary interpretation of the original Art Deco architectural style. The Proposed Project will be designed per the guidelines of the Master Plan to be compatible with the existing PCC structures and to contribute to a unified campus appearance with a consistent architectural character. The construction of buildings consistent with existing architectural style would avoid impacts associated with regulations governing scenic quality.

Figure 4-1
View of PCC looking north from PCH

Figure 4-2
View of PCC looking southwest from corner of Walnut Avenue and E. 20th Street

Development of the Proposed Project would result in the redevelopment or replacement of existing PCC structures and the addition of new structures. The new or replacement structures would be similar in size and mass to the adjacent buildings. The design of the new or replacement structures would incorporate many of the architectural elements of the existing PCC structures and would appear as a continuation of existing background features. The new development would help unify the visual character of the PCC and would be consistent with the existing style and image of the area. Therefore, no impact would result, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
d) Would the Project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☑	☐

Less than Significant Impact. LBCC PCC is an existing source of light in an urbanized area of the City of Long Beach. Sources of illumination on the PCC include street lighting, interior building lighting, lighting in parking lots, and security lighting.

The Proposed Project would provide additional sources of nighttime illumination. Lighting associated with renovated or new buildings would be similar to that of the existing surrounding buildings. Pedestrian lighting will be coordinated with other elements such as signage, security, paving materials, and street furniture. All lighting will be shielded and directed onto the Proposed Project Site. The Proposed Project is not expected to significantly increase the amount of nighttime lighting over the existing conditions and surrounding lighting sources. In addition, the renovation or new construction associated with the 2041 Master Plan would not include building materials that would cause substantial glare that would adversely affect views in the area. Therefore, no significant impact would result, no significant change is anticipated from previous analyses, and no further study of the issue is required.

Further Study Required: Further evaluation of the potential aesthetics impacts is not required.

4.5 AGRICULTURAL AND FORESTRY RESOURCES

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project 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?	☐	☐	☐	☑

No Impact. The PCC is classified as "Urban and Built Up Land" by the California Department of Conservation Farmland Mapping (California Department of Conservation 2016). Since the Proposed Project Site is currently developed, no farmland activities or resources will be converted to non-

agricultural uses. Therefore, no impact would result, no significant change is anticipated from previous analyses, and no further study of the issue is required.

b) Would the Project conflict with existing zoning for agricultural use, or a Williamson Act contract?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact. LBCC PCC has a zoning designation of Institutional and School District. The PCC is not zoned for agricultural use and Williamson Act contracts do not occur on or near the Proposed Project Site. Therefore, no impact would result, no significant change is anticipated from previous analyses, and no further study of the issue is required.

c) Would the Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact. No forest land exists on or around the LBCCD PCC. Implementation of the Proposed Project will have no direct or indirect impact related to timberland conversion. Therefore, no impact would result, no significant change is anticipated from previous analyses, and no further study of the issue is required.

d) Would the Project result in the loss of forest land or conversion of forest land to non-forest use?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact. No forest land exists on or around the LBCCD PCC. Implementation of the Proposed Project will have no direct or indirect impact related to forest land conversion. Therefore, no impact would result, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
e) Would the Project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☑

No Impact. No agricultural or forest land exists on or around the LBCCD PCC. Implementation of the Proposed Project will have no direct or indirect impact related to Farmland or forest land conversion. Therefore, no impact would result, no significant change is anticipated from previous analyses, and no further study of the issue is required.

Further Study Required: Further evaluation of the potential agriculture and forestry impacts is not required.

4.6 AIR QUALITY

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project result in conflict with or obstruct implementation of the applicable air quality plan?	☑	☐	☐	☐

Potentially Significant Impact. A project is deemed inconsistent with air quality plans if it results in population and/or employment growth that exceed growth estimates in the applicable air quality plan. The Proposed Project will not induce growth but will accommodate projected growth in student population. Long-term operational emissions resulting from the Proposed Project may potentially result in exceedance of air quality standards related to the applicable air quality plan. Two types of air pollutant sources are considered in respect to the Proposed Project; stationary and mobile sources. Operational emissions would primarily be generated by mobile sources in the form of vehicle trips. An increase in emissions from stationary sources associated with natural gas and electrical consumption may also result due to the Proposed Project. An air quality study is being prepared and this issue will be analyzed and discussed in the SEIR.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
b) Would the Project violate any air quality standard or result in a cumulatively considerable net increase in an existing or projected air quality violation?	☑	☐	☐	☐

Potentially Significant Impact. The Proposed Project may have a potentially significant impact on air quality standards or contribute substantially to an existing or projected air quality violation. The Proposed Project Site is located in the South Coast Air Basin (SCAB), within the SCAQMD. The SCAQMD has established standards for air quality constituents generated by construction and by operational activities for such pollutants as ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and particulate matter smaller than or equal to 10 microns (PM_{10}). The SCAQMD maintains an extensive air quality-monitoring network to measure criteria pollutant concentrations throughout the SCAB. The SCAB is designated a non-attainment area for O_3, PM_{10}, and particulate matter smaller than or equal to 2.5 microns in diameter ($PM_{2.5}$). The construction and operation of the Proposed Project would contribute to an increase in air pollutant emissions for which the region is in non-attainment.

Construction emissions would be generated by the demolition of existing structures, grading/excavation, construction workers traveling to and from the Proposed Project site, delivery and hauling of construction supplies and debris, fuel combustion by on-site construction equipment, or the application of architectural coatings and other building materials that release emissions. Construction emissions would be short-term in nature and would be limited only to the time period when construction activity is taking place. However, construction related emissions might exceed SCAQMD daily emissions thresholds. Therefore, these temporary construction emissions will be analyzed in the SEIR.

Long-term operational emissions resulting from the Proposed Project may potentially result in exceedance of air quality standards. Two types of air pollutant sources are considered in respect to the Proposed Project; stationary and mobile sources. Operational emissions would primarily be generated by mobile sources in the form of vehicle trips. An increase in emissions from stationary sources associated with natural gas and electrical consumption may also result due to the Proposed Project. An air quality study is being prepared and this issue will be analyzed and discussed in the SEIR.

c) Would the Project expose sensitive receptors to substantial pollutant concentrations?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☑	☐	☐	☐

Potentially Significant Impact. The Proposed Project could potentially create or contribute to a non-stationary source CO "hotspot." A CO hotspot, or areas of high CO concentration, can occur at traffic congested roadway intersections as a result of accumulating vehicle emissions. The SCAQMD has established concentration thresholds to assess Proposed Project impacts associated with CO hotspots that would be created by vehicle trips. This impact will be analyzed in the SEIR.

d) Would the Project result in substantial emissions (such as odors or dust) adversely affecting a substantial number of people?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☑	☐

Less than Significant Impact. Potential sources that may emit odors are from the application of asphalt and paint and diesel-fueled equipment during the construction period and from diesel-fueled trucks during the operation of the facility. Odors generated during construction would be short-term and would not result in long-term impacts to the surrounding area. Therefore, no significant impact would result, no significant change is anticipated from previous analyses, and no further study of the issue is required.

Issues Requiring Further Study. The SEIR will include further study related to conflicts with applicable air quality management plans, short-term construction emissions, long-term operational emissions, a cumulatively considerable net increase of any criteria pollutant, non-stationary source CO hotspot, and exposure of sensitive receptors to substantial pollutant concentrations. Cumulative impacts to global climate change will be further discussed in the SEIR.

4.7 BIOLOGICAL RESOURCES

a) Would the Project have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☑	☐

Less than Significant Impact. The LBCC PCC campus is a developed site and is located in an urbanized area in the City of Long Beach. Campus vegetation is limited to introduced landscaping. There are no known candidates, sensitive or special status species on or around the PCC. Additionally, the Open Space and Recreation Element of the City of Long Beach General Plan does not identify LBCC PCC as open space for the preservation of natural resources (City 2002). Therefore, a less than significant impact would result, no significant change is anticipated from previous analyses, and no further study of the issue is required.

b) Would the Project 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 US Fish and Wildlife Service?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact. LBCC PCC is an existing campus in an urbanized area with introduced landscaping. There is no known riparian habitat or other sensitive natural community on the Proposed Project Site. Since no

wetlands exist on or around the PCC, no adverse effects on any riparian habitat identified in local or regional plans, policies, and regulations or by the CDFW or the U.S. Fish and Wildlife Service will occur. Therefore, no impact would result, no significant change is anticipated from previous analyses, and no further study of the issue is required.

c) Would the Project have a substantially adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filing, hydrological interruption, or other means?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact. LBCC PCC is an existing campus in an urbanized area with introduced landscaping. There are no known wetlands on the site. Therefore, no impact would result, no significant change is anticipated from previous analyses, and no further study of the issue is required.

d) Would the Project 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?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☑	☐

Less than Significant Impact. LBCC PCC is an existing campus in an urbanized area. There are no known native resident or migratory fish or wildlife species, established wildlife corridors, or native wildlife nursery sites on the site. As discussed previously in the SEIR and PEIR, LBCCD intends to avoid the removal of mature ornamental trees, implementation of the Master Plan may require the removal of large trees that could support raptor nesting. As stated previously in the SEIR and PEIR, LBCCD shall attempt to limit removal of mature trees. As part of the Master Plan Best Management Practices (BMPs), if removal is to occur between March 1 through July 30, a survey to identify active raptor nests shall be conducted by a qualified biologist no more than two weeks before the start of construction. Removal of any mature trees with active raptor nests will be delayed until a qualified biologist determines that the subject raptor(s) are no longer nesting or until juveniles have fledged. No significant impact would result, no significant change is anticipated from previous analyses, and no further study of the issue is required.

e) Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

Less than Significant Impact. The Proposed Project will incorporate landscaping improvements. As discussed previously in the SEIR and PEIR, LBCCD intends to avoid the removal of mature ornamental trees; implementation of the Master Plan may require the removal of large trees that could support raptor nesting. As stated previously in the SEIR and PEIR, LBCCD shall attempt to limit removal of mature trees. The City of Long Beach has a Tree Maintenance Policy that applies to planting, maintenance, and removal of street trees located in the public rights-of-way (City 2006). The LBCCD will comply with this Tree Maintenance Policy. The Proposed Project will not conflict with any local policies or ordinances protecting biological resources. Therefore, no impact would result, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
f) Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?	☐	☐	☐	☑

No Impact. No habitat conservation, natural community conservation, or other approved local, regional, or state habitat conservation plans apply to the LBCC PCC. The Proposed Project will not conflict with any habitat conservation plans. Therefore, no impact would result, no significant change is anticipated from previous analyses, and no further study of the issue is required.

Further Study Required: Further evaluation of the potential biological resource impacts is not required.

4.8 CULTURAL RESOURCES

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project cause a substantial adverse change in significance of a historical resource pursuant to State CEQA Section 15064.5?	☐	☐	☑	☐

Less than Significant Impact. A cultural resources memo report was prepared for the PCC and is included in Appendix A of this document (Chambers Group 2017). The memo was prepared to assess potential changes to the Cultural Resources Inventory Report prepared by Chambers Group in 2009 (Chambers Group 2009) and included an updated cultural resources records search/literature review. The memo found the previous survey data to be correct.

In the 2009 study, buildings were surveyed based on a 45-year age threshold by calendar year 2020. Based upon this approach, buildings built in or before 1975 were reviewed (Chambers Group, Inc. 2004). Eleven buildings were old enough to warrant assessment on the LBCCD PCC campus. Findings indicated that the original buildings on the PCC Campus, Buildings AA, BB, CC, DD, FF and GG had been part of Hamilton High School prior to Long Beach City College moving onto the campus in 1949. Additional buildings were then constructed, and subsequent additions and alterations have been made to most of the original structures. The surveyed buildings do not provide for architectural stylistic or artistic

integrity and do not appear to be associated with significant events, themes or persons in history, and the properties are unlikely to yield future information about the past. None of the structures are known to have been directly associated with any persons or events significant to the broad patterns of local, state, or national history. The buildings therefore failed to meet any requirement for eligibility as a historical resource for either California Register of Historical Resources (CRHR) or local register listing.

On November 14, 2017, Chambers Group, Inc. received the results of the updated records search from the South Central Coastal Information Center (SCCIC) housed at the California State University, Fullerton. These results found no historical resources listed or eligible for listing on the CRHR or local register within the project area.

Based on the 2004 and 2017 findings there are no historical resources present within the project area, and therefore the proposed project as planned with have no impact on Historical Resources. No significant change is anticipated from previous analyses, and no further study of the issue is required.

b) Would the Project cause a substantial adverse change in significance of an archaeological resource pursuant to State CEQA Section 15064.5?	Potentially Significant Impact ☐	Less than Significant With Mitigation Incorporation ☑	Less than Significant Impact ☐	No Impact ☐

Less than Significant Impact with Mitigation. The PCC is in an urbanized area that has been previously disturbed by past activities. A Chambers Group archaeologist visited the subject property in 2004 and determined that no open ground was present for a viable archaeological survey due to the presence of buildings, hardscape, and landscaped areas that cover the project area. Results of the 2004 records search and field visit found no archaeological resources present on the PCC campus (Chambers Group 2004). Additionally, the previous results found the area to be heavily disturbed with a considerable amount of fill present due to past development in the area, and therefore found there to be very low potential for buried archaeological materials in the project area (Chambers Group 2004).

On November 14, 2017, Chambers Group, Inc. received the results of the updated records search from the SCCIC housed at the California State University, Fullerton. These results found no archaeological resources within the project area have been identified since the previous assessment in 2004.

Based the 2004 and 2017 findings there are no archaeological resources present within the project area, and little to no potential for buried archaeological deposits based on the past disturbance and development of the campus. However, in the event archaeological resources are uncovered during earth moving construction activities the following measure has been provided to ensure less than significant impacts to archaeological resources.

> **CUL-1:** In the event that a concentration of artifacts or culturally modified soil deposits (including trash pits older than 50 years) should be encountered at any time during ground disturbing activities, all work must stop until a qualified archaeologist views the finds and makes a preliminary evaluation. If warranted, further archaeological work in the discovery area should be performed.

c) Would the Project disturb any human remains, including those interred outside of dedicated cemeteries?	Potentially Significant Impact ☐	Less than Significant With Mitigation Incorporation ☑	Less than Significant Impact ☐	No Impact ☐

Less than Significant Impact with Mitigation. No known human remains are located on the PCC. The PCC is located in an urbanized area previously disturbed by past activities. In addition to the updated records search completed for the 2017 cultural resources memo report, Chambers Group contacted the Native American Heritage Commission (NHAC) to conduct a Sacred Lands File (SLF) search of the project area to determine if resources significant to Native American groups are located within the project area. The NAHC responded that the review of the SLF returned negative results for the project area (Chambers Group 2017). Based on the results of the updated records search, review of historic maps, and the NAHC SLF search conducted for the 2017 cultural resources memo report, there has been no change to the potential for human remains within the project area from the 2009 report. However, in the event human remains are uncovered during earth moving construction activities the following measure has been provided to ensure less than significant impacts to such resources.

> **CUL-2** Although unlikely, if human remains are encountered, all work must stop in the immediate vicinity of the discovery until the County Coroner and a qualified archaeologist evaluate the remains in accordance with California Public Resource Code 5097.98 and Health and Safety code 7050.5.

Further Study Required: Further evaluation of the potential cultural resource impacts is not required.

4.9 ENERGY

a) Would the Project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation?	Potentially Significant Impact ☐	Less than Significant With Mitigation Incorporation ☐	Less than Significant Impact ☑	No Impact ☐

Less Than Significant Impact. The Proposed Project includes the demolition, construction, and/or renovation of buildings located on the PCC. Construction associated with the Proposed Project would result in a temporary increase in energy consumption due to the energy requirements associated with operating construction equipment. All construction activities would implement BMPs to reduce construction related emissions, which would minimize the energy needed to implement the Proposed Project. Additionally, many of the buildings identified in Table 2-4 have inefficient utility and mechanical systems that have been extended well beyond their intended life span. The Proposed Project would implement California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings. Compliance with this regulation would result in PCC buildings that require less electricity, natural gas, and other fuels for operational purposes. Additionally, LBCCD

has adopted strategies to reduce energy consumption. These strategies include, but are not limited to, maximizing energy efficiencies to reduce both electrical consumption and peak demand, and promoting renewable power sources for offsetting peak demand. Therefore, the Proposed Project would result in less than significant impacts associated with wasteful or inefficient energy consumption during construction or operation.

b) Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	Potentially Significant Impact ☐	Less than Significant With Mitigation Incorporation ☐	Less than Significant Impact ☑	No Impact ☐

Less Than Significant Impact. The Proposed Project would comply with California Code of Regulations Title 24, which regulates the amount of energy consumed by new development for heating, cooling, ventilation, and lighting. Additionally, the Proposed Project would implement the District wide strategy of promoting renewable energy sources. Therefore, the Proposed Project would result in less than significant impacts associated with renewable energy or energy efficiency plans.

Further Study Required: Further evaluation of the potential energy impacts is not required.

4.10 GEOLOGY AND SOILS

a) Would the Project directly or indirectly cause 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.	Potentially Significant Impact ☐	Less than Significant With Mitigation Incorporation ☐	Less than Significant Impact ☑	No Impact ☐

Less than Significant Impact. Although the PCC is located within a seismically active region of southern California, the PCC is not located within a state-designated Alquist-Priolo Special Study Zone (City 1988, Figure 2). The Alquist-Priolo Special Study Zone prevents construction of buildings used for human occupancy on the surface trace of active faults. The nearest designated Alquist-Priolo Earthquake Fault Zone is the Newport-Inglewood Fault Zone located approximately 0.5-mile northeast of the Proposed Project site. Construction activities for the Proposed Project will be conducted in accordance with California and City of Long Beach regulations and ordinances pertaining to the mitigation of potential geologic and seismic impacts. Therefore, no significant impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

ii) Strong seismic ground shaking?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☑	☐

Less than Significant Impact. The four main fault systems most likely to cause potentially significant seismic damage in the Proposed Project area are the San Andreas Fault, the Santa Monica-Hollywood/Malibu Coast Fault, the Newport-Inglewood Fault, and the Palos Verdes Fault (City 1988, Figure 6).

Proposed Project design will conform to the standards and requirements of the California Building Code, the Long Beach Municipal Code, and recommendations from Structural Engineers Association of California, including strict compliance with procedures for development in areas of ground shaking and engineered fill. In addition, the Division of State Architect (DSA) will review the Proposed Project Site engineering geology and geotechnical reports and approve plans prior to issuing building permits. Conformance with applicable building and seismic codes will reduce impacts associated with seismic ground shaking to a less than significant level. Therefore, no significant impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

iii) Seismic-related ground failure, including liquefaction?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☑	☐

Less than Significant Impact. Building-specific geotechnical studies have indicated that the PCC campus is located in a liquefaction susceptibility zone (Koury Engineering 2017, Ninyo & Moore 2014). These geotechnical studies include construction recommendations for site-specific geological conditions. Conformance with these recommendations and all applicable building and seismic codes will reduce impacts associated with seismic-related ground failure, including liquefaction to a level of less than significant. Therefore, no significant impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

iv) Landslides?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact. The PCC is not shown on the City of Long Beach Slope Stability Studies Area Map (City 1988, pp 46). The PCC is relatively flat and is not adjacent to a hillside. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

b) Would the Project result in substantial soil erosion or the loss of topsoil?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☑	☐

Less than Significant Impact. The PCC has been previously graded, developed, and paved. Construction activities will involve minimal soil disruption. Conformance with applicable erosion control regulations during construction activities will reduce impacts to a level of less than significant. The Proposed Project would also include BMPs outlined in the PEIR including compliance with SWPPP and SUSMP. Therefore, no significant impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

c) Would the Project 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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☑	☐

Less than Significant Impact. The PCC has been previously graded and developed. Conformance with applicable building and seismic codes and implementation of geotechnical recommendations will reduce impacts associated with unstable geologic units or soils to a level of less than significant. Therefore, no significant impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

d) Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☑	☐

Less than Significant Impact. The PCC has been previously graded and developed. Conformance with applicable building and seismic codes and implementation of geotechnical recommendations will reduce impacts associated with expansive soils to a level of less than significant (Koury Engineering 2017, Ninyo & Moore 2014). Therefore, no significant impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
e) Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☑

No Impact. The PCC relies on sewers for wastewater disposal and would not involve the use of alternative wastewater disposal systems. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☑	☐

Less than Significant Impact. No known paleontological resources are located on the PCC. The PCC is located in an urbanized area previously disturbed by past activities. Furthermore, the 2004 Master Plan defines mitigation measures to reduce any impacts to paleontological resources discovered during construction to less than significant. Additionally, the PCC does not contain any unique geologic features. Therefore, no significant impacts will result from construction activities, no significant change is anticipated from previous analyses, and no further study of the issue is required. The mitigation included in the PEIR for the 2004 Master Plan includes the following:

> **MM PALEO 1 (MM 4.8-1a in PEIR):** Prior to earthmoving that will reach depths of more than 10 feet bgs, a Project paleontologist will be retained by LBCC and will develop a mitigation plan and a discovery clause/treatment plan to be implemented during earthmoving on the Project Site. At a minimum, the treatment plan will require the recovery and subsequent treatment of any fossil remains and associated data uncovered by earthmoving activities. As part of the plan, the Project paleontologist will develop a storage agreement with the Natural History Museum of Los Angeles County, Vertebrate Paleontology Section, San Bernardino County Museum, or another acceptable museum repository to allow for the permanent storage and maintenance of any fossil remains recovered as a result of the mitigation program, and for the archiving of associated specimen data and corresponding geologic and geographic site data at the museum repository.
>
> **MM PALEO-2: (MM 4.8-1b)** The paleontologist and a paleontological construction monitor shall attend a pre-grade meeting to explain the mitigation program to grading contractor staff and to develop procedures and lines of communication to be implemented if fossil remains are uncovered by earthmoving.
>
> **MM PALEO-3: (MM 4.8-1c)** Paleontological monitoring of earthmoving will be conducted by the monitor in areas of the Project Site underlain by previously undisturbed strata that will be disturbed by earthmoving extending 10 feet bgs.

MM PALEO-4: (MM 4.8-1d) If fossil remains are found by the monitor, earthmoving will be diverted temporarily around the fossil site until the remains have been recovered and the monitor agrees to allow earthmoving to proceed.

MM PALEO-5: (MM 4.8-1e) If Pliocene-Pleistocene marine sediments are encountered, up to 6,000 pounds of fossiliferous rock will be recovered from each fossil-bearing site and processed to allow for the recovery of smaller fossil remains.

MM PALEO-5: (MM 4.8-1f) Any recovered fossil remains will be prepared to the point of identification and identified to the lowest taxonomic level possible by knowledgeable paleontologists. The remains then will be curated and catalogued, and associated specimen data and corresponding geologic and geographic site data will be archived at the museum repository by a laboratory technician. The remains then will be accessioned into the museum repository fossil collection, where they will be permanently stored, maintained, and, along with associated specimen and site data, made available for future study by qualified investigators.

MM PALEO-6: (MM 4.8-1g) A final report of findings will be prepared by the paleontologist for submission to LBCC and the museum repository following accessioning of the specimens into the museum repository fossil collection. The report will describe geology/stratigraphy; summarize field and laboratory methods used; include a faunal list and an inventory of curated/catalogued fossil specimens; evaluate the scientific importance of the specimens; and discuss the relationship of any newly recorded fossil site in the parcel to relevant fossil sites previously recorded from other areas.

Further Study Required: Further evaluation of the potential geology and soils impacts is not required.

4.11 GREENHOUSE GAS EMISSIONS

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☑	☐	☐	☐

Potentially Significant Impact. The Proposed Project will generate emissions of greenhouse gases (GHGs) from mobile sources mostly related to the operation of machinery on site associated with demolition, renovation, and construction of new buildings on site. Additionally, the Proposed Project has the potential to generate emission of GHGs from stationary sources related to the operation of buildings and facilities at the LBCC LAC campus. The California Air Resources Board (CARB) has statutory responsibility to maintain a statewide inventory of GHG emissions. The California GHG inventory compiles statewide anthropogenic GHG emissions and sinks. An analysis of GHG emissions from the Proposed Project is being prepared as part of the EIR. The EIR will further analyze impacts related to the generation of GHG emissions.

b) Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☑	☐	☐	☐

Potentially Significant Impact. An analysis of the Proposed Project's impacts on applicable plans, policies, and regulations adopted for the purpose of reducing the emissions of GHGs will be included in the EIR.

Issues Requiring Further Study. The SEIR will include further study related to short-term construction emissions, long-term operational emissions, and GHG emissions, including compliance with plans or policies related to GHG emissions.

4.12 HAZARDS AND HAZARDOUS MATERIALS

a) Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☑	☐

Less than Significant Impact. As discussed in the PCC Master Plan PEIR, asbestos containing materials were found in all permanent buildings except for Building VV or Building WW. Compliance with state and federal law will ensure that, prior to demolition, alteration, or renovation, (1) proper notification is given to the SCAQMD (regulates airborne pollutants) and the local California OSHA office; and (2) the District will certify that asbestos containing materials (ACM's) have been removed or mitigated by a licensed asbestos abatement contractor certified by the State of California Contractors Licensing Board. Because these permitting requirements automatically apply to the Project development, they are considered standard conditions of Project approval that will reduce potential effects to a less than significant level during construction and operation.

The use of hazardous materials (i.e., fuel, cleaning solvents, paint, etc.) during construction activities will be minimal and in compliance with applicable City, State, and Federal regulations. The use of hazardous materials post-construction will include minimal amounts of cleaning solvents and fuel for janitorial purposes and landscaping maintenance. Limited amounts of these types of hazardous materials will be transported or disposed of during routine day-to-day operations. Therefore, no significant impacts are expected and no further study of the issue is required. The mitigation measure included in the 2004 Master Plan PEIR includes the following:

> **MM HAZ-1: (MM 4.10-1 and 2 in the PEIR)** Prior to demolition, alteration, or renovation of structures at LAC, a LBP sampling and analysis survey of buildings and appurtenances will be conducted to assess the presence of LBP. If found, prior to demolition, alteration, or renovation,

the LBP will be removed and disposed of by a licensed LBP abatement contractor certified by the State of California Contractors Licensing Board in compliance with state and federal policy.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
b) Would the Project 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?	☐	☐	☑	☐

Less than Significant Impact. Hazardous or flammable substances that may be used during the construction phase of the Proposed Project would include vehicle fuels and oils for the operation of heavy equipment. Diesel and/or other construction equipment and vehicle fuels would be used; however, the transport, storage, and usage of hazardous materials such as fuels are regulated by the State. The Proposed Project would comply with all State regulations during construction reducing any impacts to be less than significant. Therefore, no significant impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
c) Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☑	☐

Less than Significant Impact. Lincoln Elementary School is located approximately one-half mile south of the PCC. Construction of the Proposed Project will result in the storage and use of minimal amounts of hazardous materials for routine cleaning and landscaping at PCC. The use of hazardous materials (i.e., fuel, cleaning solvents, paint, etc.) during construction activities will be minimal. The Proposed Project would comply with applicable City, State, and Federal regulations reducing any impacts to less than significant. Therefore, no significant impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
d) Would the Project 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?	☐	☐	☐	☑

No Impact. The Proposed Project Site is not included on the list of hazardous material sites compiled by the government (California Department of Toxic Substances Control 2017, California State Water

Resources Control Board 2017). Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?	☐	☐	☐	☑

No Impact. The LBCC PCC is located approximately 1.75 miles southwest of the Long Beach Municipal Airport; however, the PCC is located well outside the 65 dB CNEL contour for the airport. Additionally, The LBCC PCC is not located within any of the nine Runway Protection Zones (RPZ) identified in the ALUP of the Long Beach Municipal Airport. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
f) Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑

No Impact. The Proposed Project will be designed to provide unobstructed access at all times. Permitting requirements require the Long Beach Fire Department and the DSA to perform an Access Compliance review and a Fire and Life Safety review, respectively, prior to approval of the Proposed Project drawings and specification documents. Emergency access will be ensured and the Proposed Project will not interfere with adopted emergency response or evacuation plans. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
g) Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☑

No Impact. The PCC is located in an urbanized area of the City of Long Beach that does not include wildlands or high fire hazard terrain or vegetation. The Proposed Project will not expose persons or structures to the risk of wildland fires during construction or operation. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

Further Study Required: Further evaluation of the potential hazards and hazardous materials impacts is not required.

4.13 HYDROLOGY AND WATER QUALITY

a) Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☑	☐

Less than Significant Impact. Surface water runoff from LBCC PCC is regulated under the City of Long Beach National Pollutant Discharge Elimination System (NPDES) permit (NPDES Permit No. 99-060, CAS004003/CI 8052) for municipal stormwater discharges. Surface water runoff from PCC for construction activities is regulated under the statewide NPDES General Permit for Stormwater Discharges Associated with Construction Activity (General Construction Permit, Order No. 99-08-DWQ; Permit No. CAS000002). Pollutants from construction activities have the potential to enter the LBCC PCC storm drain system. To reduce potential impacts to water quality and to comply with the requirements of the NPDES General Construction Permit, a Stormwater Pollution Prevention Plan (SWPPP) will be prepared. The SWPPP outlines BMPs that prevent such impacts. BMPs would be implemented prior to initiation of construction activities and throughout the duration of construction reducing any impacts to less than significant. Additionally, the PCC is developed and not identified as a groundwater recharge basin. Therefore, no significant impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

b) Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☑	☐

Less than Significant Impact. The Proposed Project is located on a developed site and will not 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. Construction of the Proposed Project will not significantly alter existing groundwater recharge patterns. Therefore, no significant impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

c) Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. Result in substantial erosion or siltation on- or off-site?

Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
☐	☐	☑	☐

Less than Significant Impact. LBCC PCC is an existing campus in an urbanized location. The drainage pattern of the PCC and surrounding area is established and there are no streams or rivers on the PCC. The drainage system for LBCC PCC and the City of Long Beach is also established. Construction activities will conform to regulatory requirements and will not result in substantial erosion or siltation on or off site. Additionally, the Proposed Project would not result in a significant increase in impervious surface on the PCC. Therefore, no significant impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
☐	☐	☑	☐

Less than Significant Impact. The drainage pattern of the PCC and surrounding area is established and there are no streams or rivers on the PCC. The drainage system for LBCC PCC and the City of Long Beach is also established. The Proposed Project would not substantially increase the amount of impervious surface on the PCC. The amount of surface runoff resulting from implementation of the Proposed Project would be similar to the existing condition. Therefore, no significant impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
☐	☐	☑	☐

Less than Significant Impact. Implementation of the Proposed Project will not exceed the capacity of the existing stormwater drainage system or result in additional sources of polluted runoff. As part of implementation of the Proposed Project, improvements will be made to the existing campus drainage system. The District will also prepare a Standard Urban Stormwater Mitigation Plan (SUSMP) for PCC. SUSMP requirements require "treatment" of 85 percent of the total annual runoff. The BMPs identified

in the SUSMP will reduce impacts to water quality to less than significant level. Therefore, no significant impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

iv. Impede or redirect flood flows?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact. The PCC is a developed site and is not located in a Flood Hazard Zone or 100-year or 500-year flood plain (FEMA 2008). Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

d) In flood hazard, tsunami or seiche zones, risk release of pollutants due to project inundation?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact. Seiche is not an assumed hazard in the Proposed Project area. Tsunamis have the potential to impact the coastal area; however, the PCC is located five miles inland and is not located in an inundation or tsunami hazard area (City 1988). Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☑	☐

Less Than Significant Impact. The Regional Water Board's Basin Plan is the applicable water quality control plan for the Proposed Project area. The Basin Plan is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. As mentioned above, the proposed project would comply with the NPDES General Construction Permit, which required the preparation of a SWPPP. The SWPPP outlines BMPs that prevent impacts to water quality. BMPs would be implemented prior to initiation of construction activities and throughout the duration of construction reducing any impacts to less than significant. Additionally, the operation use of the Proposed Project area will remain the same as the existing use and rate and amount of runoff would be substantially similar to existing conditions. Therefore, no significant impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

Further Study Required: Further evaluation of the potential hydrology and water quality impacts is not required.

4.14 LAND USE AND PLANNING

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project physically divide an established community?	☐	☐	☐	☑

No Impact. The Proposed Project is located within an established institutional setting and is a continuation of existing educational uses. The Proposed Project will not physically divide an established community. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
b) Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑

No Impact. The Proposed Project is in conformance with the Land Use Element of the City of Long Beach General Plan's land use designation of "Institutions/Schools." Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

Further Study Required: Further evaluation of the potential land use impacts is not required.

4.15 MINERAL RESOURCES

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project 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?	☐	☐	☐	☑

No Impact. LBCC PCC is located adjacent to the Wilmington Oil Field (LBCCD 2004). There is no extraction of oil on the PCC, and there will be no loss of availability of oil to the region or state. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
c) Would the Project 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?	☐	☐	☐	☑

No Impact. The PCC is not designated as an important mineral resource recovery site in the City of Long Beach General Plan or any other land use plan (City 1973). There is no extraction of mineral resources on the PCC. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

Further Study Required: Further evaluation of the mineral resource impacts is not required.

4.16 NOISE

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☑	☐	☐	☐

Potentially Significant Impact. Construction and operation of the Proposed Project could potentially expose nearby sensitive uses (such as the adjacent residences) to noise levels above established noise standards. The Proposed Project would create noise on a temporary basis during construction due to the use of construction equipment. Permanent operational impacts associated with the redistribution of traffic in the area, and mechanical equipment associated with heating, ventilation, air conditioning, and building operations could also be significant sources of noise. Noise impacts associated with the exposure to or generation of noise levels in excess of standards established by the City of Long Beach are considered potentially significant. Analysis of the Proposed Project's consistency with local noise standards and guidelines based on existing and proposed land uses within and surrounding the sites will be completed. Therefore, this impact will be analyzed in the SEIR.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
b) Would the Project result in generation of excessive groundborne vibration or groundborne noise levels?	☑	☐	☐	☐

Potentially Significant Impact. The Proposed Project may result in generation of groundborne vibration or noise levels. Construction activities typically create an increase in groundborne vibrations and noise levels. Groundborne vibrations and noise generated by construction activities associated with the Proposed Project would increase noise levels intermittently at nearby sensitive receptors. The Caltrans has established groundborne vibration thresholds expressed in Peak Particle Velocity (PPV) for residences and buildings. Therefore, sensitive uses may be subjected to vibration attributable to construction activities in excess of these standards. As such, this impact would be evaluated further in the SEIR.

Issues Requiring Further Study. Issues requiring further study in the SEIR include construction and operation noise impacts, vibration impacts, and potential to expose sensitive receptors to noise above ambient noise levels.

4.17 POPULATION AND HOUSING

a) Would the Project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact. The 2041 Facilities Master Plan identifies capital improvement strategies to accommodate future program needs based on enrollment growth through 2041 and is designed to respond to projected increases in population in the LBCCD through 2041. The Proposed Project will facilitate the Master Plan capital improvements. The PCC Facilities Master Plan does not induce population growth, employment growth, or housing growth. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

b) Would the Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact. There is no removal or addition of housing related to the Proposed Project. The Proposed Project will not result in the displacement of housing or people. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

Further Study Required: No further study of population and housing is required.

4.18 PUBLIC SERVICES

a) Would the Project 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, 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?**	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact. The Long Beach Fire Department serves the LBCC PCC. The closest fire station to the PCC is Fire Station 7, located 0.8-mile northwest. The Proposed Project will be implemented in compliance with applicable state and municipal code requirements that regulate construction, emergency access, water main capacity, fire flows, and fire hydrant capacity and location. The Proposed Project will be designed to provide unobstructed access to the Proposed Project Site at all times. Emergency access will be ensured through an Access Compliance review by the appropriate fire department and a Fire and Life Safety review by the DSA. Existing fire safety compliance will be enforced through established State and municipal project review and permitting procedures. The Proposed Project's compliance with these procedures will ensure that it does not exceed a fire department's ability to provide adequate fire protection and emergency services to the PCC during construction and operation. Therefore, the Proposed Project will not result in short-term or long-term impacts to a fire department's ability to provide fire protection and emergency services to the PCC. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

b) Police Protection?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact. Campus security is provided by the Long Beach Police Department (LBPD) City College Unit (CCU), comprised of a Lieutenant, four police officers, and 13 security officers assigned to both LBCC LAC and PCC. Security is provided 24 hours a day, seven days a week. Proposed Project construction will comply with campus security emergency access, site lighting, and crime prevention requirements and procedures. Compliance with these procedures will ensure that the Proposed Project will not increase the need for police protection services. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

c) Schools?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact. The LBCC PCC Master Plan identifies capital improvement strategies to accommodate future program needs based on enrollment growth through 2041 and is designed to respond to projected increases in population in the LBCCD through 2041. The Proposed Project will facilitate the Master Plan capital improvements and will not induce population growth that would result in long-term impacts to public schools. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

d) Parks?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact. The Proposed Project will facilitate the Master Plan capital improvements and will not induce population growth that would result in long-term impacts to parks. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

e) Other public facilities?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact. The Proposed Project would not result in any impacts to other public facilities. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

Further Study Required: No further study of public services is required.

4.19 RECREATION

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☑	☐

Less than Significant Impact. The Proposed Project will facilitate the Master Plan capital improvements and will not induce population growth that would result in long-term impacts to recreational facilities. Therefore, no significant impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☑	☐

b. Less-than-Significant Impact. The Proposed Project would not require the construction or expansion of recreational facilities. Therefore, no significant impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

Further Study Required: No further study of recreation is required.

4.20 TRANSPORTATION

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project conflict with a plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle lanes, and pedestrian paths?	☑	☐	☐	☐

Potentially Significant Impact. The Proposed Project has no components that will cause conflict or alter adopted policies, plans, or programs supporting alternative transportation; the Proposed Project includes upgrades to the PCC pedestrian and bicycle circulation system. However, implementation of the Proposed Project has the potential to cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system. This could result in a corresponding increase in the volume to capacity ratio on these roadways or increased congestion at intersections and, therefore,

represents a potentially significant impact. The SEIR will document the results of a detailed traffic study, including the analysis of traffic impacts at local intersections and roadway segments and access to the PCC.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
b) For a land use project, would the project conflict or be consistent with CEQA Guidelines section 15064.3, subdivision (b)(1)?	☐	☐	☑	☐

Less Than Significant Impact. The Proposed Project area is located within one-half mile of numerous transit stops. Although the Proposed Project would not likely reduce vehicle miles travelled in the project area compared to existing conditions, the proximity to multiple transit stops would result in a less than significant impact associated with transportation. Therefore, no significant impacts are expected, and no further analysis is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
c) For a transportation project, would the project conflict or be consistent with CEQA Guidelines section 15064.3, subdivision (b)(2)?	☐	☐	☐	☑

No Impact. The Proposed Project is not a transportation project. Therefore, no impacts are expected, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
d) Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☑

No Impact. The PCC is located in a developed urban area characterized by moderate traffic levels. The Proposed Project will involve upgrades and improvements to vehicular and pedestrian access and circulation. The Proposed Project will not pose traffic hazards to motor vehicles, bicyclists, or pedestrians. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
e) Would the Project result in inadequate emergency access?	☐	☐	☐	☑

No Impact. Implementation of the Proposed Project will be designed to provide unobstructed access at all times. Permitting requirements require the Long Beach Fire Department and the DSA to perform an Access Compliance review and a Fire and Life Safety review prior to approval of Proposed Project drawings and specification documents. Therefore, emergency access will be ensured and the Proposed Project will not interfere with adopted emergency response or evacuation plans. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

Further Study Required: Further study of transportation is required and will be addressed in the SEIR.

4.21 TRIBAL CULTURAL RESOURCES

4.21.1 Evaluation

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k),	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact: The LBCC PCC is in an urbanized area that has been previously disturbed by past activities. A Chambers Group archaeologist visited the subject property in 2004 and determined that no open ground was present for viable for archaeological survey due to the presence of buildings, hardscape, and landscaped areas that cover the project area. Results of the 2004 records search and assessment found no previously recorded historical resources (or local register historical resources) present on the PCC campus (Chambers Group 2004).

On November 14, 2017, Chambers Group, Inc. received the results of the updated records search from the SCCIC housed at the California State University, Fullerton. The results with the SCCIC found no listed or eligible for listing CRHR historical resources or local register resources present within the project area. Additionally, a search with the NAHC failed to identify any SLF within the project area.

On December 14, 2017, LBCCD submitted an AB 52 project notification letter to Mr. Anthony Morales (Chief, San Gabriel Band of Mission Indians), which is the only Tribe that has requested notification of projects for this area under AB 52 from LBCCD. The notification letter included project information, location, point of contact for the District, and requested that the Tribe respond within 30 days if they would like to consult on this project. As of January 30, 2018, no response has been received from the

Tribe requesting consultation on the project. The 30-day request for consultation ended January 13, 2018. As a result, AB 52 tribal consultation efforts are considered closed for this project.

Based on the 2004 and 2017 findings there are no tribal cultural resources present within the project area, and little to no potential for buried tribal cultural resources based on the past disturbance and development of the campus. However, in the event tribal cultural resources are uncovered during earth moving construction activities the mitigation measures presented above for cultural resources shall be in effect (CUL-1 and CUL-2).

ii)	A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
		☐	☐	☐	☑

No Impact: The LBCC PCC is in an urbanized area that has been previously disturbed by past activities. A Chambers Group archaeologist visited the subject property in 2004 and determined that no open ground was present for viable for archaeological survey due to the presence of buildings, hardscape, and landscaped areas that cover the project area. Results of the 2004 records search and assessment found no previously recorded cultural resources present on the PCC campus (Chambers Group 2004).

On November 14, 2017, Chambers Group, Inc. received the results of the updated records search from the SCCIC housed at the California State University, Fullerton. The results with the SCCIC found Native American cultural resources recorded within the project area. Additionally, a search with the NAHC SLF search, did not identify any SLFs within the project area.

On December 14, 2017, LBCCD submitted an AB 52 project notification letter to Mr. Anthony Morale (Chief, San Gabriel Band of Mission Indians), which is the only Tribe that has requested notification of projects for this area under AB 52 from LBCCD. The notification letter included project information, location, point of contact for the District, and requested that the Tribe respond within 30 days if they would like to consult on this Proposed Project.

As of January 30, 2018, no response has been received from the Tribe requesting consultation on the Project. The 30-day request for consultation ended January 13, 2018. As a result, AB 52 tribal consultation efforts are considered closed for this Proposed Project.

Therefore, based on the 2004 and 2017 findings there are no tribal cultural resources present within the Project area, and little to no potential for buried tribal cultural resources based on the past disturbance and development of the campus. However, in the event tribal cultural resources are uncovered during earth moving construction activities the mitigation measures presented above for cultural resources shall be in effect (CUL-1 and CUL-2).

Further Study Required: No further study of tribal cultural resources is required.

4.22 UTILITIES AND SERVICE SYSTEMS

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☑

Less Than Significant Impact. The Proposed Project would not be expected to place an undue burden on existing water, wastewater treatment, electric power, natural gas, or telecommunication facilities. The Proposed Project would be developed on a site where the PCC is already established in an urbanized setting. The Proposed Project will not induce growth, but will accommodate a regional growth in population. Such development was taken into account by regional water purveyors and wastewater treatment facilities in their regional planning for upgrading facilities (LBWD 2015, LBWD 2014). Additionally, electric and natural gas utilities are considered on demand utilities and service is provided as needed.

The Proposed Project will involve upgrades to the existing on-site stormwater conveyance system. Short-term impacts to site drainage during construction will be mitigated through the use of BMPs. Long-term impacts will not result to the storm drain system as the Proposed Project will not significantly increase impervious surfaces that would contribute to additional stormwater flow. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
b) Would the Project have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☐	☑

No Impact. The Proposed Project will not induce growth, but will accommodate a regional growth in population for which future water use has been accounted by regional water purveyors (LBWD 2015). Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

c) Would the Project 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?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact. The Proposed Project will not induce growth, but will accommodate a projected growth in student population for which future demand on regional wastewater facilities has been projected by local and regional planning agencies (LBWD 2014). Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

d) Would the Project generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☑	☐

Less than Significant Impact. The Sanitation Districts of Los Angeles County (LACSD) and private waste management collectors and disposal facilities manage solid waste in the county. The LACSD operates a comprehensive solid waste management system that includes three active sanitary landfills, three closed landfills, two materials recovery/transfer stations, three gas-to-energy facilities, a clean-fuel facility, two full-service recycle centers, multiple landfill recycling programs, and, in conjunction with the County's Department of Public Works, an extensive program of household hazardous waste and electronic waste collection round-ups.

The active landfills and the materials recovery/transfer stations receive approximately 19,000 tons of nonhazardous solid waste per day, of which approximately 15,500 tons per day is disposed, with the remainder being reused or recycled. This disposal represents approximately 40 percent of the total solid waste disposed of by the residents and businesses of the county. The remaining 60 percent is disposed of at privately owned landfills. In general, solid waste is hauled directly to Class III landfills, transfer stations, resource recovery centers, and refuse-to-energy facilities.

The Proposed Project will not significantly affect the volume of solid waste. Construction of the Proposed Project would result in the generation of solid waste including scrap lumber, concrete, residual waste, packaging material, plastics, and vegetation. To ensure optimal diversion of solid waste resources by the Proposed Project, the District will require contractors to recycle or salvage nonhazardous waste materials generated during demolition and/or construction, to foster material recovery and reuse, and to minimize disposal in landfills. Furthermore, impacts from construction activities will be short-term and intermittent, and will be mitigated by compliance with existing state solid waste reduction statutes. A less than significant impact to regional landfills is expected to result from the Proposed Project. Therefore, no significant impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

e) Would the Project negatively impact the provision of solid waste services or impair the attainment of	Potentially Significant	Less than Significant With Mitigation	Less than Significant	No

solid waste reduction goals?	Impact	Incorporation	Impact	Impact
	☐	☐	☑	☐

Less Than Significant Impact. As discussed above, construction of the Proposed Project would result in the generation of solid waste including scrap lumber, concrete, residual waste, packaging material, plastics, and vegetation. To ensure optimal diversion of solid waste resources by the Proposed Project, the District will require the contractors to recycle or salvage nonhazardous waste materials generated during demolition and/or construction, to foster material recovery and reuse, and to minimize disposal in landfills. Furthermore, impacts from construction activities will be short-term and intermittent, and will be mitigated by compliance with existing state solid waste reduction statutes. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

f) Would the Project comply with federal, state, and local statutes and regulations related to solid waste?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact. The Proposed Project will comply with all applicable federal, state, and local statutes and regulations relating to solid waste. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

Further Study Required: No further study of utilities is required.

4.23 WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Impair an adopted emergency response plan or emergency evacuation plan?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☐	☐	☑

No Impact. The PCC is not located within a state or locally classified very high fire hazard severity zone (Cal Fire 2007, 2011). Additionally, emergency access will be ensured and the Proposed Project will not

interfere with adopted emergency response or evacuation plans. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☑

No Impact. The PCC is located in an urbanized area of the City of Long Beach that does not include wildlands or high fire hazard terrain or vegetation. Additionally, the Proposed Project area is relatively flat and does not contain perceptible slopes on site. The Proposed Project will not expose occupants to pollutant conversations from a wildfire during construction or operation. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☑

No Impact. The PCC is located in an urbanized area of the City of Long Beach that does not include wildlands or high fire hazard terrain or vegetation. Additionally, the Proposed Project does not include the installation or maintenance of structures associated with fire prevention or control. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☑

No Impact. The PCC is located in an urbanized area of the City of Long Beach that does not include wildlands or high fire hazard terrain or vegetation. Additionally, the Proposed Project area is relatively flat. Therefore, no impacts are expected, no significant change is anticipated from previous analyses, and no further study of the issue is required.

Further Study Required: No further study of risk associated with wildfire is required.

4.24 MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the Project have the potential to substantially 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?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☐	☑	☐	☐

Less than Significant with Mitigation. The Proposed Project site does not contain any sensitive natural resources, which could be disturbed as a result of the Proposed Project. Due to the highly urbanized nature of the Proposed Project area, the Proposed Project would not reduce the habitat of fish and wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or reduce the number or restrict the range of a rare or endangered plant or animal. Additionally, the Proposed Project would not significantly impact examples of the major periods of California history or prehistory with the incorporation of mitigation measures mentioned above. Therefore, no significant impacts are expected with mitigation measures noted above, no significant change is anticipated from previous analyses, and no further study of the issue is required.

b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past Projects, the effects of other current Projects, and the effects of probable future Projects)?	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
	☑	☐	☐	☐

Potentially Significant Impact. Implementation of the Proposed Project would have the potential to have impacts that are individually limited, but cumulatively considerable. Where the Proposed Project would have no impact, specifically with respect to agricultural resources, biological resources, mineral resources, and population and housing, it would not contribute to cumulative impacts. In addition, issues specific to site conditions, such as site geology and soils, do not have cumulative effects. The Proposed Project is not growth inducing; thus, it would not contribute to the cumulative effects of population growth. The incremental effects of the Proposed Project that could contribute to cumulative impacts include air, greenhouse gas emissions, noise, and traffic impacts associated with vehicle trips generated by the project and construction impacts. These issues will be further analyzed in the SEIR, and, subsequently, their cumulative effects will also be analyzed in the SEIR.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
c) Does the Project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☑	☐	☐	☐

Potentially Significant Impact. The Proposed Project could potentially result in environmental effects that may cause adverse effects on human beings with regard to the following environmental areas discussed in this NOP/IS: air quality, greenhouse gases, noise, and traffic. These issues will be studied further in the SEIR.

SECTION 5.0 – SOURCES

California Department of Conservation

2016 Important Farmland in California, Farmland Mapping and Monitoring Program Map http://www.conservation.ca.gov/dlrp/FMMP/Pages/Index.aspx

California Department of Forestry and Fire Protection (Cal Fire)

2007 Los Angeles County Fire Hazard Severity Zone Map. State Responsibility Area.

2011 Los Angeles County Fire Hazard Severity Zone Map. Local Responsibility Area.

California Department of Transportation (Caltrans).

2004 Transportation-and Construction-Induced Vibration Guidance Manual, June 2004.
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California State Water Resources Control Board

2017 http://geotracker.waterboards.ca.gov

Chambers Group Inc.

2017 Cultural Resources Memo Report

City of Long Beach General Plan (City)

1973 Conservation Element

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1988 Seismic Safety Element

1989 Land Use Element

1991 Transportation Element

1996 Air Quality Element

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2002 Open Space and Recreation Element

Koury Engineering

2017 *Phase A Due Diligence Geotechnical Feasibility Study Report – Proposed Parking Structure Long Beach City College, Pacific Coast Campus.* June 23, 2017

Long Beach Community College District (LBCCD)

2004 Long Beach City College Pacific Coast Campus Master Plan
2007 Long Beach City College 2020 Unified Master Plan
2008 Long Beach City College Landscape Master Plan
2017 2041 Facilities Master Plan

Long Beach Water Department

2014 Long Beach Sewer System Management Plan (SSMP) Final Report

2015 Long Beach Water 2015 Urban Water Management Plan

Ninyo & Moore

2014 *Geotechnical Evaluation Long Beach City College Buildings QQ and RR.* July 25, 2014

SECTION 6.0 – REPORT AUTHORS AND CONSULTANTS

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APPENDIX A – CULTURAL RESOURCES MEMO REPORT

MEMO

To: Long Beach Community College District (LBCCD) and Interested Parties

From: Rachael Nixon, MA, RPA

Date: February 5, 2018

RE: Long Beach Community College District 2041 Facilities Master Plan – Pacific Coast Campus Cultural Resources Records Search Update

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In July 2009, Chambers Group, Inc. (Chambers Group) prepared a Cultural Resources Inventory for Liberal Arts and Pacific Coast campuses of Long Beach City College as part of Long Beach Community College District 2020 Unified Master Plan. As part of the report, a cultural resources records search/literature review was conducted on April 6, 2009 at the South Central Coastal Information Center (SCCIC), located at California State University, Fullerton Campus. The purpose of this review was to examine any existing cultural resources survey reports, archaeological site records, and historic maps to determine whether previously documented prehistoric or historic archaeological sites, architectural resources, cultural landscapes, or ethnic resources exist within or near the property. The records search/literature review was also conducted to determine whether any historic properties listed on or determined eligible for listing on the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR) exist within a one-mile radius of property. The following update addresses the Pacific Coast campus.

The results of the 2009 records search indicated that No prior cultural resource surveys or historic or cultural resources were identified within the project area.

An updated records search was conducted on November 11, 2017 at the SCCIC. Based on the results of the updated records search, 43 prior cultural resources reports are located within the 1-mile search radius and five of those reports are located within the project area. 111 cultural resources have been identified within the 1-mile search radius, two prehistoric resource and 109 built environment resources. None of the previously recorded prehistoric or historic resources are located within the project area.

In addition to the updated records search, Chambers Group contacted the Native American Heritage Commission (NHAC) to conduct a Sacred Lands File (SLF) search of the project area to determine if resources significant to Native American groups are located within the project area. In a letter dated November 28, 2017, the NAHC responded that the review of the SLF returned negative results for the project area.

Based on the results of the updated records search and SLF search, there has been no change to the potential for cultural resources within the project area from the 2009 report. Chambers Group recommends that no further cultural resources work is required for this project.

STATE OF CALIFORNIA
NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710

February 12, 2018

Farzam Fathi
Long Beach Community College District
4901 E. Carson Street – G21
Long Beach, CA 90808

Sent via e-mail: CEQA@lbcc.edu

RE: SCH# 2004051061; 2041 Facilities Master Plan Pacific Coast Campus Improvements Project, City of Long Beach; Los Angeles County, California

Dear Mr. Fathi:

The Native American Heritage Commission has received the Notice of Preparation (NOP) for Draft Environmental Impact Report for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code § 21000 et seq.), specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b) (CEQA Guidelines Section 15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared. (Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd. (a)(1) (CEQA Guidelines § 15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a **separate category of cultural resources**, "tribal cultural resources" (Pub. Resources Code § 21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment (Pub. Resources Code § 21084.2). Please reference California Natural Resources Agency (2016) "Final Text for tribal cultural resources update to Appendix G: Environmental Checklist Form," http://resources.ca.gov/ceqa/docs/ab52/Clean-final-AB-52-App-G-text-Submitted.pdf. Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code § 21084.3 (a)). **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. § 800 et seq.) may also apply.

The NAHC recommends **lead agencies consult with all California Native American tribes** that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments. **Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.**

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a **lead agency** shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
    a. A brief description of the project.
    b. The lead agency contact information.
    c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code § 21080.3.1 (d)).
    d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code § 21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A **lead agency** shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code § 21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or environmental impact report. (Pub. Resources Code § 21080.3.1(b)).
    a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18). (Pub. Resources Code § 21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
    a. Alternatives to the project.
    b. Recommended mitigation measures.
    c. Significant effects. (Pub. Resources Code § 21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
    a. Type of environmental review necessary.
    b. Significance of the tribal cultural resources.
    c. Significance of the project's impacts on tribal cultural resources.
    d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code § 21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code § 21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
    a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
    b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code § 21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
    a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
    b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code § 21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code § 21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code section 21084.3 (b). (Pub. Resources Code § 21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
        i. Planning and construction to avoid the resources and protect the cultural and natural context.
        ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        i. Protecting the cultural character and integrity of the resource.
        ii. Protecting the traditional use of the resource.
        iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code § 21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a nonfederally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code § 815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code § 5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An environmental impact report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code § 21082.3 (d)).

    This process should be documented in the Cultural Resources section of your environmental document.

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires **local governments** to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code § 65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code § 65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code section 65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction. (Gov. Code § 65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have been already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.

b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
   a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
   b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

Please contact me if you need any additional information at gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst
(916) 373-3714

cc: State Clearinghouse

Department of Toxic Substances Control

Matthew Rodriquez
Secretary for
Environmental Protection

Barbara A. Lee, Director
5796 Corporate Avenue
Cypress, California 90630

Edmund G. Brown Jr.
Governor

February 28, 2018

Mr. Farzam Fathi
Bond Management Team
Long Beach Community College District
4901 East Carson Street – G21
Long Beach, California 90808
CEQA@lbcc.edu

NOTICE OF PREPARATION (NOP) FOR AN ENVIRONMENTAL IMPACT REPORT (EIR) FOR THE 2041 FACILITIES MASTER PLAN PACIFIC COAST CAMPUS IMPROVEMENTS PROJECT, LONG BEACH COMMUNITY COLLEGE DISTRICT (SCH# 2004051061)

Dear Mr. Fathi:

The Department of Toxic Substances Control (DTSC) has reviewed the subject NOP. The following project description is stated in the NOP: "The 2041 Facilities Master Plan provides updates to the 2020 Unified Master Plan and provides updated construction dates and budgets for the facilities projects. The Proposed Project incorporates the space and building needs identified to the year 2041. The LBCCD 2041 Facilities Master Plan PCC improvements would result in an estimated change over the 2020 Unified Master Plan of a decrease in 10,640 square feet of renovation, an increase of 218,104 square feet of new construction, and 10,640 square feet removed."

Based on the review of the submitted document, DTSC has the following comments:

1. The EIR should identify and determine whether current or historic uses at the project site may have resulted in any release of hazardous wastes/substances. A Phase I Environmental Site Assessment may be appropriate to identify any recognized environmental conditions.

2. If there are any recognized environmental conditions in the project area, then proper investigation, sampling and remedial actions overseen by the appropriate regulatory agencies should be conducted prior to the new development or any construction.

3. If the project plans include discharging wastewater to a storm drain, you may be required to obtain an NPDES permit from the overseeing Regional Water Quality Control Board (RWQCB).

4. If the proposed project involves the demolition of existing structures, lead-based paints or products, mercury, and asbestos containing materials (ACMs) should be addressed in accordance with all applicable and relevant laws and regulations.

5. If the site was used for agricultural or related activities, residual pesticides may be present in onsite soil. DTSC recommends investigation and mitigation, as necessary, to address potential impact to human health and environment from residual pesticides.

6. DTSC recommends evaluation, proper investigation and mitigation, if necessary, of onsite areas with current or historic PCB-containing transformers.

7. If the project development involves soil export/import, proper evaluation is required. If soil contamination is suspected or observed in the project area, then excavated soil should be sampled prior to export/disposal. If the soil is contaminated, it should be disposed of properly in accordance with all applicable and relevant laws and regulations. In addition, if imported soil was used as backfill onsite and/or backfill soil will be imported, DTSC recommends proper evaluation/sampling as necessary to ensure the backfill material is free of contamination.

8. If during construction/demolition of the project, soil and/or groundwater contamination is suspected, construction/demolition in the area should cease and appropriate health and safety procedures should be implemented. If it is determined that contaminated soil and/or groundwater exist, the EIR should identify how any required investigation and/or remediation will be conducted and the appropriate government agency to provide regulatory oversight.

If you have any questions regarding this letter, please contact me at (714) 484-5380 or by email at Johnson.Abraham@dtsc.ca.gov.

Sincerely,

Johnson P. Abraham
Project Manager
Brownfields Restoration and School Evaluation Branch
Site Mitigation and Restoration Program – Cypress

kl/sh/ja

cc: Governor's Office of Planning and Research (via e-mail)
State Clearinghouse
P.O. Box 3044
Sacramento, California 95812-3044
State.clearinghouse@opr.ca.gov

Mr. Dave Kereazis (via e-mail)
Office of Planning & Environmental Analysis
Department of Toxic Substances Control
Dave.Kereazis@dtsc.ca.gov

Mr. Shahir Haddad, Chief (via e-mail)
Brownfields Restoration and School Evaluation Branch
Site Mitigation and Restoration Program - Cypress
Shahir.Haddad@dtsc.ca.gov

CEQA# 2004051061

DEPARTMENT OF TRANSPORTATION
DISTRICT 7- OFFICE OF REGIONAL PLANNING
100 S. MAIN STREET, SUITE 100
LOS ANGELES, CA 90012
PHONE (213) 897-6536
FAX (213) 897-1337
TTY 711
www.dot.ca.gov

Serious Drought.
Making Conservation
a California Way of Life.

March 9, 2018

Farzam Fathi
Long Beach Community College District
4901 E. Carson Street –G21
Long Beach, Ca 90808

RE: 2041 Facilities Master Plan Pacific Coast
SCH#2004051061
GTS#07-LA-2018-01344ME-NOP

Dear Mr. Fathi:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The 2041 Facilities Master Plan provides updates to the 2020 Unified Master Plan and provides updated construction dates and budgets for the facilities projects. The projects incorporate the space and building needs identified to the year 2041.

We note that proposed project may have potentially significant impacts to the state highway system as stated in the documents provided. Please make effort to mitigate direct and cumulative impacts to a level of no significance. In the Spirit of mutual cooperation, Caltrans staff is available to work with your planners and traffic engineers for this project, if needed.

We encourage the Lead Agency to integrate transportation and land use in a way that reduces Vehicle Miles Traveled (VMT) and Greenhouse Gas (GHG) emissions by facilitating the provision of more proximate goods and services to shorten trip lengths, and achieve a high level of non-motorized travel and transit use. We also encourage the Lead Agency to evaluate the potential of Transportation Demand Management (TDM) strategies and Intelligent Transportation System (ITS) applications in order to better manage the transportation network, as well as transit service and bicycle or pedestrian connectivity improvements.

Caltrans looks forward to reviewing the Supplemental Environmental Impact Report containing the detailed traffic study. If you have any questions, please contact project coordinator Ms. Miya Edmonson, at (213) 897-6536 and refer to GTS# LA-2018-01344ME.

Sincerely,

FRANCES LEE
IGR/CEQA Acting Branch Chief

cc: Scott Morgan, State Clearinghouse

APPENDIX B – AIR QUALITY AND GHG MODELING ASSUMPTIONS

AIR QUALITY AND GREENHOUSE GAS MODELING ASSUMPTIONS

LONG BEACH CITY COLLEGE 2041 FACILITIES MASTER PLAN FOR THE PACIFIC COAST CAMPUS IMPROVEMENTS

LONG BEACH COMMUNITY COLLEGE DISTRICT

LEAD AGENCY:
LONG BEACH COMMUNITY COLLEGE DISTRICT

PREPARED BY:
VISTA ENVIRONMENTAL
1021 DIDRIKSON WAY
LAGUNA BEACH, CALIFORNIA 92651
MARISA JUE
GREG TONKOVICH, AICP
TELEPHONE (949) 510-5355
FACSIMILE (949) 494-3150

PROJECT NO. 17053

MARCH 23, 2018

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
Air Basin	South Coast Air Basin
AQMP	Air Quality Management Plan
BACT	Best Available Control Technology
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAT	Climate Action Team
CCAA	California Clean Air Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFCs	chlorofluorocarbons
Cf_4	tetrafluoromethane
C_2F_6	hexafluoroethane
C_2H_6	ethane
CH_4	Methane
City	City of Long Beach
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
CPUC	California Public Utilities Commission
DPM	Diesel particulate matter
EPA	Environmental Protection Agency
EV	Electric vehicle
ºF	Fahrenheit
FTIP	Federal Transportation Improvement Program
GHG	Greenhouse gas
GWP	Global warming potential
HAP	Hazardous Air Pollutants
HFCs	Hydrofluorocarbons

HOV	High occupancy vehicle
IPCC	International Panel on Climate Change
LAC	Language Arts Campus
LBCCD	Long Beach Community College District
LCFS	Low Carbon Fuel Standard
LST	Localized Significant Thresholds
MATES	Multiple Air Toxics Exposure Study
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
MSAT	Mobile Source Air Toxics
MWh	Megawatt-hour
NAAQS	National Ambient Air Quality Standards
NO_x	Nitrogen oxides
NO_2	Nitrogen dioxide
O_3	Ozone
OPR	Office of Planning and Research
Pb	Lead
Pfc	Perfluorocarbons
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PPM	Parts per million
PPB	Parts per billion
PPT	Parts per trillion
RTIP	Regional Transportation Improvement Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SAR	Second Assessment Report
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCAG	Southern California Association of Governments
SCS	Sustainable communities strategy
SF_6	Sulfur Hexafluoride
SIP	State Implementation Plan
SO_x	Sulfur oxides

TAC	Toxic air contaminants
UNFCCC	United Nations' Framework Convention on Climate Change
VOC	Volatile organic compounds

1.0 INTRODUCTION

1.1 Purpose of Report and Study Objectives

This Air Quality and Greenhouse Gas (GHG) Modeling Assumptions Report has been completed to determine the air quality and greenhouse gas (GHG) emissions impacts associated with the proposed Long Beach City College 2041 Facilities Master Plan for the Pacific Coast Campus (PCC) Improvements project (proposed project). The following is provided in this report:

- A description of the proposed project;
- A description of the criteria pollutants and GHGs;
- A description of the construction and operational emissions modeling parameters utilized in the CalEEMod model; and
- The short-term construction related and long-term operational air quality and GHG emissions data as calculated through use of the CalEEMod model.

1.2 Site Location and Study Area

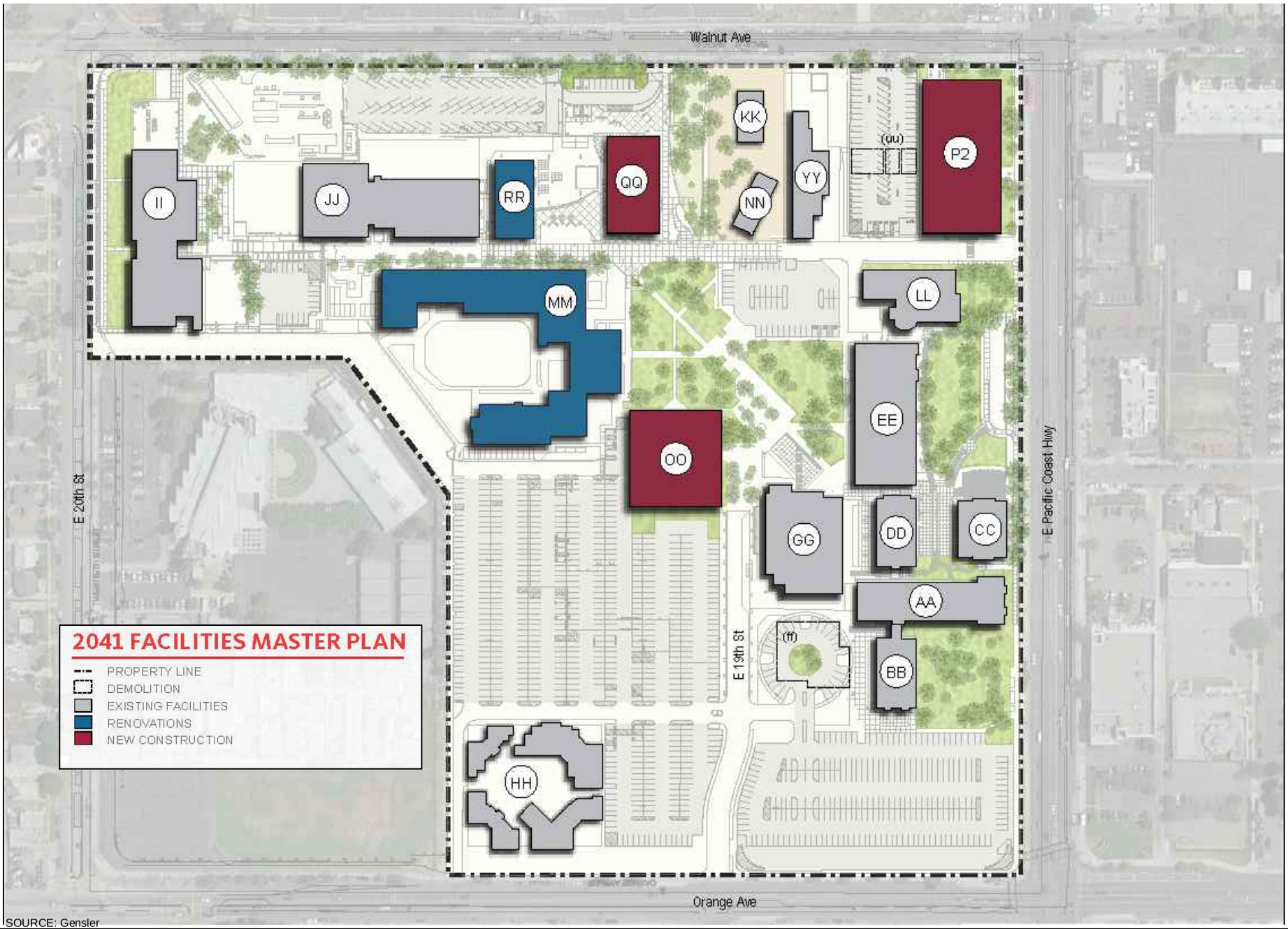
The project site is located in the southern portion of the City of Long Beach (City) on the northwest corner of Pacific Coast Highway and Walnut Avenue. The approximately 30-acre project site is currently developed with the existing Long Beach City College PCC facilities. The PCC is bounded by the Mary Butler School and 20th Street to the north, Walnut Avenue and commercial and recreational uses to the east, Pacific Coast Highway and commercial uses to the south, and Orange Avenue and residential uses to the west.

Sensitive Receptors in Project Vicinity

The nearest sensitive receptors to the project site are single-family homes located approximately 45 feet to the north and 80 feet to the west of the project site. There are also workers and guests at the Days Inn hotel located approximately 90 feet south of the project site on the south side of Pacific Coast Highway. The nearest school to the project site is the Mary Butler School which is located adjacent to the project site.

1.3 Proposed Project Description

The Long Beach Community College District (LBCCD) is proposing the Long Beach City College (LBCC) 2041 Facilities Master Plan for the Pacific Coast Campus (PCC) Improvements. Development of the 2041 Facilities Master Plan would result in the demolition of 44,292-square feet of existing structures, renovation of 20,111-square feet of existing buildings, and construction of 361,561-square feet of new building space. In addition, the student enrollment size is anticipated to increase by 3,279 students by 2041 (Linscott, Law & Greenspan, 2018). The project study area and proposed site plan is shown in Figure 1.



SOURCE: Gensler

VISTA ENVIRONMENTAL

Figure 1
Project Local Study Area and Proposed Site Plan

2.0 AIR POLLUTANTS

Air pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions).

2.1 Criteria Pollutants and Ozone Precursors

The criteria pollutants consist of: ozone, NO_x, CO, SO_x, lead (Pb), and particulate matter (PM). The ozone precursors consist of NO_x and VOC. These pollutants can harm your health and the environment, and cause property damage. The Environmental Protection Agency (EPA) calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants and ozone precursors.

Nitrogen Oxides

Nitrogen Oxides (NOx) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NOx are colorless and odorless, concentrations of NO_2 can often be seen as a reddish-brown layer over many urban areas. NOx form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NO_x are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NOx reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO_2, which cause respiratory problems. NO_x and the pollutants formed from NO_x can be transported over long distances, following the patterns of prevailing winds. Therefore, controlling NOx is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

Ozone

Ozone is not usually emitted directly into the air but in the vicinity of ground-level is created by a chemical reaction between NOx and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents as well as natural sources emit NOx and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Because NOx and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NOx and VOC emissions.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes approximately 56 percent of all CO emissions nationwide. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are indoor sources of CO. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath

a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

Sulfur Oxides

Sulfur Oxide (SOx) gases are formed when fuel containing sulfur, such as coal and oil is burned, as well as from the refining of gasoline. SOx dissolves easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment.

Lead

Lead is a metal found naturally in the environment as well as manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is now the primary source of lead emissions to the air. High levels of lead in the air are typically only found near lead smelters, waste incinerators, utilities, and lead-acid battery manufacturers. Exposure of fetuses, infants and children to low levels of Pb can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

Particulate Matter

Particle matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. PM is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM10) are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter (PM2.5) have been designated as a subset of PM10 due to their increased negative health impacts and its ability to remain suspended in the air longer and travel further.

Volatile Organic Compounds

Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of O_3 are referred to and regulated as VOCs (also referred to as reactive organic gases). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

VOC is not classified as a criteria pollutant, since VOCs by themselves are not a known source of adverse health effects. The primary health effects of VOCs result from the formation of O_3 and its related health

effects. High levels of VOCs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered toxic air contaminants (TACs). There are no separate health standards for VOCs as a group.

2.2 Other Pollutants of Concern

Toxic Air Contaminants

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. TACs is a term that is defined under the California Clean Air Act and consists of the same substances that are defined as Hazardous Air Pollutants (HAPs) in the Federal Clean Air Act. There are over 700 hundred different types of TACs with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least 40 different toxic air contaminants. The most important of these TACs, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to TACs can result from emissions from normal operations as well as from accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

TACs are less pervasive in the urban atmosphere than criteria air pollutants, however they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of TACs with varying degrees of toxicity. Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to *The California Almanac of Emissions and Air Quality 2013 Edition*, the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important of which is DPM. DPM is a subset of PM2.5 because the size of diesel particles are typically 2.5 microns and smaller. The identification of DPM as a TAC in 1998 led the CARB to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in September 2000. The plan's goals are a 75-percent reduction in DPM by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot." Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of DPM as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to DPM is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources.

Asbestos

Asbestos is listed as a TAC by CARB and as a HAP by the EPA. Asbestos occurs naturally in mineral formations and crushing or breaking these rocks, through construction or other means, can release asbestiform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. The nearest likely locations of naturally occurring asbestos, as identified in the *General Location Guide for Ultramafic Rocks in California*, prepared by the California Division of Mines and Geology, is located in Santa Barbara County. The nearest historic asbestos mine to the project site, as identified in the *Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California,* prepared by U.S. Geological Survey, is located at Asbestos Mountain, which is approximately

97 miles southeast of the project site in the San Jacinto Mountains. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

3.0 GREENHOUSE GASES

3.1 Greenhouse Gases

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHGs), play a critical role in the Earth's radiation amount by trapping infrared radiation from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Transportation is responsible for 41 percent of the State's greenhouse gas emissions, followed by electricity generation. Emissions of CO_2 and N_2O are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. The following provides a description of each of the greenhouse gases and their global warming potential.

Water Vapor

Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop." The extent to which this positive feedback loop will continue is unknown as there is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

Carbon Dioxide

The natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid 1700s, each of these activities has increased in scale and distribution. CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC) indicates that concentrations were 379 ppm in 2005, an increase of more than 30 percent. Left unchecked, the IPCC projects that concentration of carbon dioxide in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources. This could result in an average global temperature rise of at least two degrees Celsius or 3.6 degrees Fahrenheit.

Methane

CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO_2, N_2O, and Chlorofluorocarbons (CFCs)). CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide

Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration of this GHG was documented at 314 parts per billion (ppb). N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. N_2O is also commonly used as an aerosol spray propellant (i.e., in whipped cream bottles, in potato chip bags to keep chips fresh, and in rocket engines and race cars).

Chlorofluorocarbons

CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source, but were first synthesized in 1928. They were used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and in 1989 the European Community agreed to ban CFCs by 2000 and subsequent treaties banned CFCs worldwide by 2010. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons

HFCs are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride

Sulfur Hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated; 23,900 times that of CO_2. Concentrations in the

1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Aerosols

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

3.2 Global Warming Potential

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to the reference gas, CO_2. The GHGs listed by the IPCC and the CEQA Guidelines are discussed in this section in order of abundance in the atmosphere. Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic (human-made) sources. To simplify reporting and analysis, GHGs are commonly defined in terms of their GWP. The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO_2e. As such, the GWP of CO_2 is equal to 1. The GWP values used in this analysis are based on the IPCC Second Assessment Report (SAR) and United Nations Framework Convention on Climate Change (UNFCCC) reporting guidelines, and are detailed in Table A. The SAR GWPs are used in CARB's California inventory and Assembly Bill (AB) 32 Scoping Plan estimates.

Table A – Global Warming Potentials, Atmospheric Lifetimes and Abundances of GHGs

Gas	Atmospheric Lifetime (years)[1]	Global Warming Potential (100 Year Horizon)[2]	Atmospheric Abundance
Carbon Dioxide (CO_2)	50-200	1	379 ppm
Methane (CH_4)	9-15	25	1,774 ppb
Nitrous Oxide (N_2O)	114	298	319 ppb
HFC-23	270	14,800	18 ppt
HFC-134a	14	1,430	35 ppt
HFC-152a	1.4	124	3.9 ppt
PFC: Tetrafluoromethane (CF_4)	50,000	7,390	74 ppt
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200	2.9 ppt
Sulfur Hexafluoride (SF_6)	3,200	22,800	5.6 ppt

Notes:
[1] Defined as the half-life of the gas.
[2] Compared to the same quantity of CO_2 emissions and is based on the Intergovernmental Panel On Climate Change (IPCC) 2007 standard, which is utilized in CalEEMod (Version 2016.3.2),that is used in this report (CalEEMod user guide: Appendix A).
Definitions: ppm = parts per million; ppb = parts per billion; ppt = parts per trillion
Source: IPCC 2007, EPA 2015

4.0 MODELING PARAMETERS AND ASSUMPTIONS

4.1 CalEEMod Model Input Parameters

The criteria air pollution and GHG emissions impacts created by the proposed project have been analyzed through use of CalEEMod Version 2016.3.2. CalEEMod is a computer model published by the SCAQMD for estimating air pollutant emissions. The CalEEMod program uses the EMFAC2014 computer program to calculate the emission rates specific for South Coast Air Basin portion of Los Angeles County for employee, vendor and haul truck vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy equipment operations. EMFAC2014 and OFFROAD2011 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour.

The project characteristics in the CalEEMod were set to a project location of the South Coast Air Basin portion of Los Angeles County, a Climate Zone of 9, utility company of Southern California Edison, and the opening year of 2040 was utilized, which is the closest year available to the proposed project's buildout year of 2041 in the CalEEMod model.

Land Use Parameters

The proposed project would consist of the development of 206,672 square feet of junior college land uses for an estimated increase of 3,279 students, a 175,000-square foot parking structure, and 4.12-acres of paved areas, which would include onsite sidewalks, curbs, and parking lots. The proposed project's land use parameters that were entered into the CalEEMod model are shown in Table B.

Table B – CalEEMod Land Use Parameters

Proposed Land Use	Land Use Subtype in CalEEMod	Land Use Size[1]	Lot Acreage[2]	Building/Paving[3] (square feet)
Junior College Facilities	Junior College (2 Years)	3,279 ST	4.68	206,672
Parking Structure	Enclosed Parking Structure with Elevator	175 TSF	2.0	175,000
Paved Areas	Other Non-Asphalt Surfaces	4.12 AC	4.12	179,467

Notes:
[1] ST = Students, TSF = Thousand Square Foot, AC = Acres
[2] Lot acreage calculated based on a total lot acreage of 10.80
[3] Building/Paving square feet represent area where architectural coatings will be applied.

Construction Parameters

Construction activities are anticipated to start at the beginning of 2019 and would occur until buildout of the proposed Facilities Master Plan in 2041. However, in order to provide a conservative analysis, all construction activities were modelled based on occurring over the shortest feasible amount of time that it would take to complete the proposed improvements, if all proposed improvements were to occur concurrently. This was calculated at approximately four years of construction activities.

The construction-related GHG emissions were based on a 30-year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. The phases of construction activities that have been analyzed are detailed below and include: 1) demolition, 2) grading, 3) building construction, 4) application of architectural coatings and 5) paving. As the painting and construction

activities are anticipated to occur simultaneously, the architectural coatings phase was set to the same length as building construction to occur concurrently with the building construction phase.

Demolition

The demolition phase would consist of demolishing approximately 44,292 square feet of existing structures. For the existing structures, CalEEMod utilizes a factor of 0.046 tons of debris of building material per building square foot. Therefore, the demolition of the 44,292 square feet of building space would result in 2,037.43 tons of building debris and would require 201 haul truck trips.

The demolition phase is anticipated to start around January 2019 and was modeled as occurring over 12 weeks. The demolition activities would require 15 worker trips per day. In order to account for water truck emissions, six vendor truck emissions were added to the demolition phase. The onsite equipment would consist of one concrete/industrial saw, two rubber tired dozer, and three excavators, which is based on the CalEEMod default equipment mix. The mitigation of water all exposed areas three times per day was chosen in order to account for the fugitive dust reduction that would occur through adhering to SCAQMD Rule 403, which requires that the Best Available Control Measures be utilized to reduce fugitive dust emissions.

Grading

The grading phase was modelled as occurring after the demolition phase was modelled as occurring over approximately six months. The proposed grading is balanced, which would result in no dirt being imported or exported from the project site. The onsite equipment would consist of one grader, one rubber tired dozer, two excavators, two scrapers, and two tractors, loaders, or backhoes, which is based on the CalEEMod default equipment mix. The grading activities would require 20 worker trips per day. In order to account for water truck emissions, six daily vendor truck trips were added to the grading phase. The mitigation of water all exposed areas three times per day was chosen in order to account for the fugitive dust reduction that would occur through adhering to SCAQMD Rule 403, which requires that the Best Available Control Measures be utilized to reduce fugitive dust emissions.

Building Construction

The building construction was modelled as occurring after the grading phase and was modelled as occurring over approximately 32 months. The building construction would require up to 236 worker trips and 92 vendor trips per day. The onsite equipment would consist of the simultaneous operation of one crane, one generator set, one welder, three forklifts, and three tractors, loaders, or backhoes, which is based on the CalEEMod default equipment mix.

Architectural Coating

The application of architectural coatings was modelled as occurring concurrently with the building construction phase that was modelled as occurring over approximately 32 months. The architectural coating phase was modeled based on covering 310,008 square feet of nonresidential interior area, 103,336 square feet of nonresidential exterior area, and 21,268 square feet of parking area that includes striping of parking lots, painting of signs, and other architectural coatings in public areas. The architectural coating phase would require up to 15 worker trips per day. The onsite equipment would consist of one air compressor, which is based on the CalEEMod default equipment mix.

Paving

The paving was modelled as occurring after the building construction and architectural coating phases. The paving activities was modeled as occurring over 12 weeks and would require up to 47 worker trips

per day. The onsite equipment would consist of the simultaneous operation of two pavers, two paving equipment, and two rollers, which is based on the CalEEMod default equipment mix.

Operational Emissions Modeling

The operations-related criteria air pollutant emissions and GHG emissions created by the proposed project have been analyzed through use of the CalEEMod model. The proposed project was analyzed in the CalEEMod model based on the land use parameters provided above.

Mobile Sources

Mobile sources include emissions the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been obtained from the *Traffic Impact Analysis Report LBCCD 2041 Master Plan Pacific Coast Campus Long Beach, California* (Traffic Impact Analysis), prepared by Linscott, Law & Greenspan, Engineers, January 19, 2018. The Traffic Impact Analysis found that implementation of the proposed project would result in an increase of approximately 3,279 students at the PCC campus and a trip generation rate of 1.15 two-way trips per student at the junior college and of 0.0 daily trips at the proposed parking structure was used in the CalEEMod Model. This resulted in a total of 3,771 daily trips generated by the proposed project. No other changes were made to the CalEEMod default mobile source parameters.

Area Sources

Area sources include emissions from consumer products, landscape equipment and architectural coatings. The area source emissions were based on the on-going use of the proposed junior college, parking structure, and paved areas in the CalEEMod model. No changes were made to the default area source parameters in the CalEEMod model.

Energy Usage

Energy usage includes emissions from electricity and natural gas used onsite. The energy usage was based on the ongoing use of the proposed junior college, parking structure, and paved areas in the CalEEMod Model. No changes were made to the default energy usage parameters in the CalEEMod model.

Solid Waste

Waste includes the GHG emissions associated with the processing of waste from the proposed project as well as the GHG emissions from the waste once it is interred into a landfill. The analysis was based on the default CalEEMod waste generation rates of 598.42 tons of solid waste per year from the proposed project. No changes were made to the default solid waste parameters or mitigation measures in the CalEEMod model.

Water and Wastewater

Water includes the water used for the interior of the building as well as for landscaping and is based on the GHG emissions associated with the energy used to transport and filter the water. The analysis was based on the default CalEEMod water usage rate of 7,020,667 gallons per year of indoor water usage and 10,981,043 gallons per year of outdoor water usage. No changes were made to the default water and wastewater parameters in the CalEEMod model.

5.0 MODELING RESULTS

5.1 Criteria Pollutant Emissions

The following section calculates the potential air emissions associated with the construction and operations of the proposed project. The CalEEMod model has been utilized to calculate the construction-related and operational regional emissions based on the input parameters detailed above in Section 4.1.

Construction Emissions

The worst-case summer or winter daily construction-related criteria pollutant emissions from the proposed project for each phase of construction activities are shown below in Table C and the CalEEMod daily printouts are shown in Appendix A. Since it is anticipated that building construction and architectural coating activities would occur concurrently, Table C shows the combined criteria pollutant emissions from the building construction and architectural coating phases of construction.

Table C – Construction-Related Regional Criteria Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Demolition[1]						
Onsite[2]	3.51	35.78	22.06	0.04	2.08	1.71
Offsite[3]	0.14	1.80	1.13	0.01	0.27	0.08
Total	**3.65**	**37.58**	**23.19**	**0.05**	**2.35**	**1.79**
Grading[1]						
Onsite	4.74	54.52	33.38	0.06	5.77	3.59
Offsite	0.14	0.78	1.15	0.00	0.27	0.08
Total	**4.88**	**55.30**	**34.53**	**0.06**	**6.04**	**3.67**
Building Construction & Architectural Coating						
Onsite	5.62	22.91	19.01	0.03	1.42	1.34
Offsite	1.97	11.81	16.47	0.06	3.85	1.10
Total	**7.58**	**34.73**	**35.48**	**0.09**	**5.27**	**2.44**
Paving						
Onsite	1.10	11.12	14.58	0.02	0.57	0.52
Offsite	0.07	0.04	0.56	0.00	0.17	0.05
Total	**1.17**	**11.16**	**15.14**	**0.02**	**0.74**	**0.57**
SCQAMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] Demolition and Grading based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403.
[2] Onsite emissions from equipment not operated on public roads.
[3] Offsite emissions from vehicles operating on public roads.
Source: CalEEMod Version 2016.3.2.

Operational Emissions

The worst-case summer or winter VOC, NOx, CO, SO_2, PM10, and PM2.5 daily emissions created from the proposed project's long-term operations have been calculated and are summarized below in Table D and the CalEEMod daily emissions printouts are shown in Appendix A.

Table D – Operational Regional Criteria Pollutant Emissions

	Pollutant Emissions (pounds/day)					
Activity	**VOC**	**NOx**	**CO**	**SO_2**	**PM10**	**PM2.5**
Area Sources[1]	4.80	0.00	0.35	0.00	0.00	0.00
Energy Usage[2]	0.17	1.50	1.26	0.01	0.11	0.11
Mobile Sources[3]	3.17	20.41	40.78	0.23	24.32	6.57
Total Emissions	**8.14**	**21.91**	**42.39**	**0.24**	**24.43**	**6.68**
SCQAMD Operational Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.
[2] Energy usage consist of emissions from natural gas usage (excluding hearths).
[3] Mobile sources consist of emissions from vehicles and road dust.
Source: Calculated from CalEEMod Version 2016.3.2.

5.2 Generation of Greenhouse Gas Emissions

The project's GHG emissions have been calculated with the CalEEMod model based on the construction and operational parameters detailed in Section 4.1 above. A summary of the results is shown below in Table E and the CalEEMod model run annual printouts are provided in Appendix B.

Table E – Project Related Greenhouse Gas Annual Emissions

	Greenhouse Gas Emissions (Metric Tons per Year)			
Category	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Area Sources[1]	0.09	0.00	0.00	0.09
Energy Usage[2]	1,066.65	0.04	0.01	1,071.17
Mobile Sources[3]	2,913.95	0.11	0.00	2,916.75
Solid Waste[4]	121.47	7.18	0.00	300.95
Water and Wastewater[5]	70.23	0.23	0.01	77.80
Construction[6]	33.83	0.01	0.00	33.92
Total 2040 Emissions	4,206.22	7.57	0.02	**4,400.68**
Service Population				**3,279**
Metric Tons CO_2e per Service Population				**1.34**
SCAQMD Draft Threshold of Significance (Metric Tons CO_2e per Service Population)				**4.1**
Quantitative Metric Tons CO_2e Threshold				**13,443.90**

Notes:
[1] Area sources consist of GHG emissions from consumer products, architectural coatings, and landscaping equipment.
[2] Energy usage consists of GHG emissions from electricity and natural gas usage.
[3] Mobile sources consist of GHG emissions from vehicles.
[4] Waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.
[5] Water includes GHG emissions from electricity used for transport of water and processing of wastewater.
[6] Construction emissions amortized over 30 years as recommended in the SCAQMD GHG Working Group on November 19, 2009.
Source: CalEEMod Version 2016.3.2.

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APPENDIX A

CalEEMod Model Daily Printouts

LBCC PCC

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior College (2Yr)	3,279.00	Student	4.68	206,672.00	0
Other Non-Asphalt Surfaces	4.12	Acre	4.12	179,467.20	0
Unenclosed Parking with Elevator	175.00	1000sqft	2.00	175,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

LBCC PCC - Los Angeles-South Coast County, Summer

Project Characteristics - Opening Year 2041

Land Use - 3,279 stu Junior College; 175 tsf Unenclosed Parking with Elevator; 4.12 ac Other Non-Asphalt Surfaces.

Construction Phase - 60 days Demo, 90 days Grading, 674 days Building Construction to occur concurrent with 674 days of Painting, 60 days Paving

Grading -

Demolition - 44,292 square feet of building space x 0.046 tons of debris/SF = 2,037.43 tons of demolition debris

Trips and VMT - In order to account for water trucks, 6 vendor trips added to Demolition and Grading.

Vehicle Trips - Weekday trip rate of 1.15 trips/day to Junior College obtained from TIA.

Energy Use -

Construction Off-road Equipment Mitigation - Per SCAQMD Rule 403 minimum requirements, water exposure 3x per day selected.

LBCC PCC - Los Angeles-South Coast County, Summer

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	674.00
tblConstructionPhase	NumDays	300.00	674.00
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	30.00	90.00
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	PhaseEndDate	7/13/2020	2/27/2022
tblConstructionPhase	PhaseEndDate	5/18/2020	2/27/2022
tblConstructionPhase	PhaseEndDate	1/28/2019	3/25/2019
tblConstructionPhase	PhaseEndDate	3/25/2019	7/29/2019
tblConstructionPhase	PhaseEndDate	6/15/2020	5/23/2022
tblConstructionPhase	PhaseStartDate	6/16/2020	7/30/2019
tblConstructionPhase	PhaseStartDate	3/26/2019	7/30/2019
tblConstructionPhase	PhaseStartDate	2/12/2019	3/26/2019
tblConstructionPhase	PhaseStartDate	5/19/2020	3/1/2022
tblLandUse	LandUseSquareFeet	143,135.69	206,672.00
tblLandUse	LotAcreage	3.29	4.68
tblLandUse	LotAcreage	4.02	2.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblVehicleTrips	WD_TR	1.23	1.15

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	7.4124	55.2880	35.4755	0.0884	8.9353	2.3890	11.3243	3.6669	2.1981	5.8649	0.0000	8,870.7794	8,870.7794	1.9617	0.0000	8,894.2141
2020	6.9804	31.5827	33.6350	0.0872	3.7523	1.3005	5.0527	1.0085	1.2297	2.2382	0.0000	8,711.5377	8,711.5377	0.9051	0.0000	8,734.1655
2021	6.6013	28.7250	32.1264	0.0859	3.7523	1.0965	4.8488	1.0085	1.0364	2.0449	0.0000	8,586.4324	8,586.4324	0.8793	0.0000	8,608.4142
2022	6.2983	26.2717	30.9027	0.0845	3.7523	0.9315	4.6837	1.0085	0.8810	1.8895	0.0000	8,452.0077	8,452.0077	0.8600	0.0000	8,473.5064
Maximum	**7.4124**	**55.2880**	**35.4755**	**0.0884**	**8.9353**	**2.3890**	**11.3243**	**3.6669**	**2.1981**	**5.8649**	**0.0000**	**8,870.7794**	**8,870.7794**	**1.9617**	**0.0000**	**8,894.2141**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	7.4124	55.2880	35.4755	0.0884	3.7522	2.3890	6.0336	1.4730	2.1981	3.6710	0.0000	8,870.7794	8,870.7794	1.9617	0.0000	8,894.2141
2020	6.9804	31.5827	33.6350	0.0872	3.7523	1.3005	5.0527	1.0085	1.2297	2.2382	0.0000	8,711.5377	8,711.5377	0.9051	0.0000	8,734.1655
2021	6.6013	28.7250	32.1264	0.0859	3.7523	1.0965	4.8488	1.0085	1.0364	2.0449	0.0000	8,586.4324	8,586.4324	0.8793	0.0000	8,608.4142
2022	6.2983	26.2717	30.9027	0.0845	3.7523	0.9315	4.6837	1.0085	0.8810	1.8895	0.0000	8,452.0077	8,452.0077	0.8600	0.0000	8,473.5064
Maximum	**7.4124**	**55.2880**	**35.4755**	**0.0884**	**3.7523**	**2.3890**	**6.0336**	**1.4730**	**2.1981**	**3.6710**	**0.0000**	**8,870.7794**	**8,870.7794**	**1.9617**	**0.0000**	**8,894.2141**

	ROG	NOx	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**	**25.67**	**0.00**	**20.42**	**32.78**	**0.00**	**18.23**	**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	4.8017	3.1500e-003	0.3508	3.0000e-005		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003		0.7568	0.7568	1.9500e-003		0.8056
Energy	0.1654	1.5033	1.2628	9.0200e-003		0.1143	0.1143		0.1143	0.1143		1,803.9251	1,803.9251	0.0346	0.0331	1,814.6450
Mobile	3.1692	20.2854	40.7758	0.2297	24.2282	0.0950	24.3231	6.4824	0.0884	6.5707		23,626.4797	23,626.4797	0.8736		23,648.3193
Total	**8.1362**	**21.7918**	**42.3893**	**0.2387**	**24.2282**	**0.2105**	**24.4386**	**6.4824**	**0.2039**	**6.6862**		**25,431.1617**	**25,431.1617**	**0.9101**	**0.0331**	**25,463.7698**

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	4.8017	3.1500e-003	0.3508	3.0000e-005		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003		0.7568	0.7568	1.9500e-003		0.8056
Energy	0.1654	1.5033	1.2628	9.0200e-003		0.1143	0.1143		0.1143	0.1143		1,803.9251	1,803.9251	0.0346	0.0331	1,814.6450
Mobile	3.1692	20.2854	40.7758	0.2297	24.2282	0.0950	24.3231	6.4824	0.0884	6.5707		23,626.4797	23,626.4797	0.8736		23,648.3193
Total	**8.1362**	**21.7918**	**42.3893**	**0.2387**	**24.2282**	**0.2105**	**24.4386**	**6.4824**	**0.2039**	**6.6862**		**25,431.1617**	**25,431.1617**	**0.9101**	**0.0331**	**25,463.7698**

	ROG	NOx	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	1/1/2019	3/25/2019	5	60	
2	Grading	Grading	3/26/2019	7/29/2019	5	90	
3	Building Construction	Building Construction	7/30/2019	2/27/2022	5	674	
4	Paving	Paving	3/1/2022	5/23/2022	5	60	
5	Architectural Coating	Architectural Coating	7/30/2019	2/27/2022	5	674	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 225

Acres of Paving: 6.12

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 310,008; Non-Residential Outdoor: 103,336; Striped Parking Area: 21,268 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45

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	6	15.00	6.00	201.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	236.00	92.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	47.00	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 - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7267	0.0000	0.7267	0.1100	0.0000	0.1100			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697		3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.7267**	**1.7949**	**2.5216**	**0.1100**	**1.6697**	**1.7797**		**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

3.2 Demolition - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0315	1.0261	0.2188	2.6800e-003	0.0586	3.7700e-003	0.0623	0.0161	3.6000e-003	0.0197		289.6114	289.6114	0.0200		290.1101
Vendor	0.0249	0.6944	0.1843	1.5700e-003	0.0384	4.4300e-003	0.0428	0.0111	4.2300e-003	0.0153		167.2888	167.2888	0.0107		167.5568
Worker	0.0749	0.0551	0.7233	1.8300e-003	0.1677	1.4500e-003	0.1691	0.0445	1.3300e-003	0.0458		181.9429	181.9429	6.2500e-003		182.0992
Total	**0.1313**	**1.7755**	**1.1263**	**6.0800e-003**	**0.2646**	**9.6500e-003**	**0.2743**	**0.0716**	**9.1600e-003**	**0.0808**		**638.8431**	**638.8431**	**0.0369**		**639.7660**

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					0.2834	0.0000	0.2834	0.0429	0.0000	0.0429			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697	0.0000	3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.2834**	**1.7949**	**2.0783**	**0.0429**	**1.6697**	**1.7126**	**0.0000**	**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

3.2 Demolition - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0315	1.0261	0.2188	2.6800e-003	0.0586	3.7700e-003	0.0623	0.0161	3.6000e-003	0.0197		289.6114	289.6114	0.0200		290.1101
Vendor	0.0249	0.6944	0.1843	1.5700e-003	0.0384	4.4300e-003	0.0428	0.0111	4.2300e-003	0.0153		167.2888	167.2888	0.0107		167.5568
Worker	0.0749	0.0551	0.7233	1.8300e-003	0.1677	1.4500e-003	0.1691	0.0445	1.3300e-003	0.0458		181.9429	181.9429	6.2500e-003		182.0992
Total	**0.1313**	**1.7755**	**1.1263**	**6.0800e-003**	**0.2646**	**9.6500e-003**	**0.2743**	**0.0716**	**9.1600e-003**	**0.0808**		**638.8431**	**638.8431**	**0.0369**		**639.7660**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920		6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**8.6733**	**2.3827**	**11.0560**	**3.5965**	**2.1920**	**5.7885**		**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.0249	0.6944	0.1843	1.5700e-003	0.0384	4.4300e-003	0.0428	0.0111	4.2300e-003	0.0153		167.2888	167.2888	0.0107		167.5568
Worker	0.0999	0.0734	0.9643	2.4400e-003	0.2236	1.9300e-003	0.2255	0.0593	1.7800e-003	0.0611		242.5906	242.5906	8.3300e-003		242.7989
Total	**0.1248**	**0.7678**	**1.1486**	**4.0100e-003**	**0.2620**	**6.3600e-003**	**0.2683**	**0.0704**	**6.0100e-003**	**0.0764**		**409.8794**	**409.8794**	**0.0191**		**410.3557**

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					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920	0.0000	6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**3.3826**	**2.3827**	**5.7653**	**1.4026**	**2.1920**	**3.5947**	**0.0000**	**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.0249	0.6944	0.1843	1.5700e-003	0.0384	4.4300e-003	0.0428	0.0111	4.2300e-003	0.0153		167.2888	167.2888	0.0107		167.5568
Worker	0.0999	0.0734	0.9643	2.4400e-003	0.2236	1.9300e-003	0.2255	0.0593	1.7800e-003	0.0611		242.5906	242.5906	8.3300e-003		242.7989
Total	**0.1248**	**0.7678**	**1.1486**	**4.0100e-003**	**0.2620**	**6.3600e-003**	**0.2683**	**0.0704**	**6.0100e-003**	**0.0764**		**409.8794**	**409.8794**	**0.0191**		**410.3557**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3823	10.6471	2.8251	0.0241	0.5890	0.0679	0.6569	0.1696	0.0649	0.2345		2,565.0945	2,565.0945	0.1644		2,569.2040
Worker	1.1790	0.8665	11.3791	0.0288	2.6379	0.0228	2.6607	0.6996	0.0210	0.7206		2,862.5688	2,862.5688	0.0983		2,865.0269
Total	**1.5613**	**11.5136**	**14.2042**	**0.0528**	**3.2269**	**0.0906**	**3.3175**	**0.8692**	**0.0859**	**0.9551**		**5,427.6633**	**5,427.6633**	**0.2627**		**5,434.2309**

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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3823	10.6471	2.8251	0.0241	0.5890	0.0679	0.6569	0.1696	0.0649	0.2345		2,565.0945	2,565.0945	0.1644		2,569.2040
Worker	1.1790	0.8665	11.3791	0.0288	2.6379	0.0228	2.6607	0.6996	0.0210	0.7206		2,862.5688	2,862.5688	0.0983		2,865.0269
Total	**1.5613**	**11.5136**	**14.2042**	**0.0528**	**3.2269**	**0.0906**	**3.3175**	**0.8692**	**0.0859**	**0.9551**		**5,427.6633**	**5,427.6633**	**0.2627**		**5,434.2309**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3272	9.7863	2.5641	0.0239	0.5890	0.0461	0.6350	0.1696	0.0441	0.2136		2,548.6272	2,548.6272	0.1555		2,552.5153
Worker	1.0861	0.7726	10.3331	0.0279	2.6379	0.0221	2.6600	0.6996	0.0203	0.7199		2,775.6264	2,775.6264	0.0875		2,777.8141
Total	**1.4133**	**10.5589**	**12.8972**	**0.0517**	**3.2269**	**0.0681**	**3.2950**	**0.8692**	**0.0644**	**0.9336**		**5,324.2536**	**5,324.2536**	**0.2430**		**5,330.3294**

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3272	9.7863	2.5641	0.0239	0.5890	0.0461	0.6350	0.1696	0.0441	0.2136		2,548.6272	2,548.6272	0.1555		2,552.5153
Worker	1.0861	0.7726	10.3331	0.0279	2.6379	0.0221	2.6600	0.6996	0.0203	0.7199		2,775.6264	2,775.6264	0.0875		2,777.8141
Total	**1.4133**	**10.5589**	**12.8972**	**0.0517**	**3.2269**	**0.0681**	**3.2950**	**0.8692**	**0.0644**	**0.9336**		**5,324.2536**	**5,324.2536**	**0.2430**		**5,330.3294**

3.4 Building Construction - 2021

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.4 Building Construction - 2021

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	0.2796	8.9322	2.3351	0.0237	0.5890	0.0183	0.6073	0.1696	0.0175	0.1871		2,528.9018	2,528.9018	0.1490		2,532.6264
Worker	1.0116	0.6954	9.5055	0.0270	2.6379	0.0213	2.6592	0.6996	0.0196	0.7192		2,687.4969	2,687.4969	0.0792		2,689.4765
Total	**1.2913**	**9.6276**	**11.8406**	**0.0506**	**3.2269**	**0.0396**	**3.2665**	**0.8692**	**0.0371**	**0.9063**		**5,216.3987**	**5,216.3987**	**0.2282**		**5,222.1029**

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.4 Building Construction - 2021

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	0.2796	8.9322	2.3351	0.0237	0.5890	0.0183	0.6073	0.1696	0.0175	0.1871		2,528.9018	2,528.9018	0.1490		2,532.6264
Worker	1.0116	0.6954	9.5055	0.0270	2.6379	0.0213	2.6592	0.6996	0.0196	0.7192		2,687.4969	2,687.4969	0.0792		2,689.4765
Total	**1.2913**	**9.6276**	**11.8406**	**0.0506**	**3.2269**	**0.0396**	**3.2665**	**0.8692**	**0.0371**	**0.9063**		**5,216.3987**	**5,216.3987**	**0.2282**		**5,222.1029**

3.4 Building Construction - 2022

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.4 Building Construction - 2022

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	0.2625	8.4944	2.2094	0.0234	0.5890	0.0160	0.6050	0.1696	0.0153	0.1849		2,506.8702	2,506.8702	0.1439		2,510.4667
Worker	0.9476	0.6281	8.7698	0.0260	2.6379	0.0207	2.6586	0.6996	0.0190	0.7186		2,592.9611	2,592.9611	0.0716		2,594.7502
Total	**1.2101**	**9.1225**	**10.9792**	**0.0495**	**3.2269**	**0.0366**	**3.2636**	**0.8692**	**0.0343**	**0.9035**		**5,099.8312**	**5,099.8312**	**0.2154**		**5,105.2169**

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.4 Building Construction - 2022

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	0.2625	8.4944	2.2094	0.0234	0.5890	0.0160	0.6050	0.1696	0.0153	0.1849		2,506.8702	2,506.8702	0.1439		2,510.4667
Worker	0.9476	0.6281	8.7698	0.0260	2.6379	0.0207	2.6586	0.6996	0.0190	0.7186		2,592.9611	2,592.9611	0.0716		2,594.7502
Total	**1.2101**	**9.1225**	**10.9792**	**0.0495**	**3.2269**	**0.0366**	**3.2636**	**0.8692**	**0.0343**	**0.9035**		**5,099.8312**	**5,099.8312**	**0.2154**		**5,105.2169**

3.5 Paving - 2022

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.5 Paving - 2022

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	0.0399	0.5574	1.6500e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		164.8069	164.8069	4.5500e-003		164.9206
Total	**0.0602**	**0.0399**	**0.5574**	**1.6500e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**164.8069**	**164.8069**	**4.5500e-003**		**164.9206**

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.5 Paving - 2022

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	0.0399	0.5574	1.6500e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		164.8069	164.8069	4.5500e-003		164.9206
Total	**0.0602**	**0.0399**	**0.5574**	**1.6500e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**164.8069**	**164.8069**	**4.5500e-003**		**164.9206**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.9888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**3.2552**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2348	0.1726	2.2662	5.7300e-003	0.5254	4.5300e-003	0.5299	0.1393	4.1700e-003	0.1435		570.0879	570.0879	0.0196		570.5774
Total	**0.2348**	**0.1726**	**2.2662**	**5.7300e-003**	**0.5254**	**4.5300e-003**	**0.5299**	**0.1393**	**4.1700e-003**	**0.1435**		**570.0879**	**570.0879**	**0.0196**		**570.5774**

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	2.9888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**3.2552**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2348	0.1726	2.2662	5.7300e-003	0.5254	4.5300e-003	0.5299	0.1393	4.1700e-003	0.1435		570.0879	570.0879	0.0196		570.5774
Total	**0.2348**	**0.1726**	**2.2662**	**5.7300e-003**	**0.5254**	**4.5300e-003**	**0.5299**	**0.1393**	**4.1700e-003**	**0.1435**		**570.0879**	**570.0879**	**0.0196**		**570.5774**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.9888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**3.2309**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2163	0.1539	2.0579	5.5500e-003	0.5254	4.3900e-003	0.5297	0.1393	4.0500e-003	0.1434		552.7731	552.7731	0.0174		553.2087
Total	**0.2163**	**0.1539**	**2.0579**	**5.5500e-003**	**0.5254**	**4.3900e-003**	**0.5297**	**0.1393**	**4.0500e-003**	**0.1434**		**552.7731**	**552.7731**	**0.0174**		**553.2087**

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	2.9888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**3.2309**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2163	0.1539	2.0579	5.5500e-003	0.5254	4.3900e-003	0.5297	0.1393	4.0500e-003	0.1434		552.7731	552.7731	0.0174		553.2087
Total	**0.2163**	**0.1539**	**2.0579**	**5.5500e-003**	**0.5254**	**4.3900e-003**	**0.5297**	**0.1393**	**4.0500e-003**	**0.1434**		**552.7731**	**552.7731**	**0.0174**		**553.2087**

3.6 Architectural Coating - 2021

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	2.9888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**3.2077**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

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	0.2015	0.1385	1.8930	5.3700e-003	0.5254	4.2400e-003	0.5296	0.1393	3.9100e-003	0.1432		535.2218	535.2218	0.0158		535.6161
Total	**0.2015**	**0.1385**	**1.8930**	**5.3700e-003**	**0.5254**	**4.2400e-003**	**0.5296**	**0.1393**	**3.9100e-003**	**0.1432**		**535.2218**	**535.2218**	**0.0158**		**535.6161**

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	2.9888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**3.2077**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

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	0.2015	0.1385	1.8930	5.3700e-003	0.5254	4.2400e-003	0.5296	0.1393	3.9100e-003	0.1432		535.2218	535.2218	0.0158		535.6161
Total	**0.2015**	**0.1385**	**1.8930**	**5.3700e-003**	**0.5254**	**4.2400e-003**	**0.5296**	**0.1393**	**3.9100e-003**	**0.1432**		**535.2218**	**535.2218**	**0.0158**		**535.6161**

3.6 Architectural Coating - 2022

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	2.9888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**3.1933**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

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	0.1887	0.1251	1.7465	5.1800e-003	0.5254	4.1100e-003	0.5295	0.1393	3.7900e-003	0.1431		516.3948	516.3948	0.0143		516.7511
Total	**0.1887**	**0.1251**	**1.7465**	**5.1800e-003**	**0.5254**	**4.1100e-003**	**0.5295**	**0.1393**	**3.7900e-003**	**0.1431**		**516.3948**	**516.3948**	**0.0143**		**516.7511**

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	2.9888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**3.1933**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

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	0.1887	0.1251	1.7465	5.1800e-003	0.5254	4.1100e-003	0.5295	0.1393	3.7900e-003	0.1431		516.3948	516.3948	0.0143		516.7511
Total	**0.1887**	**0.1251**	**1.7465**	**5.1800e-003**	**0.5254**	**4.1100e-003**	**0.5295**	**0.1393**	**3.7900e-003**	**0.1431**		**516.3948**	**516.3948**	**0.0143**		**516.7511**

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	3.1692	20.2854	40.7758	0.2297	24.2282	0.0950	24.3231	6.4824	0.0884	6.5707		23,626.4797	23,626.4797	0.8736		23,648.3193
Unmitigated	3.1692	20.2854	40.7758	0.2297	24.2282	0.0950	24.3231	6.4824	0.0884	6.5707		23,626.4797	23,626.4797	0.8736		23,648.3193

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior College (2Yr)	3,770.85	1,377.18	131.16	8,786,045	8,786,045
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	3,770.85	1,377.18	131.16	8,786,045	8,786,045

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 College (2Yr)	16.60	8.40	6.90	6.40	88.60	5.00	92	7	1
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unenclosed Parking with	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Junior College (2Yr)	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810
Other Non-Asphalt Surfaces	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810
Unenclosed Parking with Elevator	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

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	0.1654	1.5033	1.2628	9.0200e-003		0.1143	0.1143		0.1143	0.1143		1,803.9251	1,803.9251	0.0346	0.0331	1,814.6450
NaturalGas Unmitigated	0.1654	1.5033	1.2628	9.0200e-003		0.1143	0.1143		0.1143	0.1143		1,803.9251	1,803.9251	0.0346	0.0331	1,814.6450

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 College (2Yr)	15333.4	0.1654	1.5033	1.2628	9.0200e-003		0.1143	0.1143		0.1143	0.1143		1,803.9251	1,803.9251	0.0346	0.0331	1,814.6450
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1654**	**1.5033**	**1.2628**	**9.0200e-003**		**0.1143**	**0.1143**		**0.1143**	**0.1143**		**1,803.9251**	**1,803.9251**	**0.0346**	**0.0331**	**1,814.6450**

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 College (2Yr)	15.3334	0.1654	1.5033	1.2628	9.0200e-003		0.1143	0.1143		0.1143	0.1143		1,803.9251	1,803.9251	0.0346	0.0331	1,814.6450
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1654**	**1.5033**	**1.2628**	**9.0200e-003**		**0.1143**	**0.1143**		**0.1143**	**0.1143**		**1,803.9251**	**1,803.9251**	**0.0346**	**0.0331**	**1,814.6450**

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	4.8017	3.1500e-003	0.3508	3.0000e-005		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003		0.7568	0.7568	1.9500e-003		0.8056
Unmitigated	4.8017	3.1500e-003	0.3508	3.0000e-005		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003		0.7568	0.7568	1.9500e-003		0.8056

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5519					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.2177					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0321	3.1500e-003	0.3508	3.0000e-005		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003		0.7568	0.7568	1.9500e-003		0.8056
Total	**4.8017**	**3.1500e-003**	**0.3508**	**3.0000e-005**		**1.2400e-003**	**1.2400e-003**		**1.2400e-003**	**1.2400e-003**		**0.7568**	**0.7568**	**1.9500e-003**		**0.8056**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5519					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.2177					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0321	3.1500e-003	0.3508	3.0000e-005		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003		0.7568	0.7568	1.9500e-003		0.8056
Total	**4.8017**	**3.1500e-003**	**0.3508**	**3.0000e-005**		**1.2400e-003**	**1.2400e-003**		**1.2400e-003**	**1.2400e-003**		**0.7568**	**0.7568**	**1.9500e-003**		**0.8056**

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 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

LBCC PCC

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior College (2Yr)	3,279.00	Student	4.68	206,672.00	0
Other Non-Asphalt Surfaces	4.12	Acre	4.12	179,467.20	0
Unenclosed Parking with Elevator	175.00	1000sqft	2.00	175,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

LBCC PCC - Los Angeles-South Coast County, Winter

Project Characteristics - Opening Year 2041

Land Use - 3,279 stu Junior College; 175 tsf Unenclosed Parking with Elevator; 4.12 ac Other Non-Asphalt Surfaces.

Construction Phase - 60 days Demo, 90 days Grading, 674 days Building Construction to occur concurrent with 674 days of Painting, 60 days Paving

Grading -

Demolition - 44,292 square feet of building space x 0.046 tons of debris/SF = 2,037.43 tons of demolition debris

Trips and VMT - In order to account for water trucks, 6 vendor trips added to Demolition and Grading.

Vehicle Trips - Weekday trip rate of 1.15 trips/day to Junior College obtained from TIA.

Energy Use -

Construction Off-road Equipment Mitigation - Per SCAQMD Rule 403 minimum requirements, water exposure 3x per day selected.

LBCC PCC - Los Angeles-South Coast County, Winter

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	674.00
tblConstructionPhase	NumDays	300.00	674.00
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	30.00	90.00
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	PhaseEndDate	7/13/2020	2/27/2022
tblConstructionPhase	PhaseEndDate	5/18/2020	2/27/2022
tblConstructionPhase	PhaseEndDate	1/28/2019	3/25/2019
tblConstructionPhase	PhaseEndDate	3/25/2019	7/29/2019
tblConstructionPhase	PhaseEndDate	6/15/2020	5/23/2022
tblConstructionPhase	PhaseStartDate	6/16/2020	7/30/2019
tblConstructionPhase	PhaseStartDate	3/26/2019	7/30/2019
tblConstructionPhase	PhaseStartDate	2/12/2019	3/26/2019
tblConstructionPhase	PhaseStartDate	5/19/2020	3/1/2022
tblLandUse	LandUseSquareFeet	143,135.69	206,672.00
tblLandUse	LotAcreage	3.29	4.68
tblLandUse	LotAcreage	4.02	2.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblVehicleTrips	WD_TR	1.23	1.15

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	7.5823	55.2968	34.6412	0.0858	8.9353	2.3891	11.3244	3.6669	2.1981	5.8650	0.0000	8,601.0078	8,601.0078	1.9619	0.0000	8,624.5484
2020	7.1390	31.6799	32.8565	0.0846	3.7523	1.3012	5.0535	1.0085	1.2304	2.2389	0.0000	8,447.4422	8,447.4422	0.9092	0.0000	8,470.1720
2021	6.7516	28.7957	31.3975	0.0834	3.7523	1.0971	4.8494	1.0085	1.0370	2.0455	0.0000	8,328.8614	8,328.8614	0.8834	0.0000	8,350.9465
2022	6.4425	26.3290	30.2208	0.0821	3.7523	0.9320	4.6843	1.0085	0.8815	1.8900	0.0000	8,201.3398	8,201.3398	0.8641	0.0000	8,222.9420
Maximum	**7.5823**	**55.2968**	**34.6412**	**0.0858**	**8.9353**	**2.3891**	**11.3244**	**3.6669**	**2.1981**	**5.8650**	**0.0000**	**8,601.0078**	**8,601.0078**	**1.9619**	**0.0000**	**8,624.5484**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	7.5823	55.2968	34.6412	0.0858	3.7522	2.3891	6.0336	1.4730	2.1981	3.6711	0.0000	8,601.0078	8,601.0078	1.9619	0.0000	8,624.5484
2020	7.1390	31.6799	32.8565	0.0846	3.7523	1.3012	5.0535	1.0085	1.2304	2.2389	0.0000	8,447.4422	8,447.4422	0.9092	0.0000	8,470.1720
2021	6.7516	28.7957	31.3975	0.0834	3.7523	1.0971	4.8494	1.0085	1.0370	2.0455	0.0000	8,328.8614	8,328.8614	0.8834	0.0000	8,350.9465
2022	6.4425	26.3290	30.2208	0.0821	3.7523	0.9320	4.6843	1.0085	0.8815	1.8900	0.0000	8,201.3398	8,201.3398	0.8641	0.0000	8,222.9420
Maximum	**7.5823**	**55.2968**	**34.6412**	**0.0858**	**3.7523**	**2.3891**	**6.0336**	**1.4730**	**2.1981**	**3.6711**	**0.0000**	**8,601.0078**	**8,601.0078**	**1.9619**	**0.0000**	**8,624.5484**

	ROG	NOx	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**	**25.67**	**0.00**	**20.42**	**32.78**	**0.00**	**18.22**	**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	4.8017	3.1500e-003	0.3508	3.0000e-005		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003		0.7568	0.7568	1.9500e-003		0.8056
Energy	0.1654	1.5033	1.2628	9.0200e-003		0.1143	0.1143		0.1143	0.1143		1,803.9251	1,803.9251	0.0346	0.0331	1,814.6450
Mobile	3.0918	20.4145	38.9709	0.2191	24.2282	0.0952	24.3234	6.4824	0.0886	6.5710		22,556.6981	22,556.6981	0.8851		22,578.8245
Total	**8.0588**	**21.9209**	**40.5845**	**0.2282**	**24.2282**	**0.2107**	**24.4388**	**6.4824**	**0.2041**	**6.6865**		**24,361.3800**	**24,361.3800**	**0.9216**	**0.0331**	**24,394.2750**

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	4.8017	3.1500e-003	0.3508	3.0000e-005		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003		0.7568	0.7568	1.9500e-003		0.8056
Energy	0.1654	1.5033	1.2628	9.0200e-003		0.1143	0.1143		0.1143	0.1143		1,803.9251	1,803.9251	0.0346	0.0331	1,814.6450
Mobile	3.0918	20.4145	38.9709	0.2191	24.2282	0.0952	24.3234	6.4824	0.0886	6.5710		22,556.6981	22,556.6981	0.8851		22,578.8245
Total	**8.0588**	**21.9209**	**40.5845**	**0.2282**	**24.2282**	**0.2107**	**24.4388**	**6.4824**	**0.2041**	**6.6865**		**24,361.3800**	**24,361.3800**	**0.9216**	**0.0331**	**24,394.2750**

	ROG	NOx	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	1/1/2019	3/25/2019	5	60	
2	Grading	Grading	3/26/2019	7/29/2019	5	90	
3	Building Construction	Building Construction	7/30/2019	2/27/2022	5	674	
4	Paving	Paving	3/1/2022	5/23/2022	5	60	
5	Architectural Coating	Architectural Coating	7/30/2019	2/27/2022	5	674	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 225

Acres of Paving: 6.12

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 310,008; Non-Residential Outdoor: 103,336; Striped Parking Area: 21,268 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45

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	6	15.00	6.00	201.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	236.00	92.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	47.00	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 - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7267	0.0000	0.7267	0.1100	0.0000	0.1100			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697		3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.7267**	**1.7949**	**2.5216**	**0.1100**	**1.6697**	**1.7797**		**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

3.2 Demolition - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0323	1.0397	0.2336	2.6300e-003	0.0586	3.8400e-003	0.0624	0.0161	3.6700e-003	0.0197		284.6996	284.6996	0.0207		285.2173
Vendor	0.0260	0.6953	0.2031	1.5300e-003	0.0384	4.5000e-003	0.0429	0.0111	4.3000e-003	0.0154		162.7663	162.7663	0.0114		163.0521
Worker	0.0831	0.0610	0.6637	1.7200e-003	0.1677	1.4500e-003	0.1691	0.0445	1.3300e-003	0.0458		171.3196	171.3196	5.8900e-003		171.4670
Total	**0.1413**	**1.7960**	**1.1004**	**5.8800e-003**	**0.2646**	**9.7900e-003**	**0.2744**	**0.0716**	**9.3000e-003**	**0.0809**		**618.7855**	**618.7855**	**0.0380**		**619.7364**

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					0.2834	0.0000	0.2834	0.0429	0.0000	0.0429			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697	0.0000	3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.2834**	**1.7949**	**2.0783**	**0.0429**	**1.6697**	**1.7126**	**0.0000**	**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

3.2 Demolition - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0323	1.0397	0.2336	2.6300e-003	0.0586	3.8400e-003	0.0624	0.0161	3.6700e-003	0.0197		284.6996	284.6996	0.0207		285.2173
Vendor	0.0260	0.6953	0.2031	1.5300e-003	0.0384	4.5000e-003	0.0429	0.0111	4.3000e-003	0.0154		162.7663	162.7663	0.0114		163.0521
Worker	0.0831	0.0610	0.6637	1.7200e-003	0.1677	1.4500e-003	0.1691	0.0445	1.3300e-003	0.0458		171.3196	171.3196	5.8900e-003		171.4670
Total	**0.1413**	**1.7960**	**1.1004**	**5.8800e-003**	**0.2646**	**9.7900e-003**	**0.2744**	**0.0716**	**9.3000e-003**	**0.0809**		**618.7855**	**618.7855**	**0.0380**		**619.7364**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920		6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**8.6733**	**2.3827**	**11.0560**	**3.5965**	**2.1920**	**5.7885**		**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.0260	0.6953	0.2031	1.5300e-003	0.0384	4.5000e-003	0.0429	0.0111	4.3000e-003	0.0154		162.7663	162.7663	0.0114		163.0521
Worker	0.1108	0.0813	0.8850	2.2900e-003	0.2236	1.9300e-003	0.2255	0.0593	1.7800e-003	0.0611		228.4262	228.4262	7.8600e-003		228.6226
Total	**0.1368**	**0.7766**	**1.0880**	**3.8200e-003**	**0.2620**	**6.4300e-003**	**0.2684**	**0.0704**	**6.0800e-003**	**0.0764**		**391.1924**	**391.1924**	**0.0193**		**391.6747**

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					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920	0.0000	6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**3.3826**	**2.3827**	**5.7653**	**1.4026**	**2.1920**	**3.5947**	**0.0000**	**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.0260	0.6953	0.2031	1.5300e-003	0.0384	4.5000e-003	0.0429	0.0111	4.3000e-003	0.0154		162.7663	162.7663	0.0114		163.0521
Worker	0.1108	0.0813	0.8850	2.2900e-003	0.2236	1.9300e-003	0.2255	0.0593	1.7800e-003	0.0611		228.4262	228.4262	7.8600e-003		228.6226
Total	**0.1368**	**0.7766**	**1.0880**	**3.8200e-003**	**0.2620**	**6.4300e-003**	**0.2684**	**0.0704**	**6.0800e-003**	**0.0764**		**391.1924**	**391.1924**	**0.0193**		**391.6747**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3987	10.6614	3.1140	0.0234	0.5890	0.0690	0.6580	0.1696	0.0660	0.2356		2,495.7494	2,495.7494	0.1753		2,500.1325
Worker	1.3069	0.9596	10.4424	0.0271	2.6379	0.0228	2.6607	0.6996	0.0210	0.7206		2,695.4287	2,695.4287	0.0927		2,697.7469
Total	**1.7056**	**11.6210**	**13.5564**	**0.0505**	**3.2269**	**0.0917**	**3.3186**	**0.8692**	**0.0870**	**0.9561**		**5,191.1781**	**5,191.1781**	**0.2681**		**5,197.8794**

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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3987	10.6614	3.1140	0.0234	0.5890	0.0690	0.6580	0.1696	0.0660	0.2356		2,495.7494	2,495.7494	0.1753		2,500.1325
Worker	1.3069	0.9596	10.4424	0.0271	2.6379	0.0228	2.6607	0.6996	0.0210	0.7206		2,695.4287	2,695.4287	0.0927		2,697.7469
Total	**1.7056**	**11.6210**	**13.5564**	**0.0505**	**3.2269**	**0.0917**	**3.3186**	**0.8692**	**0.0870**	**0.9561**		**5,191.1781**	**5,191.1781**	**0.2681**		**5,197.8794**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3421	9.7843	2.8279	0.0232	0.5890	0.0468	0.6358	0.1696	0.0448	0.2143		2,478.9314	2,478.9314	0.1658		2,483.0755
Worker	1.2060	0.8554	9.4639	0.0262	2.6379	0.0221	2.6600	0.6996	0.0203	0.7199		2,613.5121	2,613.5121	0.0824		2,615.5715
Total	**1.5481**	**10.6397**	**12.2918**	**0.0495**	**3.2269**	**0.0688**	**3.2958**	**0.8692**	**0.0651**	**0.9343**		**5,092.4435**	**5,092.4435**	**0.2481**		**5,098.6470**

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3421	9.7843	2.8279	0.0232	0.5890	0.0468	0.6358	0.1696	0.0448	0.2143		2,478.9314	2,478.9314	0.1658		2,483.0755
Worker	1.2060	0.8554	9.4639	0.0262	2.6379	0.0221	2.6600	0.6996	0.0203	0.7199		2,613.5121	2,613.5121	0.0824		2,615.5715
Total	**1.5481**	**10.6397**	**12.2918**	**0.0495**	**3.2269**	**0.0688**	**3.2958**	**0.8692**	**0.0651**	**0.9343**		**5,092.4435**	**5,092.4435**	**0.2481**		**5,098.6470**

3.4 Building Construction - 2021

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.4 Building Construction - 2021

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	0.2936	8.9138	2.5831	0.0230	0.5890	0.0189	0.6079	0.1696	0.0180	0.1876		2,459.5788	2,459.5788	0.1588		2,463.5484
Worker	1.1253	0.7697	8.6908	0.0254	2.6379	0.0213	2.6592	0.6996	0.0196	0.7192		2,530.5126	2,530.5126	0.0745		2,532.3742
Total	**1.4189**	**9.6835**	**11.2739**	**0.0484**	**3.2269**	**0.0402**	**3.2671**	**0.8692**	**0.0377**	**0.9068**		**4,990.0914**	**4,990.0914**	**0.2332**		**4,995.9226**

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.4 Building Construction - 2021

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	0.2936	8.9138	2.5831	0.0230	0.5890	0.0189	0.6079	0.1696	0.0180	0.1876		2,459.5788	2,459.5788	0.1588		2,463.5484
Worker	1.1253	0.7697	8.6908	0.0254	2.6379	0.0213	2.6592	0.6996	0.0196	0.7192		2,530.5126	2,530.5126	0.0745		2,532.3742
Total	**1.4189**	**9.6835**	**11.2739**	**0.0484**	**3.2269**	**0.0402**	**3.2671**	**0.8692**	**0.0377**	**0.9068**		**4,990.0914**	**4,990.0914**	**0.2332**		**4,995.9226**

3.4 Building Construction - 2022

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.4 Building Construction - 2022

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	0.2756	8.4713	2.4451	0.0228	0.5890	0.0165	0.6055	0.1696	0.0158	0.1854		2,437.7266	2,437.7266	0.1532		2,441.5567
Worker	1.0569	0.6951	8.0046	0.0245	2.6379	0.0207	2.6586	0.6996	0.0190	0.7186		2,441.5839	2,441.5839	0.0672		2,443.2646
Total	**1.3325**	**9.1664**	**10.4496**	**0.0473**	**3.2269**	**0.0371**	**3.2641**	**0.8692**	**0.0348**	**0.9040**		**4,879.3105**	**4,879.3105**	**0.2204**		**4,884.8213**

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.4 Building Construction - 2022

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	0.2756	8.4713	2.4451	0.0228	0.5890	0.0165	0.6055	0.1696	0.0158	0.1854		2,437.7266	2,437.7266	0.1532		2,441.5567
Worker	1.0569	0.6951	8.0046	0.0245	2.6379	0.0207	2.6586	0.6996	0.0190	0.7186		2,441.5839	2,441.5839	0.0672		2,443.2646
Total	**1.3325**	**9.1664**	**10.4496**	**0.0473**	**3.2269**	**0.0371**	**3.2641**	**0.8692**	**0.0348**	**0.9040**		**4,879.3105**	**4,879.3105**	**0.2204**		**4,884.8213**

3.5 Paving - 2022

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.5 Paving - 2022

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	0.0672	0.0442	0.5088	1.5600e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		155.1854	155.1854	4.2700e-003		155.2922
Total	**0.0672**	**0.0442**	**0.5088**	**1.5600e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**155.1854**	**155.1854**	**4.2700e-003**		**155.2922**

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.5 Paving - 2022

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	0.0672	0.0442	0.5088	1.5600e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		155.1854	155.1854	4.2700e-003		155.2922
Total	**0.0672**	**0.0442**	**0.5088**	**1.5600e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**155.1854**	**155.1854**	**4.2700e-003**		**155.2922**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.9888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**3.2552**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2603	0.1911	2.0796	5.3900e-003	0.5254	4.5300e-003	0.5299	0.1393	4.1700e-003	0.1435		536.8015	536.8015	0.0185		537.2632
Total	**0.2603**	**0.1911**	**2.0796**	**5.3900e-003**	**0.5254**	**4.5300e-003**	**0.5299**	**0.1393**	**4.1700e-003**	**0.1435**		**536.8015**	**536.8015**	**0.0185**		**537.2632**

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	2.9888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**3.2552**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2603	0.1911	2.0796	5.3900e-003	0.5254	4.5300e-003	0.5299	0.1393	4.1700e-003	0.1435		536.8015	536.8015	0.0185		537.2632
Total	**0.2603**	**0.1911**	**2.0796**	**5.3900e-003**	**0.5254**	**4.5300e-003**	**0.5299**	**0.1393**	**4.1700e-003**	**0.1435**		**536.8015**	**536.8015**	**0.0185**		**537.2632**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.9888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**3.2309**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2402	0.1704	1.8848	5.2300e-003	0.5254	4.3900e-003	0.5297	0.1393	4.0500e-003	0.1434		520.4876	520.4876	0.0164		520.8977
Total	**0.2402**	**0.1704**	**1.8848**	**5.2300e-003**	**0.5254**	**4.3900e-003**	**0.5297**	**0.1393**	**4.0500e-003**	**0.1434**		**520.4876**	**520.4876**	**0.0164**		**520.8977**

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	2.9888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**3.2309**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2402	0.1704	1.8848	5.2300e-003	0.5254	4.3900e-003	0.5297	0.1393	4.0500e-003	0.1434		520.4876	520.4876	0.0164		520.8977
Total	**0.2402**	**0.1704**	**1.8848**	**5.2300e-003**	**0.5254**	**4.3900e-003**	**0.5297**	**0.1393**	**4.0500e-003**	**0.1434**		**520.4876**	**520.4876**	**0.0164**		**520.8977**

3.6 Architectural Coating - 2021

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	2.9888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**3.2077**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

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	0.2241	0.1533	1.7308	5.0600e-003	0.5254	4.2400e-003	0.5296	0.1393	3.9100e-003	0.1432		503.9580	503.9580	0.0148		504.3288
Total	**0.2241**	**0.1533**	**1.7308**	**5.0600e-003**	**0.5254**	**4.2400e-003**	**0.5296**	**0.1393**	**3.9100e-003**	**0.1432**		**503.9580**	**503.9580**	**0.0148**		**504.3288**

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	2.9888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**3.2077**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

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	0.2241	0.1533	1.7308	5.0600e-003	0.5254	4.2400e-003	0.5296	0.1393	3.9100e-003	0.1432		503.9580	503.9580	0.0148		504.3288
Total	**0.2241**	**0.1533**	**1.7308**	**5.0600e-003**	**0.5254**	**4.2400e-003**	**0.5296**	**0.1393**	**3.9100e-003**	**0.1432**		**503.9580**	**503.9580**	**0.0148**		**504.3288**

3.6 Architectural Coating - 2022

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	2.9888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**3.1933**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

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	0.2105	0.1384	1.5941	4.8800e-003	0.5254	4.1100e-003	0.5295	0.1393	3.7900e-003	0.1431		486.2476	486.2476	0.0134		486.5824
Total	**0.2105**	**0.1384**	**1.5941**	**4.8800e-003**	**0.5254**	**4.1100e-003**	**0.5295**	**0.1393**	**3.7900e-003**	**0.1431**		**486.2476**	**486.2476**	**0.0134**		**486.5824**

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	2.9888					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**3.1933**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

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	0.2105	0.1384	1.5941	4.8800e-003	0.5254	4.1100e-003	0.5295	0.1393	3.7900e-003	0.1431		486.2476	486.2476	0.0134		486.5824
Total	**0.2105**	**0.1384**	**1.5941**	**4.8800e-003**	**0.5254**	**4.1100e-003**	**0.5295**	**0.1393**	**3.7900e-003**	**0.1431**		**486.2476**	**486.2476**	**0.0134**		**486.5824**

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	3.0918	20.4145	38.9709	0.2191	24.2282	0.0952	24.3234	6.4824	0.0886	6.5710		22,556.6981	22,556.6981	0.8851		22,578.8245
Unmitigated	3.0918	20.4145	38.9709	0.2191	24.2282	0.0952	24.3234	6.4824	0.0886	6.5710		22,556.6981	22,556.6981	0.8851		22,578.8245

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior College (2Yr)	3,770.85	1,377.18	131.16	8,786,045	8,786,045
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	3,770.85	1,377.18	131.16	8,786,045	8,786,045

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 College (2Yr)	16.60	8.40	6.90	6.40	88.60	5.00	92	7	1
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unenclosed Parking with	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Junior College (2Yr)	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810
Other Non-Asphalt Surfaces	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810
Unenclosed Parking with Elevator	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

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	0.1654	1.5033	1.2628	9.0200e-003		0.1143	0.1143		0.1143	0.1143		1,803.9251	1,803.9251	0.0346	0.0331	1,814.6450
NaturalGas Unmitigated	0.1654	1.5033	1.2628	9.0200e-003		0.1143	0.1143		0.1143	0.1143		1,803.9251	1,803.9251	0.0346	0.0331	1,814.6450

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 College (2Yr)	15333.4	0.1654	1.5033	1.2628	9.0200e-003		0.1143	0.1143		0.1143	0.1143		1,803.9251	1,803.9251	0.0346	0.0331	1,814.6450
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1654**	**1.5033**	**1.2628**	**9.0200e-003**		**0.1143**	**0.1143**		**0.1143**	**0.1143**		**1,803.9251**	**1,803.9251**	**0.0346**	**0.0331**	**1,814.6450**

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 College (2Yr)	15.3334	0.1654	1.5033	1.2628	9.0200e-003		0.1143	0.1143		0.1143	0.1143		1,803.9251	1,803.9251	0.0346	0.0331	1,814.6450
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1654**	**1.5033**	**1.2628**	**9.0200e-003**		**0.1143**	**0.1143**		**0.1143**	**0.1143**		**1,803.9251**	**1,803.9251**	**0.0346**	**0.0331**	**1,814.6450**

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	4.8017	3.1500e-003	0.3508	3.0000e-005		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003		0.7568	0.7568	1.9500e-003		0.8056
Unmitigated	4.8017	3.1500e-003	0.3508	3.0000e-005		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003		0.7568	0.7568	1.9500e-003		0.8056

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5519					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.2177					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0321	3.1500e-003	0.3508	3.0000e-005		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003		0.7568	0.7568	1.9500e-003		0.8056
Total	**4.8017**	**3.1500e-003**	**0.3508**	**3.0000e-005**		**1.2400e-003**	**1.2400e-003**		**1.2400e-003**	**1.2400e-003**		**0.7568**	**0.7568**	**1.9500e-003**		**0.8056**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5519					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.2177					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0321	3.1500e-003	0.3508	3.0000e-005		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003		0.7568	0.7568	1.9500e-003		0.8056
Total	**4.8017**	**3.1500e-003**	**0.3508**	**3.0000e-005**		**1.2400e-003**	**1.2400e-003**		**1.2400e-003**	**1.2400e-003**		**0.7568**	**0.7568**	**1.9500e-003**		**0.8056**

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 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B

CalEEMod Model Annual Printouts

LBCC PCC

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior College (2Yr)	3,279.00	Student	4.68	206,672.00	0
Other Non-Asphalt Surfaces	4.12	Acre	4.12	179,467.20	0
Unenclosed Parking with Elevator	175.00	1000sqft	2.00	175,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2040
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - Opening Year 2041

Land Use - 3,279 stu Junior College; 175 tsf Unenclosed Parking with Elevator; 4.12 ac Other Non-Asphalt Surfaces.

Construction Phase - 60 days Demo, 90 days Grading, 674 days Building Construction to occur concurrent with 674 days of Painting, 60 days Paving

Grading -

Demolition - 44,292 square feet of building space x 0.046 tons of debris/SF = 2,037.43 tons of demolition debris

Trips and VMT - In order to account for water trucks, 6 vendor trips added to Demolition and Grading.

Vehicle Trips - Weekday trip rate of 1.15 trips/day to Junior College obtained from TIA.

Energy Use -

Construction Off-road Equipment Mitigation - Per SCAQMD Rule 403 minimum requirements, water exposure 3x per day selected.

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Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	674.00
tblConstructionPhase	NumDays	300.00	674.00
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	30.00	90.00
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	PhaseEndDate	7/13/2020	2/27/2022
tblConstructionPhase	PhaseEndDate	5/18/2020	2/27/2022
tblConstructionPhase	PhaseEndDate	1/28/2019	3/25/2019
tblConstructionPhase	PhaseEndDate	3/25/2019	7/29/2019
tblConstructionPhase	PhaseEndDate	6/15/2020	5/23/2022
tblConstructionPhase	PhaseStartDate	6/16/2020	7/30/2019
tblConstructionPhase	PhaseStartDate	3/26/2019	7/30/2019
tblConstructionPhase	PhaseStartDate	2/12/2019	3/26/2019
tblConstructionPhase	PhaseStartDate	5/19/2020	3/1/2022
tblLandUse	LandUseSquareFeet	143,135.69	206,672.00
tblLandUse	LotAcreage	3.29	4.68
tblLandUse	LotAcreage	4.02	2.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblVehicleTrips	WD_TR	1.23	1.15

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.7403	5.5579	4.1791	9.1200e-003	0.6357	0.2457	0.8814	0.2254	0.2288	0.4541	0.0000	825.6158	825.6158	0.1572	0.0000	829.5456
2020	0.9158	4.1780	4.3267	0.0112	0.4822	0.1704	0.6526	0.1298	0.1611	0.2909	0.0000	1,014.9052	1,014.9052	0.1076	0.0000	1,017.5945
2021	0.8629	3.7827	4.1181	0.0110	0.4803	0.1431	0.6235	0.1293	0.1353	0.2646	0.0000	996.7723	996.7723	0.1041	0.0000	999.3752
2022	0.1611	0.8652	1.0604	2.3900e-003	0.0785	0.0357	0.1143	0.0211	0.0333	0.0545	0.0000	214.7901	214.7901	0.0352	0.0000	215.6690
Maximum	**0.9158**	**5.5579**	**4.3267**	**0.0112**	**0.6357**	**0.2457**	**0.8814**	**0.2254**	**0.2288**	**0.4541**	**0.0000**	**1,014.9052**	**1,014.9052**	**0.1572**	**0.0000**	**1,017.5945**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.7403	5.5579	4.1791	9.1200e-003	0.3844	0.2457	0.6300	0.1246	0.2288	0.3534	0.0000	825.6153	825.6153	0.1572	0.0000	829.5450
2020	0.9158	4.1780	4.3267	0.0112	0.4822	0.1704	0.6526	0.1298	0.1611	0.2909	0.0000	1,014.9048	1,014.9048	0.1076	0.0000	1,017.5941
2021	0.8629	3.7827	4.1181	0.0110	0.4803	0.1431	0.6235	0.1293	0.1353	0.2646	0.0000	996.7719	996.7719	0.1041	0.0000	999.3748
2022	0.1611	0.8652	1.0604	2.3900e-003	0.0785	0.0357	0.1143	0.0211	0.0333	0.0545	0.0000	214.7900	214.7900	0.0352	0.0000	215.6689
Maximum	**0.9158**	**5.5579**	**4.3267**	**0.0112**	**0.4822**	**0.2457**	**0.6526**	**0.1298**	**0.2288**	**0.3534**	**0.0000**	**1,014.9048**	**1,014.9048**	**0.1572**	**0.0000**	**1,017.5941**

	ROG	NOx	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**	**14.99**	**0.00**	**11.07**	**19.92**	**0.00**	**9.47**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2019	3-31-2019	1.3660	1.3660
2	4-1-2019	6-30-2019	1.9549	1.9549
3	7-1-2019	9-30-2019	1.5683	1.5683
4	10-1-2019	12-31-2019	1.3901	1.3901
5	1-1-2020	3-31-2020	1.2616	1.2616
6	4-1-2020	6-30-2020	1.2533	1.2533
7	7-1-2020	9-30-2020	1.2671	1.2671
8	10-1-2020	12-31-2020	1.2755	1.2755

9	**1-1-2021**	**3-31-2021**	1.1426	1.1426
10	**4-1-2021**	**6-30-2021**	1.1481	1.1481
11	**7-1-2021**	**9-30-2021**	1.1607	1.1607
12	**10-1-2021**	**12-31-2021**	1.1680	1.1680
13	**1-1-2022**	**3-31-2022**	0.8154	0.8154
14	**4-1-2022**	**6-30-2022**	0.2333	0.2333
		Highest	1.9549	1.9549

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	0.8745	3.9000e-004	0.0439	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0858	0.0858	2.2000e-004	0.0000	0.0914
Energy	0.0302	0.2744	0.2305	1.6500e-003		0.0209	0.0209		0.0209	0.0209	0.0000	1,066.6503	1,066.6503	0.0374	0.0120	1,071.1726
Mobile	0.4246	2.9103	5.5299	0.0312	3.3360	0.0133	3.3493	0.8940	0.0124	0.9064	0.0000	2,913.9547	2,913.9547	0.1116	0.0000	2,916.7457
Waste						0.0000	0.0000		0.0000	0.0000	121.4739	0.0000	121.4739	7.1789	0.0000	300.9463
Water						0.0000	0.0000		0.0000	0.0000	2.2273	67.9988	70.2261	0.2316	5.9800e-003	77.7983
Total	**1.3292**	**3.1851**	**5.8042**	**0.0329**	**3.3360**	**0.0343**	**3.3703**	**0.8940**	**0.0334**	**0.9274**	**123.7012**	**4,048.6895**	**4,172.3907**	**7.5598**	**0.0180**	**4,366.7542**

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	0.8745	3.9000e-004	0.0439	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0858	0.0858	2.2000e-004	0.0000	0.0914
Energy	0.0302	0.2744	0.2305	1.6500e-003		0.0209	0.0209		0.0209	0.0209	0.0000	1,066.6503	1,066.6503	0.0374	0.0120	1,071.1726
Mobile	0.4246	2.9103	5.5299	0.0312	3.3360	0.0133	3.3493	0.8940	0.0124	0.9064	0.0000	2,913.9547	2,913.9547	0.1116	0.0000	2,916.7457
Waste						0.0000	0.0000		0.0000	0.0000	121.4739	0.0000	121.4739	7.1789	0.0000	300.9463
Water						0.0000	0.0000		0.0000	0.0000	2.2273	67.9988	70.2261	0.2316	5.9800e-003	77.7983
Total	**1.3292**	**3.1851**	**5.8042**	**0.0329**	**3.3360**	**0.0343**	**3.3703**	**0.8940**	**0.0334**	**0.9274**	**123.7012**	**4,048.6895**	**4,172.3907**	**7.5598**	**0.0180**	**4,366.7542**

	ROG	NOx	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

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2019	3/25/2019	5	60	
2	Grading	Grading	3/26/2019	7/29/2019	5	90	
3	Building Construction	Building Construction	7/30/2019	2/27/2022	5	674	
4	Paving	Paving	3/1/2022	5/23/2022	5	60	
5	Architectural Coating	Architectural Coating	7/30/2019	2/27/2022	5	674	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 225

Acres of Paving: 6.12

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 310,008; Non-Residential Outdoor: 103,336; Striped Parking Area: 21,268 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45

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	6	15.00	6.00	201.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	236.00	92.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	47.00	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 - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0218	0.0000	0.0218	3.3000e-003	0.0000	3.3000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1054	1.0735	0.6618	1.1600e-003		0.0539	0.0539		0.0501	0.0501	0.0000	103.8790	103.8790	0.0289	0.0000	104.6014
Total	**0.1054**	**1.0735**	**0.6618**	**1.1600e-003**	**0.0218**	**0.0539**	**0.0757**	**3.3000e-003**	**0.0501**	**0.0534**	**0.0000**	**103.8790**	**103.8790**	**0.0289**	**0.0000**	**104.6014**

3.2 Demolition - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.5000e-004	0.0318	6.7600e-003	8.0000e-005	1.7300e-003	1.1000e-004	1.8400e-003	4.7000e-004	1.1000e-004	5.8000e-004	0.0000	7.8258	7.8258	5.5000e-004	0.0000	7.8396
Vendor	7.6000e-004	0.0213	5.8100e-003	5.0000e-005	1.1300e-003	1.3000e-004	1.2700e-003	3.3000e-004	1.3000e-004	4.6000e-004	0.0000	4.5012	4.5012	3.0000e-004	0.0000	4.5087
Worker	2.2500e-003	1.8800e-003	0.0204	5.0000e-005	4.9300e-003	4.0000e-005	4.9700e-003	1.3100e-003	4.0000e-005	1.3500e-003	0.0000	4.7401	4.7401	1.6000e-004	0.0000	4.7442
Total	**3.9600e-003**	**0.0550**	**0.0330**	**1.8000e-004**	**7.7900e-003**	**2.8000e-004**	**8.0800e-003**	**2.1100e-003**	**2.8000e-004**	**2.3900e-003**	**0.0000**	**17.0671**	**17.0671**	**1.0100e-003**	**0.0000**	**17.0924**

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					8.5000e-003	0.0000	8.5000e-003	1.2900e-003	0.0000	1.2900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1054	1.0735	0.6618	1.1600e-003		0.0539	0.0539		0.0501	0.0501	0.0000	103.8789	103.8789	0.0289	0.0000	104.6013
Total	**0.1054**	**1.0735**	**0.6618**	**1.1600e-003**	**8.5000e-003**	**0.0539**	**0.0624**	**1.2900e-003**	**0.0501**	**0.0514**	**0.0000**	**103.8789**	**103.8789**	**0.0289**	**0.0000**	**104.6013**

3.2 Demolition - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.5000e-004	0.0318	6.7600e-003	8.0000e-005	1.7300e-003	1.1000e-004	1.8400e-003	4.7000e-004	1.1000e-004	5.8000e-004	0.0000	7.8258	7.8258	5.5000e-004	0.0000	7.8396
Vendor	7.6000e-004	0.0213	5.8100e-003	5.0000e-005	1.1300e-003	1.3000e-004	1.2700e-003	3.3000e-004	1.3000e-004	4.6000e-004	0.0000	4.5012	4.5012	3.0000e-004	0.0000	4.5087
Worker	2.2500e-003	1.8800e-003	0.0204	5.0000e-005	4.9300e-003	4.0000e-005	4.9700e-003	1.3100e-003	4.0000e-005	1.3500e-003	0.0000	4.7401	4.7401	1.6000e-004	0.0000	4.7442
Total	**3.9600e-003**	**0.0550**	**0.0330**	**1.8000e-004**	**7.7900e-003**	**2.8000e-004**	**8.0800e-003**	**2.1100e-003**	**2.8000e-004**	**2.3900e-003**	**0.0000**	**17.0671**	**17.0671**	**1.0100e-003**	**0.0000**	**17.0924**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3903	0.0000	0.3903	0.1618	0.0000	0.1618	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2133	2.4534	1.5020	2.7900e-003		0.1072	0.1072		0.0986	0.0986	0.0000	250.6559	250.6559	0.0793	0.0000	252.6386
Total	**0.2133**	**2.4534**	**1.5020**	**2.7900e-003**	**0.3903**	**0.1072**	**0.4975**	**0.1618**	**0.0986**	**0.2605**	**0.0000**	**250.6559**	**250.6559**	**0.0793**	**0.0000**	**252.6386**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1400e-003	0.0319	8.7200e-003	7.0000e-005	1.7000e-003	2.0000e-004	1.9000e-003	4.9000e-004	1.9000e-004	6.8000e-004	0.0000	6.7517	6.7517	4.5000e-004	0.0000	6.7630
Worker	4.5100e-003	3.7600e-003	0.0409	1.0000e-004	9.8600e-003	9.0000e-005	9.9500e-003	2.6200e-003	8.0000e-005	2.7000e-003	0.0000	9.4802	9.4802	3.3000e-004	0.0000	9.4884
Total	**5.6500e-003**	**0.0357**	**0.0496**	**1.7000e-004**	**0.0116**	**2.9000e-004**	**0.0119**	**3.1100e-003**	**2.7000e-004**	**3.3800e-003**	**0.0000**	**16.2320**	**16.2320**	**7.8000e-004**	**0.0000**	**16.2514**

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					0.1522	0.0000	0.1522	0.0631	0.0000	0.0631	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2133	2.4534	1.5020	2.7900e-003		0.1072	0.1072		0.0986	0.0986	0.0000	250.6556	250.6556	0.0793	0.0000	252.6383
Total	**0.2133**	**2.4534**	**1.5020**	**2.7900e-003**	**0.1522**	**0.1072**	**0.2594**	**0.0631**	**0.0986**	**0.1618**	**0.0000**	**250.6556**	**250.6556**	**0.0793**	**0.0000**	**252.6383**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1400e-003	0.0319	8.7200e-003	7.0000e-005	1.7000e-003	2.0000e-004	1.9000e-003	4.9000e-004	1.9000e-004	6.8000e-004	0.0000	6.7517	6.7517	4.5000e-004	0.0000	6.7630
Worker	4.5100e-003	3.7600e-003	0.0409	1.0000e-004	9.8600e-003	9.0000e-005	9.9500e-003	2.6200e-003	8.0000e-005	2.7000e-003	0.0000	9.4802	9.4802	3.3000e-004	0.0000	9.4884
Total	**5.6500e-003**	**0.0357**	**0.0496**	**1.7000e-004**	**0.0116**	**2.9000e-004**	**0.0119**	**3.1100e-003**	**2.7000e-004**	**3.3800e-003**	**0.0000**	**16.2320**	**16.2320**	**7.8000e-004**	**0.0000**	**16.2514**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1310	1.1699	0.9526	1.4900e-003		0.0716	0.0716		0.0673	0.0673	0.0000	130.4828	130.4828	0.0318	0.0000	131.2775
Total	**0.1310**	**1.1699**	**0.9526**	**1.4900e-003**		**0.0716**	**0.0716**		**0.0673**	**0.0673**	**0.0000**	**130.4828**	**130.4828**	**0.0318**	**0.0000**	**131.2775**

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0216	0.6031	0.1650	1.3200e-003	0.0322	3.7900e-003	0.0360	9.2800e-003	3.6300e-003	0.0129	0.0000	127.6829	127.6829	8.5200e-003	0.0000	127.8960
Worker	0.0656	0.0547	0.5946	1.5300e-003	0.1435	1.2600e-003	0.1448	0.0381	1.1600e-003	0.0393	0.0000	137.9688	137.9688	4.7400e-003	0.0000	138.0874
Total	**0.0872**	**0.6578**	**0.7596**	**2.8500e-003**	**0.1757**	**5.0500e-003**	**0.1807**	**0.0474**	**4.7900e-003**	**0.0522**	**0.0000**	**265.6517**	**265.6517**	**0.0133**	**0.0000**	**265.9834**

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	0.1310	1.1699	0.9526	1.4900e-003		0.0716	0.0716		0.0673	0.0673	0.0000	130.4827	130.4827	0.0318	0.0000	131.2773
Total	**0.1310**	**1.1699**	**0.9526**	**1.4900e-003**		**0.0716**	**0.0716**		**0.0673**	**0.0673**	**0.0000**	**130.4827**	**130.4827**	**0.0318**	**0.0000**	**131.2773**

3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0216	0.6031	0.1650	1.3200e-003	0.0322	3.7900e-003	0.0360	9.2800e-003	3.6300e-003	0.0129	0.0000	127.6829	127.6829	8.5200e-003	0.0000	127.8960
Worker	0.0656	0.0547	0.5946	1.5300e-003	0.1435	1.2600e-003	0.1448	0.0381	1.1600e-003	0.0393	0.0000	137.9688	137.9688	4.7400e-003	0.0000	138.0874
Total	**0.0872**	**0.6578**	**0.7596**	**2.8500e-003**	**0.1757**	**5.0500e-003**	**0.1807**	**0.0474**	**4.7900e-003**	**0.0522**	**0.0000**	**265.6517**	**265.6517**	**0.0133**	**0.0000**	**265.9834**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4091	303.4091	0.0740	0.0000	305.2596
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4091**	**303.4091**	**0.0740**	**0.0000**	**305.2596**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0437	1.3060	0.3535	3.0900e-003	0.0759	6.0700e-003	0.0820	0.0219	5.8100e-003	0.0277	0.0000	299.4033	299.4033	0.0190	0.0000	299.8789
Worker	0.1427	0.1151	1.2726	3.4900e-003	0.3388	2.8900e-003	0.3417	0.0900	2.6600e-003	0.0926	0.0000	315.7607	315.7607	9.9500e-003	0.0000	316.0095
Total	**0.1864**	**1.4211**	**1.6261**	**6.5800e-003**	**0.4147**	**8.9600e-003**	**0.4237**	**0.1119**	**8.4700e-003**	**0.1204**	**0.0000**	**615.1640**	**615.1640**	**0.0290**	**0.0000**	**615.8884**

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	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4087	303.4087	0.0740	0.0000	305.2592
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4087**	**303.4087**	**0.0740**	**0.0000**	**305.2592**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0437	1.3060	0.3535	3.0900e-003	0.0759	6.0700e-003	0.0820	0.0219	5.8100e-003	0.0277	0.0000	299.4033	299.4033	0.0190	0.0000	299.8789
Worker	0.1427	0.1151	1.2726	3.4900e-003	0.3388	2.8900e-003	0.3417	0.0900	2.6600e-003	0.0926	0.0000	315.7607	315.7607	9.9500e-003	0.0000	316.0095
Total	**0.1864**	**1.4211**	**1.6261**	**6.5800e-003**	**0.4147**	**8.9600e-003**	**0.4237**	**0.1119**	**8.4700e-003**	**0.1204**	**0.0000**	**615.1640**	**615.1640**	**0.0290**	**0.0000**	**615.8884**

3.4 Building Construction - 2021

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	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2867**	**302.2867**	**0.0729**	**0.0000**	**304.1099**

3.4 Building Construction - 2021

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	0.0373	1.1849	0.3212	3.0500e-003	0.0756	2.4200e-003	0.0780	0.0218	2.3100e-003	0.0241	0.0000	295.9438	295.9438	0.0182	0.0000	296.3976
Worker	0.1325	0.1032	1.1647	3.3700e-003	0.3375	2.7800e-003	0.3403	0.0896	2.5600e-003	0.0922	0.0000	304.5667	304.5667	8.9600e-003	0.0000	304.7907
Total	**0.1698**	**1.2880**	**1.4859**	**6.4200e-003**	**0.4131**	**5.2000e-003**	**0.4183**	**0.1115**	**4.8700e-003**	**0.1163**	**0.0000**	**600.5105**	**600.5105**	**0.0271**	**0.0000**	**601.1883**

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	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2863	302.2863	0.0729	0.0000	304.1095
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2863**	**302.2863**	**0.0729**	**0.0000**	**304.1095**

3.4 Building Construction - 2021

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	0.0373	1.1849	0.3212	3.0500e-003	0.0756	2.4200e-003	0.0780	0.0218	2.3100e-003	0.0241	0.0000	295.9438	295.9438	0.0182	0.0000	296.3976
Worker	0.1325	0.1032	1.1647	3.3700e-003	0.3375	2.7800e-003	0.3403	0.0896	2.5600e-003	0.0922	0.0000	304.5667	304.5667	8.9600e-003	0.0000	304.7907
Total	**0.1698**	**1.2880**	**1.4859**	**6.4200e-003**	**0.4131**	**5.2000e-003**	**0.4183**	**0.1115**	**4.8700e-003**	**0.1163**	**0.0000**	**600.5105**	**600.5105**	**0.0271**	**0.0000**	**601.1883**

3.4 Building Construction - 2022

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	0.0341	0.3123	0.3273	5.4000e-004		0.0162	0.0162		0.0152	0.0152	0.0000	46.3451	46.3451	0.0111	0.0000	46.6226
Total	**0.0341**	**0.3123**	**0.3273**	**5.4000e-004**		**0.0162**	**0.0162**		**0.0152**	**0.0152**	**0.0000**	**46.3451**	**46.3451**	**0.0111**	**0.0000**	**46.6226**

3.4 Building Construction - 2022

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	5.3600e-003	0.1725	0.0466	4.6000e-004	0.0116	3.2000e-004	0.0119	3.3500e-003	3.1000e-004	3.6500e-003	0.0000	44.9570	44.9570	2.6900e-003	0.0000	45.0241
Worker	0.0190	0.0143	0.1645	5.0000e-004	0.0517	4.1000e-004	0.0521	0.0137	3.8000e-004	0.0141	0.0000	45.0361	45.0361	1.2400e-003	0.0000	45.0671
Total	**0.0244**	**0.1868**	**0.2110**	**9.6000e-004**	**0.0633**	**7.3000e-004**	**0.0640**	**0.0171**	**6.9000e-004**	**0.0178**	**0.0000**	**89.9931**	**89.9931**	**3.9300e-003**	**0.0000**	**90.0912**

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	0.0341	0.3123	0.3273	5.4000e-004		0.0162	0.0162		0.0152	0.0152	0.0000	46.3450	46.3450	0.0111	0.0000	46.6226
Total	**0.0341**	**0.3123**	**0.3273**	**5.4000e-004**		**0.0162**	**0.0162**		**0.0152**	**0.0152**	**0.0000**	**46.3450**	**46.3450**	**0.0111**	**0.0000**	**46.6226**

3.4 Building Construction - 2022

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	5.3600e-003	0.1725	0.0466	4.6000e-004	0.0116	3.2000e-004	0.0119	3.3500e-003	3.1000e-004	3.6500e-003	0.0000	44.9570	44.9570	2.6900e-003	0.0000	45.0241
Worker	0.0190	0.0143	0.1645	5.0000e-004	0.0517	4.1000e-004	0.0521	0.0137	3.8000e-004	0.0141	0.0000	45.0361	45.0361	1.2400e-003	0.0000	45.0671
Total	**0.0244**	**0.1868**	**0.2110**	**9.6000e-004**	**0.0633**	**7.3000e-004**	**0.0640**	**0.0171**	**6.9000e-004**	**0.0178**	**0.0000**	**89.9931**	**89.9931**	**3.9300e-003**	**0.0000**	**90.0912**

3.5 Paving - 2022

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	0.0331	0.3338	0.4374	6.8000e-004		0.0170	0.0170		0.0157	0.0157	0.0000	60.0827	60.0827	0.0194	0.0000	60.5685
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0331**	**0.3338**	**0.4374**	**6.8000e-004**		**0.0170**	**0.0170**		**0.0157**	**0.0157**	**0.0000**	**60.0827**	**60.0827**	**0.0194**	**0.0000**	**60.5685**

3.5 Paving - 2022

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	1.8200e-003	1.3600e-003	0.0157	5.0000e-005	4.9300e-003	4.0000e-005	4.9700e-003	1.3100e-003	4.0000e-005	1.3500e-003	0.0000	4.2937	4.2937	1.2000e-004	0.0000	4.2967
Total	**1.8200e-003**	**1.3600e-003**	**0.0157**	**5.0000e-005**	**4.9300e-003**	**4.0000e-005**	**4.9700e-003**	**1.3100e-003**	**4.0000e-005**	**1.3500e-003**	**0.0000**	**4.2937**	**4.2937**	**1.2000e-004**	**0.0000**	**4.2967**

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	0.0331	0.3338	0.4374	6.8000e-004		0.0170	0.0170		0.0157	0.0157	0.0000	60.0826	60.0826	0.0194	0.0000	60.5684
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0331**	**0.3338**	**0.4374**	**6.8000e-004**		**0.0170**	**0.0170**		**0.0157**	**0.0157**	**0.0000**	**60.0826**	**60.0826**	**0.0194**	**0.0000**	**60.5684**

3.5 Paving - 2022

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	1.8200e-003	1.3600e-003	0.0157	5.0000e-005	4.9300e-003	4.0000e-005	4.9700e-003	1.3100e-003	4.0000e-005	1.3500e-003	0.0000	4.2937	4.2937	1.2000e-004	0.0000	4.2967
Total	**1.8200e-003**	**1.3600e-003**	**0.0157**	**5.0000e-005**	**4.9300e-003**	**4.0000e-005**	**4.9700e-003**	**1.3100e-003**	**4.0000e-005**	**1.3500e-003**	**0.0000**	**4.2937**	**4.2937**	**1.2000e-004**	**0.0000**	**4.2967**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1659					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0148	0.1019	0.1022	1.6000e-004		7.1500e-003	7.1500e-003		7.1500e-003	7.1500e-003	0.0000	14.1706	14.1706	1.2000e-003	0.0000	14.2005
Total	**0.1807**	**0.1019**	**0.1022**	**1.6000e-004**		**7.1500e-003**	**7.1500e-003**		**7.1500e-003**	**7.1500e-003**	**0.0000**	**14.1706**	**14.1706**	**1.2000e-003**	**0.0000**	**14.2005**

3.6 Architectural Coating - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0131	0.0109	0.1184	3.0000e-004	0.0286	2.5000e-004	0.0288	7.5900e-003	2.3000e-004	7.8200e-003	0.0000	27.4768	27.4768	9.4000e-004	0.0000	27.5005
Total	**0.0131**	**0.0109**	**0.1184**	**3.0000e-004**	**0.0286**	**2.5000e-004**	**0.0288**	**7.5900e-003**	**2.3000e-004**	**7.8200e-003**	**0.0000**	**27.4768**	**27.4768**	**9.4000e-004**	**0.0000**	**27.5005**

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	0.1659					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0148	0.1019	0.1022	1.6000e-004		7.1500e-003	7.1500e-003		7.1500e-003	7.1500e-003	0.0000	14.1705	14.1705	1.2000e-003	0.0000	14.2005
Total	**0.1807**	**0.1019**	**0.1022**	**1.6000e-004**		**7.1500e-003**	**7.1500e-003**		**7.1500e-003**	**7.1500e-003**	**0.0000**	**14.1705**	**14.1705**	**1.2000e-003**	**0.0000**	**14.2005**

3.6 Architectural Coating - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0131	0.0109	0.1184	3.0000e-004	0.0286	2.5000e-004	0.0288	7.5900e-003	2.3000e-004	7.8200e-003	0.0000	27.4768	27.4768	9.4000e-004	0.0000	27.5005
Total	**0.0131**	**0.0109**	**0.1184**	**3.0000e-004**	**0.0286**	**2.5000e-004**	**0.0288**	**7.5900e-003**	**2.3000e-004**	**7.8200e-003**	**0.0000**	**27.4768**	**27.4768**	**9.4000e-004**	**0.0000**	**27.5005**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3915					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.2206	0.2399	3.9000e-004		0.0145	0.0145		0.0145	0.0145	0.0000	33.4476	33.4476	2.5900e-003	0.0000	33.5124
Total	**0.4233**	**0.2206**	**0.2399**	**3.9000e-004**		**0.0145**	**0.0145**		**0.0145**	**0.0145**	**0.0000**	**33.4476**	**33.4476**	**2.5900e-003**	**0.0000**	**33.5124**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0284	0.0229	0.2534	7.0000e-004	0.0675	5.8000e-004	0.0680	0.0179	5.3000e-004	0.0185	0.0000	62.8846	62.8846	1.9800e-003	0.0000	62.9341
Total	**0.0284**	**0.0229**	**0.2534**	**7.0000e-004**	**0.0675**	**5.8000e-004**	**0.0680**	**0.0179**	**5.3000e-004**	**0.0185**	**0.0000**	**62.8846**	**62.8846**	**1.9800e-003**	**0.0000**	**62.9341**

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	0.3915					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.2206	0.2399	3.9000e-004		0.0145	0.0145		0.0145	0.0145	0.0000	33.4476	33.4476	2.5900e-003	0.0000	33.5123
Total	**0.4233**	**0.2206**	**0.2399**	**3.9000e-004**		**0.0145**	**0.0145**		**0.0145**	**0.0145**	**0.0000**	**33.4476**	**33.4476**	**2.5900e-003**	**0.0000**	**33.5123**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0284	0.0229	0.2534	7.0000e-004	0.0675	5.8000e-004	0.0680	0.0179	5.3000e-004	0.0185	0.0000	62.8846	62.8846	1.9800e-003	0.0000	62.9341
Total	**0.0284**	**0.0229**	**0.2534**	**7.0000e-004**	**0.0675**	**5.8000e-004**	**0.0680**	**0.0179**	**5.3000e-004**	**0.0185**	**0.0000**	**62.8846**	**62.8846**	**1.9800e-003**	**0.0000**	**62.9341**

3.6 Architectural Coating - 2021

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	0.3900					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3200	33.3200	2.2900e-003	0.0000	33.3771
Total	**0.4186**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3200**	**33.3200**	**2.2900e-003**	**0.0000**	**33.3771**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0264	0.0206	0.2319	6.7000e-004	0.0672	5.5000e-004	0.0678	0.0179	5.1000e-004	0.0184	0.0000	60.6552	60.6552	1.7800e-003	0.0000	60.6999
Total	**0.0264**	**0.0206**	**0.2319**	**6.7000e-004**	**0.0672**	**5.5000e-004**	**0.0678**	**0.0179**	**5.1000e-004**	**0.0184**	**0.0000**	**60.6552**	**60.6552**	**1.7800e-003**	**0.0000**	**60.6999**

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	0.3900					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3199	33.3199	2.2900e-003	0.0000	33.3771
Total	**0.4186**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3199**	**33.3199**	**2.2900e-003**	**0.0000**	**33.3771**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0264	0.0206	0.2319	6.7000e-004	0.0672	5.5000e-004	0.0678	0.0179	5.1000e-004	0.0184	0.0000	60.6552	60.6552	1.7800e-003	0.0000	60.6999
Total	**0.0264**	**0.0206**	**0.2319**	**6.7000e-004**	**0.0672**	**5.5000e-004**	**0.0678**	**0.0179**	**5.1000e-004**	**0.0184**	**0.0000**	**60.6552**	**60.6552**	**1.7800e-003**	**0.0000**	**60.6999**

3.6 Architectural Coating - 2022

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	0.0598					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0900e-003	0.0282	0.0363	6.0000e-005		1.6300e-003	1.6300e-003		1.6300e-003	1.6300e-003	0.0000	5.1065	5.1065	3.3000e-004	0.0000	5.1148
Total	**0.0639**	**0.0282**	**0.0363**	**6.0000e-005**		**1.6300e-003**	**1.6300e-003**		**1.6300e-003**	**1.6300e-003**	**0.0000**	**5.1065**	**5.1065**	**3.3000e-004**	**0.0000**	**5.1148**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7900e-003	2.8400e-003	0.0328	1.0000e-004	0.0103	8.0000e-005	0.0104	2.7400e-003	8.0000e-005	2.8100e-003	0.0000	8.9691	8.9691	2.5000e-004	0.0000	8.9752
Total	**3.7900e-003**	**2.8400e-003**	**0.0328**	**1.0000e-004**	**0.0103**	**8.0000e-005**	**0.0104**	**2.7400e-003**	**8.0000e-005**	**2.8100e-003**	**0.0000**	**8.9691**	**8.9691**	**2.5000e-004**	**0.0000**	**8.9752**

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	0.0598					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0900e-003	0.0282	0.0363	6.0000e-005		1.6300e-003	1.6300e-003		1.6300e-003	1.6300e-003	0.0000	5.1065	5.1065	3.3000e-004	0.0000	5.1148
Total	**0.0639**	**0.0282**	**0.0363**	**6.0000e-005**		**1.6300e-003**	**1.6300e-003**		**1.6300e-003**	**1.6300e-003**	**0.0000**	**5.1065**	**5.1065**	**3.3000e-004**	**0.0000**	**5.1148**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7900e-003	2.8400e-003	0.0328	1.0000e-004	0.0103	8.0000e-005	0.0104	2.7400e-003	8.0000e-005	2.8100e-003	0.0000	8.9691	8.9691	2.5000e-004	0.0000	8.9752
Total	**3.7900e-003**	**2.8400e-003**	**0.0328**	**1.0000e-004**	**0.0103**	**8.0000e-005**	**0.0104**	**2.7400e-003**	**8.0000e-005**	**2.8100e-003**	**0.0000**	**8.9691**	**8.9691**	**2.5000e-004**	**0.0000**	**8.9752**

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	0.4246	2.9103	5.5299	0.0312	3.3360	0.0133	3.3493	0.8940	0.0124	0.9064	0.0000	2,913.9547	2,913.9547	0.1116	0.0000	2,916.7457
Unmitigated	0.4246	2.9103	5.5299	0.0312	3.3360	0.0133	3.3493	0.8940	0.0124	0.9064	0.0000	2,913.9547	2,913.9547	0.1116	0.0000	2,916.7457

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior College (2Yr)	3,770.85	1,377.18	131.16	8,786,045	8,786,045
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	3,770.85	1,377.18	131.16	8,786,045	8,786,045

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 College (2Yr)	16.60	8.40	6.90	6.40	88.60	5.00	92	7	1
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unenclosed Parking with	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Junior College (2Yr)	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810
Other Non-Asphalt Surfaces	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810
Unenclosed Parking with Elevator	0.537194	0.043713	0.210127	0.116181	0.013260	0.006460	0.022765	0.039037	0.002776	0.001599	0.005341	0.000737	0.000810

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	767.9903	767.9903	0.0317	6.5600e-003	770.7378
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	767.9903	767.9903	0.0317	6.5600e-003	770.7378
NaturalGas Mitigated	0.0302	0.2744	0.2305	1.6500e-003		0.0209	0.0209		0.0209	0.0209	0.0000	298.6600	298.6600	5.7200e-003	5.4800e-003	300.4348
NaturalGas Unmitigated	0.0302	0.2744	0.2305	1.6500e-003		0.0209	0.0209		0.0209	0.0209	0.0000	298.6600	298.6600	5.7200e-003	5.4800e-003	300.4348

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 College (2Yr)	5.59668e+006	0.0302	0.2744	0.2305	1.6500e-003		0.0209	0.0209		0.0209	0.0209	0.0000	298.6600	298.6600	5.7200e-003	5.4800e-003	300.4348
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0302**	**0.2744**	**0.2305**	**1.6500e-003**		**0.0209**	**0.0209**		**0.0209**	**0.0209**	**0.0000**	**298.6600**	**298.6600**	**5.7200e-003**	**5.4800e-003**	**300.4348**

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 College (2Yr)	5.59668e+006	0.0302	0.2744	0.2305	1.6500e-003		0.0209	0.0209		0.0209	0.0209	0.0000	298.6600	298.6600	5.7200e-003	5.4800e-003	300.4348
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0302**	**0.2744**	**0.2305**	**1.6500e-003**		**0.0209**	**0.0209**		**0.0209**	**0.0209**	**0.0000**	**298.6600**	**298.6600**	**5.7200e-003**	**5.4800e-003**	**300.4348**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Junior College (2Yr)	2.07085e+006	659.8183	0.0272	5.6400e-003	662.1788
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	339500	108.1720	4.4700e-003	9.2000e-004	108.5590
Total		**767.9902**	**0.0317**	**6.5600e-003**	**770.7378**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Junior College (2Yr)	2.07085e+006	659.8183	0.0272	5.6400e-003	662.1788
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	339500	108.1720	4.4700e-003	9.2000e-004	108.5590
Total		**767.9902**	**0.0317**	**6.5600e-003**	**770.7378**

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	0.8745	3.9000e-004	0.0439	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0858	0.0858	2.2000e-004	0.0000	0.0914
Unmitigated	0.8745	3.9000e-004	0.0439	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0858	0.0858	2.2000e-004	0.0000	0.0914

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	0.1007					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7697					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0100e-003	3.9000e-004	0.0439	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0858	0.0858	2.2000e-004	0.0000	0.0914
Total	**0.8745**	**3.9000e-004**	**0.0439**	**0.0000**		**1.6000e-004**	**1.6000e-004**		**1.6000e-004**	**1.6000e-004**	**0.0000**	**0.0858**	**0.0858**	**2.2000e-004**	**0.0000**	**0.0914**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1007					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7697					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0100e-003	3.9000e-004	0.0439	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	0.0858	0.0858	2.2000e-004	0.0000	0.0914
Total	**0.8745**	**3.9000e-004**	**0.0439**	**0.0000**		**1.6000e-004**	**1.6000e-004**		**1.6000e-004**	**1.6000e-004**	**0.0000**	**0.0858**	**0.0858**	**2.2000e-004**	**0.0000**	**0.0914**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	70.2261	0.2316	5.9800e-003	77.7983
Unmitigated	70.2261	0.2316	5.9800e-003	77.7983

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Junior College (2Yr)	7.02067 / 10.981	70.2261	0.2316	5.9800e-003	77.7983
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**70.2261**	**0.2316**	**5.9800e-003**	**77.7983**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Junior College (2Yr)	7.02067 / 10.981	70.2261	0.2316	5.9800e-003	77.7983
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**70.2261**	**0.2316**	**5.9800e-003**	**77.7983**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	121.4739	7.1789	0.0000	300.9463
Unmitigated	121.4739	7.1789	0.0000	300.9463

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Junior College (2Yr)	598.42	121.4739	7.1789	0.0000	300.9463
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**121.4739**	**7.1789**	**0.0000**	**300.9463**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Junior College (2Yr)	598.42	121.4739	7.1789	0.0000	300.9463
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**121.4739**	**7.1789**	**0.0000**	**300.9463**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

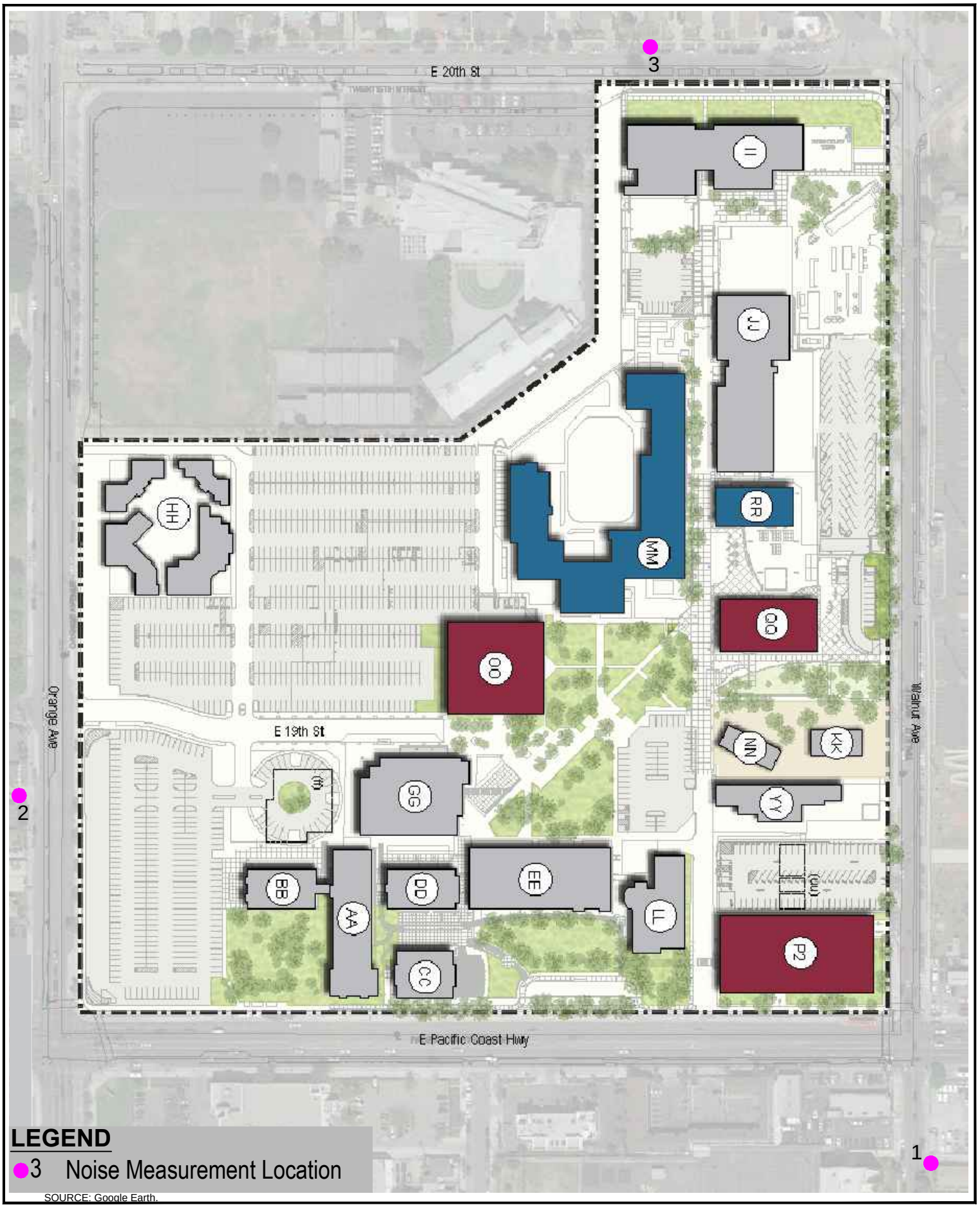
Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX C– NOISE ANALYSIS DATA



SOURCE: Google Earth.

N

VISTA ENVIRONMENTAL

Figure C-1
PCC Noise Measurement Locations

Noise Measurement Site 1 - Looking North

Noise Measurement Site 1 - Looking Northeast

Noise Measurement Site 1 - Looking East

Noise Measurement Site 1 - Looking Southeast

Noise Measurement Site 1 - Looking South

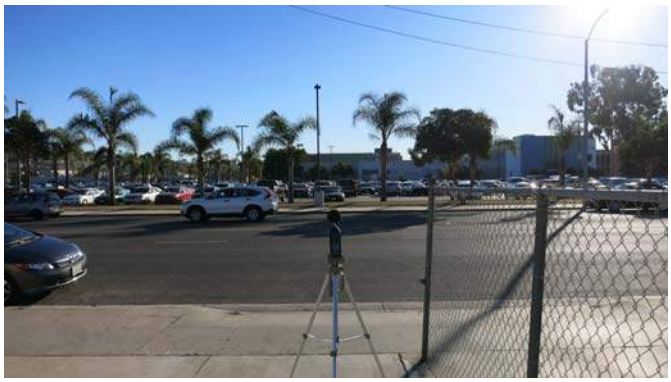
Noise Measurement Site 1 - Looking Southwest

Noise Measurement Site 1 - Looking West

Noise Measurement Site 1 - Looking Northwest

Noise Measurement Site 2 - Looking North

Noise Measurement Site 2 - Looking Northeast



Noise Measurement Site 2 - Looking East

Noise Measurement Site 2 - Looking Southeast

Noise Measurement Site 2 - Looking South

Noise Measurement Site 2 - Looking Southwest

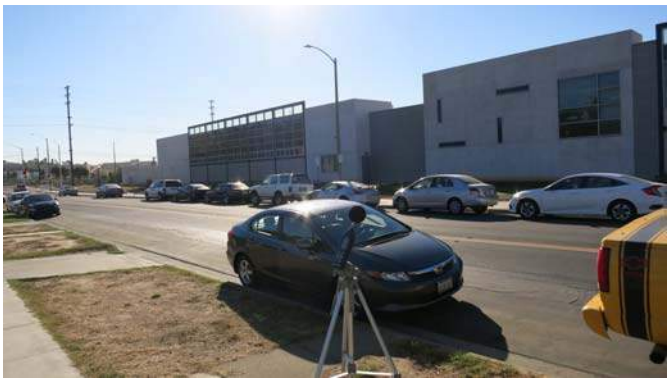
Noise Measurement Site 2 - Looking West

Noise Measurement Site 2 - Looking Northwest

Noise Measurement Site 3 - Looking North

Noise Measurement Site 3 - Looking Northeast

Noise Measurement Site 3 - Looking East



Noise Measurement Site 3 - Looking Southeast

Noise Measurement Site 3 - Looking South

Noise Measurement Site 3 - Looking Southwest

Noise Measurement Site 3 - Looking West

Noise Measurement Site 3 - Looking Northwest

General Information

Serial Number	02509
Model	831
Firmware Version	2.301
Filename	831_Data.001
User	GT
Job Description	LBCCD - PCC Master Plan
Location	In front of Home at 1770 Walnut Ave
Measurement Description	
Start Time	Wednesday, 2017 October 25 08:22:51
Stop Time	Wednesday, 2017 October 25 08:37:52
Duration	00:15:00.6
Run Time	00:15:00.6
Pause	00:00:00.0
Pre Calibration	Wednesday, 2017 October 25 08:21:27
Post Calibration	None
Calibration Deviation	---

Note

Approx 20 ft east of Walnut Ave CL and 190 ft south of PCH CL
79F, 29.86 in Hg, 25% Hu, 2 mph wind, clear sky

Overall Data

LAeq		63.1	dB
LASmax	2017 Oct 25 08:33:20	81.9	dB
LApeak (max)	2017 Oct 25 08:36:59	95.7	dB
LASmin	2017 Oct 25 08:30:14	53.0	dB
LCeq		75.1	dB
LAeq		63.1	dB
LCeq - LAeq		12.0	dB
LAIeq		66.0	dB
LAeq		63.1	dB
LAIeq - LAeq		2.9	dB
Ldn		63.1	dB
LDay 07:00-23:00		63.1	dB
LNight 23:00-07:00		---	dB
Lden		63.1	dB
LDay 07:00-19:00		63.1	dB
LEvening 19:00-23:00		---	dB
LNight 23:00-07:00		---	dB
LAE		92.7	dB
# Overloads		0	
Overload Duration		0.0	s
# OBA Overloads		0	
OBA Overload Duration		0.0	s

Statistics

LAS5.00	67.5	dBA
LAS10.00	65.3	dBA
LAS33.30	61.8	dBA
LAS50.00	60.5	dBA
LAS66.60	59.3	dBA
LAS90.00	56.5	dBA
LAS > 65.0 dB (Exceedence Counts / Duration)	24 / 180.7	s
LAS > 85.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0 / 0.0	s

Settings

RMS Weight	A Weighting	
Peak Weight	A Weighting	
Detector	Slow	
Preamp	PRM831	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Freq. Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Gain	+0	dB
Under Range Limit	26.1	dB
Under Range Peak	75.2	dB
Noise Floor	16.9	dB
Overload	142.7	dB

1/1 Spectra

Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k
LZeq	57.8	61.4	69.9	72.5	69.6	63.9	59.8	58.4	53.3	45.2	41.4	42.5
LZSmax	82.4	75.4	78.9	93.3	83.3	85.7	80.1	74.4	68.9	60.3	58.2	47.0
LZSmin	47.5	55.0	60.1	59.6	54.9	51.7	50.3	48.5	42.3	37.0	38.7	42.3

1/3 Spectra

Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
LZeq	54.4	52.7	52.8	55.3	56.6	57.7	66.5	63.5	65.1	68.6	67.6	66.9
LZSmax	80.4	75.3	72.4	71.3	73.8	73.4	78.0	75.8	77.6	91.7	90.1	86.9
LZSmin	37.2	41.7	43.1	46.4	45.5	49.3	51.5	53.5	54.7	53.6	54.2	52.7

Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	64.9	66.0	62.8	58.8	58.4	60.0	55.0	54.9	54.6	54.2	53.8	52.5
LZSmax	79.1	82.1	83.3	75.1	77.4	85.1	76.7	71.6	74.3	70.8	67.7	67.7
LZSmin	50.4	50.5	48.3	47.1	46.7	45.5	44.9	45.3	45.0	44.3	43.4	41.6

Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	50.7	47.8	45.5	42.7	39.4	37.3	36.4	37.4	35.9	36.8	37.3	39.0
LZSmax	66.4	64.3	61.5	57.2	55.6	53.6	52.7	57.5	48.2	45.6	45.4	39.6
LZSmin	39.5	36.6	34.3	32.9	31.7	31.8	32.7	33.7	34.9	36.3	37.1	38.8

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	25 Oct 2017 08:21:25	-25.2
PRM831	11 Oct 2017 12:05:04	-25.5
PRM831	10 Oct 2017 14:07:23	-25.2
PRM831	07 Oct 2017 16:05:24	-25.9
PRM831	04 Jul 2017 12:01:07	-25.8
PRM831	22 Jun 2017 14:02:37	-26.3
PRM831	22 Jun 2017 12:06:39	-25.9
PRM831	06 Apr 2017 13:35:04	-25.9
PRM831	05 Apr 2017 10:29:19	-25.5
PRM831	28 Mar 2017 11:12:45	-25.8
PRM831	02 Nov 2016 10:44:45	-25.2

General Information

Serial Number	02509
Model	831
Firmware Version	2.301
Filename	831_Data.002
User	GT
Job Description	LBCCD - PCC Master Plan
Location	On Driveway at 1857 Orange Ave
Measurement Description	
Start Time	Wednesday, 2017 October 25 08:46:25
Stop Time	Wednesday, 2017 October 25 09:01:25
Duration	00:15:00.3
Run Time	00:15:00.3
Pause	00:00:00.0
Pre Calibration	Wednesday, 2017 October 25 08:21:25
Post Calibration	None
Calibration Deviation	---

Note

Approx 50 ft west of Orange Ave CL and 125 ft south of 19th St CL
79 F, 29.86 in Hg, 25% Hu, 2 mph wind, clear sky

Overall Data

LAeq		65.7	dB
LASmax	2017 Oct 25 08:49:53	76.7	dB
LApeak (max)	2017 Oct 25 08:51:51	100.3	dB
LASmin	2017 Oct 25 08:58:29	51.2	dB
LCeq		74.6	dB
LAeq		65.7	dB
LCeq - LAeq		8.9	dB
LAIeq		68.2	dB
LAeq		65.7	dB
LAIeq - LAeq		2.5	dB
Ldn		65.7	dB
LDay 07:00-23:00		65.7	dB
LNight 23:00-07:00		---	dB
Lden		65.7	dB
LDay 07:00-19:00		65.7	dB
LEvening 19:00-23:00		---	dB
LNight 23:00-07:00		---	dB
LAE		95.2	dB
# Overloads		0	
Overload Duration		0.0	s
# OBA Overloads		0	
OBA Overload Duration		0.0	s

Statistics

LAS5.00	70.4	dBA
LAS10.00	68.7	dBA
LAS33.30	65.7	dBA
LAS50.00	64.0	dBA
LAS66.60	61.9	dBA
LAS90.00	56.6	dBA
LAS > 65.0 dB (Exceedence Counts / Duration)	38 / 457.4	s
LAS > 85.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0 / 0.0	s

Settings

RMS Weight	A Weighting	
Peak Weight	A Weighting	
Detector	Slow	
Preamp	PRM831	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Freq. Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Gain	+0	dB
Under Range Limit	26.1	dB
Under Range Peak	75.2	dB
Noise Floor	16.9	dB
Overload	142.7	dB

1/1 Spectra

Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k
LZeq	58.8	61.6	69.2	71.8	68.1	62.3	61.0	62.7	57.5	48.2	44.1	43.4
LZSmax	81.0	76.6	77.9	92.2	87.0	76.4	73.7	74.3	69.2	61.9	65.2	62.7
LZSmin	47.8	54.2	60.1	60.8	57.9	49.4	46.8	46.4	39.9	35.7	38.8	42.3

1/3 Spectra

Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
LZeq	53.7	53.4	55.5	54.7	56.4	58.6	62.6	62.1	66.9	64.7	66.8	68.8
LZSmax	75.0	74.7	79.0	72.7	73.9	73.3	75.4	73.8	76.9	76.7	83.0	92.4
LZSmin	36.7	39.8	43.3	42.0	47.7	49.9	53.9	53.0	54.2	55.7	50.3	51.0

Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	64.5	62.6	61.4	58.7	57.4	56.0	55.7	56.1	56.8	57.9	58.6	57.2
LZSmax	84.2	75.7	79.7	73.8	72.6	71.9	69.9	69.3	71.0	72.0	70.2	66.6
LZSmin	53.6	50.8	50.5	35.2	41.1	38.8	42.7	41.1	41.8	41.4	39.2	41.1

Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	55.3	51.6	48.8	45.5	42.7	40.3	38.8	41.2	36.9	38.9	37.8	39.3
LZSmax	66.2	65.4	62.1	60.2	58.6	58.2	59.9	64.9	50.3	62.6	50.4	51.9
LZSmin	37.6	33.1	30.6	30.1	30.7	30.0	32.7	32.5	35.0	36.2	37.1	38.8

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	25 Oct 2017 08:21:25	-25.2
PRM831	11 Oct 2017 12:05:04	-25.5
PRM831	10 Oct 2017 14:07:23	-25.2
PRM831	07 Oct 2017 16:05:24	-25.9
PRM831	04 Jul 2017 12:01:07	-25.8
PRM831	22 Jun 2017 14:02:37	-26.3
PRM831	22 Jun 2017 12:06:39	-25.9
PRM831	06 Apr 2017 13:35:04	-25.9
PRM831	05 Apr 2017 10:29:19	-25.5
PRM831	28 Mar 2017 11:12:45	-25.8
PRM831	02 Nov 2016 10:44:45	-25.2

General Information

Serial Number	02509
Model	831
Firmware Version	2.301
Filename	831_Data.003
User	GT
Job Description	LBCCD - PCC Master Plan
Location	In front of home at 1441 20th Street
Measurement Description	
Start Time	Wednesday, 2017 October 25 09:05:26
Stop Time	Wednesday, 2017 October 25 09:21:26
Duration	00:16:00.7
Run Time	00:16:00.7
Pause	00:00:00.0
Pre Calibration	Wednesday, 2017 October 25 08:21:25
Post Calibration	None
Calibration Deviation	---

Note

Approx 20 ft north of 20th St CL and 60 ft east of Alamitos Ave CL
80 F, 29.86 in Hg, 24% Hu, 3 mph wind, clear sky

Overall Data

LAeq		55.0	dB
LASmax	2017 Oct 25 09:09:28	64.0	dB
LApeak (max)	2017 Oct 25 09:09:50	86.8	dB
LASmin	2017 Oct 25 09:19:50	49.4	dB
LCeq		67.8	dB
LAeq		55.0	dB
LCeq - LAeq		12.8	dB
LAIeq		57.5	dB
LAeq		55.0	dB
LAIeq - LAeq		2.4	dB
Ldn		55.0	dB
LDay 07:00-23:00		55.0	dB
LNight 23:00-07:00		---	dB
Lden		55.0	dB
LDay 07:00-19:00		55.0	dB
LEvening 19:00-23:00		---	dB
LNight 23:00-07:00		---	dB
LAE		84.8	dB
# Overloads		0	
Overload Duration		0.0	s
# OBA Overloads		0	
OBA Overload Duration		0.0	s

Statistics

LAS5.00	59.9	dBA
LAS10.00	58.5	dBA
LAS33.30	54.3	dBA
LAS50.00	52.8	dBA
LAS66.60	51.8	dBA
LAS90.00	50.8	dBA
LAS > 65.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LAS > 85.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0 / 0.0	s

Settings

RMS Weight	A Weighting	
Peak Weight	A Weighting	
Detector	Slow	
Preamp	PRM831	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Freq. Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Gain	+0	dB
Under Range Limit	26.1	dB
Under Range Peak	75.2	dB
Noise Floor	16.9	dB
Overload	142.7	dB

1/1 Spectra

Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k
LZeq	59.5	65.0	63.9	64.6	61.5	53.0	51.5	51.4	45.4	38.0	39.3	42.5
LZSmax	75.7	75.5	74.8	79.5	75.1	66.1	61.2	61.9	56.8	48.6	45.3	42.9
LZSmin	53.7	59.8	57.0	59.5	56.9	48.2	47.0	44.5	36.8	35.6	38.9	42.3

1/3 Spectra

Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
LZeq	52.9	56.1	55.6	52.6	61.7	61.7	59.2	59.5	58.6	59.2	60.6	59.6
LZSmax	72.8	73.0	72.7	75.3	69.5	73.8	72.0	73.0	74.5	77.3	75.5	76.8
LZSmin	41.7	46.4	48.0	46.0	43.2	55.0	53.3	53.7	52.1	46.9	54.1	54.0

Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	57.9	56.7	55.2	49.4	47.5	47.3	47.0	46.7	46.5	46.8	47.8	44.9
LZSmax	72.8	74.9	70.3	65.3	58.1	55.5	57.0	57.5	58.8	59.5	58.3	55.3
LZSmin	52.4	49.5	50.1	43.3	40.3	43.3	42.9	41.9	40.8	40.4	39.2	36.9

Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	43.1	39.8	36.4	34.0	32.8	32.6	33.3	34.3	35.7	36.4	37.4	39.2
LZSmax	54.9	52.3	52.1	45.2	44.3	42.6	43.1	41.9	37.9	37.4	38.2	39.4
LZSmin	33.5	31.0	29.8	29.8	30.5	31.4	32.6	33.9	35.3	36.2	37.1	39.0

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	25 Oct 2017 08:21:25	-25.2
PRM831	11 Oct 2017 12:05:04	-25.5
PRM831	10 Oct 2017 14:07:23	-25.2
PRM831	07 Oct 2017 16:05:24	-25.9
PRM831	04 Jul 2017 12:01:07	-25.8
PRM831	22 Jun 2017 14:02:37	-26.3
PRM831	22 Jun 2017 12:06:39	-25.9
PRM831	06 Apr 2017 13:35:04	-25.9
PRM831	05 Apr 2017 10:29:19	-25.5
PRM831	28 Mar 2017 11:12:45	-25.8
PRM831	02 Nov 2016 10:44:45	-25.2

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/17/2018
Case Description: PCC 2041 Facilities Master Plan - Demolition

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Mary Butler School /	Residential	55	55	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	90	0
Dozer	No	40		81.7	140	0
Dozer	No	40		81.7	190	0
Excavator	No	40		80.7	240	0
Excavator	No	40		80.7	290	0
Excavator	No	40		80.7	340	0

			Results			
	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	84.5	77.5	N/A	N/A	N/A	N/A
Dozer	72.7	68.7	N/A	N/A	N/A	N/A
Dozer	70.1	66.1	N/A	N/A	N/A	N/A
Excavator	67.1	63.1	N/A	N/A	N/A	N/A
Excavator	65.4	61.5	N/A	N/A	N/A	N/A
Excavator	64.1	60.1	N/A	N/A	N/A	N/A
Total	**85**	**79**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes on East Side	Residential	63	63	63.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	250	0
Dozer	No	40		81.7	300	0
Dozer	No	40		81.7	350	0
Excavator	No	40		80.7	400	0
Excavator	No	40		80.7	450	0
Excavator	No	40		80.7	500	0

Results

Equipment	Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq
Concrete Saw	76	69	N/A	N/A	N/A	N/A
Dozer	66	62	N/A	N/A	N/A	N/A
Dozer	65	61	N/A	N/A	N/A	N/A
Excavator	63	59	N/A	N/A	N/A	N/A
Excavator	62	58	N/A	N/A	N/A	N/A
Excavator	61	57	N/A	N/A	N/A	N/A
Total	**76**	**71**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes on West Sid	Residential	66	66	65.7

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	380	0
Dozer	No	40		81.7	430	0
Dozer	No	40		81.7	480	0
Excavator	No	40		80.7	530	0
Excavator	No	40		80.7	580	0
Excavator	No	40		80.7	630	0

Equipment	Calculated (dBA) *Lmax	Leq	Results Day Lmax	Noise Limits (dBA) Day Leq	Evening Lmax	Evening Leq
Concrete Saw	72	65	N/A	N/A	N/A	N/A
Dozer	63	59	N/A	N/A	N/A	N/A
Dozer	62	58	N/A	N/A	N/A	N/A
Excavator	60	56	N/A	N/A	N/A	N/A
Excavator	59	55	N/A	N/A	N/A	N/A
Excavator	59	55	N/A	N/A	N/A	N/A
Total	**72**	**68**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes on North Sid	Residential	55	55	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	510	0
Dozer	No	40		81.7	560	0
Dozer	No	40		81.7	610	0
Excavator	No	40		80.7	660	0
Excavator	No	40		80.7	710	0
Excavator	No	40		80.7	760	0

		Results					
	Calculated (dBA)			Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	69	62	N/A	N/A	N/A	N/A
Dozer	61	57	N/A	N/A	N/A	N/A
Dozer	60	56	N/A	N/A	N/A	N/A
Excavator	58	54	N/A	N/A	N/A	N/A
Excavator	58	54	N/A	N/A	N/A	N/A
Excavator	57	53	N/A	N/A	N/A	N/A
Total	**69**	**65**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/17/2018
Case Description: PCC 2041 Facilities Master Plan - Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Mary Butler School	Residential	55	55	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		270	0
Dozer	No	40		81.7	320	0
Excavator	No	40		80.7	370	0
Excavator	No	40		80.7	420	0
Scraper	No	40		83.6	470	0
Scraper	No	40		83.6	520	0
Tractor	No	40	84		570	0
Tractor	No	40	84		620	0

Equipment	Calculated (dBA) *Lmax	Leq	Results Day Lmax	Noise Limits (dBA) Day Leq	Evening Lmax	Evening Leq
Grader	70.4	66.4	N/A	N/A	N/A	N/A
Dozer	65.5	61.6	N/A	N/A	N/A	N/A
Excavator	63.3	59.3	N/A	N/A	N/A	N/A
Excavator	62.2	58.2	N/A	N/A	N/A	N/A
Scraper	64.1	60.1	N/A	N/A	N/A	N/A
Scraper	63.2	59.3	N/A	N/A	N/A	N/A
Tractor	62.9	58.9	N/A	N/A	N/A	N/A
Tractor	62.1	58.2	N/A	N/A	N/A	N/A
Total	**70**	**70**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes on East Sid	Residential	63	63	63.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		250	0
Dozer	No	40.0		81.7	300	0
Excavator	No	40.0		80.7	350	0
Excavator	No	40.0		80.7	400	0
Scraper	No	40.0		83.6	450	0
Scraper	No	40		83.6	500	0
Tractor	No	40	84		550	0
Tractor	No	40	84		600	0

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader		71.0	67.0	N/A	N/A	N/A	N/A
Dozer		66.1	62.1	N/A	N/A	N/A	N/A
Excavator		63.8	59.8	N/A	N/A	N/A	N/A
Excavator		62.6	58.7	N/A	N/A	N/A	N/A
Scraper		64.5	60.5	N/A	N/A	N/A	N/A
Scraper		63.6	59.6	N/A	N/A	N/A	N/A
Tractor		63.2	59.2	N/A	N/A	N/A	N/A
Tractor		62.4	58.4	N/A	N/A	N/A	N/A
	Total	**71**	**71**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes on West Sid	Residential	65.7	65.7	65.7

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		380	0
Dozer	No	40		81.7	430	0
Excavator	No	40		80.7	480	0
Excavator	No	40		80.7	530	0
Scraper	No	40		83.6	580	0
Scraper	No	40		83.6	630	0
Tractor	No	40	84		680	0
Tractor	No	40	84		730	0

Equipment	Calculated (dBA) *Lmax	Leq	Results Day Lmax	Noise Limits (dBA) Day Leq	Evening Lmax	Evening Leq
Grader	67.4	63.4	N/A	N/A	N/A	N/A
Dozer	63.0	59.0	N/A	N/A	N/A	N/A
Excavator	61.1	57.1	N/A	N/A	N/A	N/A
Excavator	60.2	56.2	N/A	N/A	N/A	N/A
Scraper	62.3	58.3	N/A	N/A	N/A	N/A
Scraper	61.6	57.6	N/A	N/A	N/A	N/A
Tractor	61.3	57.3	N/A	N/A	N/A	N/A
Tractor	60.7	56.7	N/A	N/A	N/A	N/A
Total	**67**	**68**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes on North Sic	Residential	55	55	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		740	0
Dozer	No	40		81.7	790	0
Excavator	No	40		80.7	840	0
Excavator	No	40		80.7	890	0
Scraper	No	40		83.6	940	0
Scraper	No	40		83.6	990	0
Tractor	No	40	84		1040	0
Tractor	No	40	84		1090	0

Equipment	Calculated (dBA) *Lmax	Leq	Results Day Lmax	Noise Limits (dBA) Day Leq	Evening Lmax	Evening Leq
Grader	61.6	57.6	N/A	N/A	N/A	N/A
Dozer	57.7	53.7	N/A	N/A	N/A	N/A
Excavator	56.2	52.2	N/A	N/A	N/A	N/A
Excavator	55.7	51.7	N/A	N/A	N/A	N/A
Scraper	58.1	54.1	N/A	N/A	N/A	N/A
Scraper	57.6	53.7	N/A	N/A	N/A	N/A
Tractor	57.6	53.7	N/A	N/A	N/A	N/A
Tractor	57.2	53.3	N/A	N/A	N/A	N/A
Total	**62**	**63**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/17/2018
Case Description: PCC 2041 Facilities Master Plan - Building Construction

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Mary Butler School /	Residential	55	55	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	90	0
Gradall	No	40		83.4	140	0
Gradall	No	40		83.4	190	0
Gradall	No	40		83.4	240	0
Generator	No	50		80.6	290	0
Welder / Torch	No	40		74	340	0
Tractor	No	40	84		390	0
Tractor	No	40	84		440	0
Tractor	No	40	84		490	0

		Calculated (dBA)		Results	Noise Limits (dBA)		
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		75.4	67.5	N/A	N/A	N/A	N/A
Gradall		74.5	70.5	N/A	N/A	N/A	N/A
Gradall		71.8	67.8	N/A	N/A	N/A	N/A
Gradall		69.8	65.8	N/A	N/A	N/A	N/A
Generator		65.4	62.4	N/A	N/A	N/A	N/A
Welder / Torch		57.3	53.4	N/A	N/A	N/A	N/A
Tractor		66.2	62.2	N/A	N/A	N/A	N/A
Tractor		65.1	61.1	N/A	N/A	N/A	N/A
Tractor		64.2	60.2	N/A	N/A	N/A	N/A
	Total	**75**	**75**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes on East Side	Residential	63.1	63.1	63.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	275	0
Gradall	No	40		83.4	325	0
Gradall	No	40		83.4	375	0
Gradall	No	40		83.4	425	0
Generator	No	50		80.6	475	0
Welder / Torch	No	40		74	525	0
Tractor	No	40	84		575	0
Tractor	No	40	84		625	0
Tractor	No	40	84		675	0

Equipment	Calculated (dBA) *Lmax	Leq	Results Day Lmax	Noise Limits (dBA) Day Leq	Evening Lmax	Evening Leq
Crane	65.7	57.8	N/A	N/A	N/A	N/A
Gradall	67.1	63.2	N/A	N/A	N/A	N/A
Gradall	65.9	61.9	N/A	N/A	N/A	N/A
Gradall	64.8	60.8	N/A	N/A	N/A	N/A
Generator	61.1	58.1	N/A	N/A	N/A	N/A
Welder / Torch	53.6	49.6	N/A	N/A	N/A	N/A
Tractor	62.8	58.8	N/A	N/A	N/A	N/A
Tractor	62.1	58.1	N/A	N/A	N/A	N/A
Tractor	61.4	57.4	N/A	N/A	N/A	N/A
Total	**67**	**69**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes on West Sid	Residential	66	66	65.7

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	270	0
Gradall	No	40		83.4	320	0
Gradall	No	40		83.4	370	0
Gradall	No	40		83.4	420	0
Generator	No	50		80.6	470	0
Welder / Torch	No	40		74	520	0
Tractor	No	40	84		570	0
Tractor	No	40	84		620	0
Tractor	No	40	84		670	0

Equipment	Calculated (dBA) *Lmax	Leq	Results Day Lmax	Noise Limits (dBA) Day Leq	Evening Lmax	Evening Leq
Crane	65.9	57.9	N/A	N/A	N/A	N/A
Gradall	67.3	63.3	N/A	N/A	N/A	N/A
Gradall	66.0	62.0	N/A	N/A	N/A	N/A
Gradall	64.9	60.9	N/A	N/A	N/A	N/A
Generator	61.2	58.2	N/A	N/A	N/A	N/A
Welder / Torch	53.7	49.7	N/A	N/A	N/A	N/A
Tractor	62.9	58.9	N/A	N/A	N/A	N/A
Tractor	62.1	58.2	N/A	N/A	N/A	N/A
Tractor	61.5	57.5	N/A	N/A	N/A	N/A
Total	**67**	**69**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes on North Sid	Residential	55	55	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	510	0
Gradall	No	40		83.4	560	0
Gradall	No	40		83.4	610	0
Gradall	No	40		83.4	660	0
Generator	No	50		80.6	710	0
Welder / Torch	No	40		74	760	0
Tractor	No	40	84		810	0
Tractor	No	40	84		860	0
Tractor	No	40	84		910	0

Results

Equipment	Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq
Crane	60.4	52.4	N/A	N/A	N/A	N/A
Gradall	62.4	58.4	N/A	N/A	N/A	N/A
Gradall	61.7	57.7	N/A	N/A	N/A	N/A
Gradall	61.0	57.0	N/A	N/A	N/A	N/A
Generator	57.6	54.6	N/A	N/A	N/A	N/A
Welder / Torch	50.4	46.4	N/A	N/A	N/A	N/A
Tractor	59.8	55.8	N/A	N/A	N/A	N/A
Tractor	59.3	55.3	N/A	N/A	N/A	N/A
Tractor	58.8	54.8	N/A	N/A	N/A	N/A
Total	**62**	**65**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/17/2018
Case Description: PCC 2041 Facilities Master Plan - Paving

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Mary Butler School /	Residential	55	55	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	270	0
Paver	No	50		77.2	320	0
Paver	No	50		77.2	370	0
Paver	No	50		77.2	420	0
Roller	No	20		80	470	0
Roller	No	20		80	520	0

			Results			
	Calculated (dBA)			Noise Limits (dBA)		
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	62.6	59.6	N/A	N/A	N/A	N/A
Paver	61.1	58.1	N/A	N/A	N/A	N/A
Paver	59.8	56.8	N/A	N/A	N/A	N/A
Paver	58.7	55.7	N/A	N/A	N/A	N/A
Roller	60.5	53.5	N/A	N/A	N/A	N/A
Roller	59.7	52.7	N/A	N/A	N/A	N/A
Total	**63**	**65**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes on East Side	Residential	63	63	63.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	250	0
Paver	No	50		77.2	300	0
Paver	No	50		77.2	350	0
Paver	No	50		77.2	400	0
Roller	No	20		80	450	0
Roller	No	20		80	500	0

Results

Equipment	Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq
Paver	63.2	60.2	N/A	N/A	N/A	N/A
Paver	61.7	58.6	N/A	N/A	N/A	N/A
Paver	60.3	57.3	N/A	N/A	N/A	N/A
Paver	59.2	56.1	N/A	N/A	N/A	N/A
Roller	60.9	53.9	N/A	N/A	N/A	N/A
Roller	60.0	53.0	N/A	N/A	N/A	N/A
Total	**63**	**65**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes on West Sid	Residential	65.7	65.7	65.7

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	380	0
Paver	No	50		77.2	430	0
Paver	No	50		77.2	480	0
Paver	No	50		77.2	530	0
Roller	No	20		80	580	0
Roller	No	20		80	630	0

Results

	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	59.6	56.6	N/A	N/A	N/A	N/A
Paver	58.5	55.5	N/A	N/A	N/A	N/A
Paver	57.6	54.6	N/A	N/A	N/A	N/A
Paver	56.7	53.7	N/A	N/A	N/A	N/A
Roller	58.7	51.7	N/A	N/A	N/A	N/A
Roller	58.0	51.0	N/A	N/A	N/A	N/A
Total	**60**	**62**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes on North Sid	Residential	55	55	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	740	0
Paver	No	50		77.2	790	0
Paver	No	50		77.2	840	0
Paver	No	50		77.2	890	0
Roller	No	20		80	940	0
Roller	No	20		80	990	0

		Calculated (dBA)		Results	Noise Limits (dBA)		
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		53.8	50.8	N/A	N/A	N/A	N/A
Paver		53.2	50.2	N/A	N/A	N/A	N/A
Paver		52.7	49.7	N/A	N/A	N/A	N/A
Paver		52.2	49.2	N/A	N/A	N/A	N/A
Roller		54.5	47.5	N/A	N/A	N/A	N/A
Roller		54.1	47.1	N/A	N/A	N/A	N/A
	Total	**55**	**57**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/17/2018
Case Description: PCC 2041 Facilities Master Plan - Painting

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Mary Butler School /	Residential	55	55	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	270	0

Equipment		Calculated (dBA) *Lmax	Leq	Results Day Lmax	Day Leq	Evening Lmax	Evening Leq
Compressor (air)		63	59	N/A	N/A	N/A	N/A
	Total	**63**	**59**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes on East Side	Residential	63.1	63.1	63.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	275	0

Equipment		Calculated (dBA) *Lmax	Leq	Results Day Lmax	Day Leq	Evening Lmax	Evening Leq
Compressor (air)		62.9	58.9	N/A	N/A	N/A	N/A
	Total	**63**	**59**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes on West Sid	Residential	65.7	65.7	65.7

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	270	0

		Calculated (dBA)		Results Noise Limits (dBA) Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		63.0	59.0	N/A	N/A	N/A	N/A
	Total	**63**	**59**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes on North Sid	Residential	55	55	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	510	0

		Calculated (dBA)		Results Noise Limits (dBA) Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		58	54	N/A	N/A	N/A	N/A
	Total	**58**	**54**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS **Project: LBCC 2041 Master Plan for the LAC Improvements**

Site Conditions: Soft

	Vehicle Mix 1 (Vehicle Mix 1 (Local))				Vehicle Mix 2 (Vehicle Mix 2 (Arterial))				Vehicle Mix 3 (SR-1)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	69.50%	12.90%	9.60%	92.00%	68.04%	13.94%	16.31%	98.29%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.44%	0.06%	1.50%	3.00%	0.90%	0.16%	0.45%	1.51%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	2.40%	0.10%	2.50%	5.00%	0.11%	0.01%	0.08%	0.20%

Road Name: Atlantic Avenue **Segment: North of Pacific Coast Highway**

Average Daily Traffic: 18950 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 36.66 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.67	1.92	-1.20	67.5	65.1	63.8	57.8	66.2	66.84	70 dBA:	**33**	**36**
Medium Trucks	74.83	-13.20	1.92	-1.20	62.3	43.1	35.4	44.6	50.7	50.75	65 dBA:	**71**	**77**
Heavy Trucks	80.05	-10.98	1.92	-1.20	69.8	52.8	45.0	54.2	60.4	60.41	60 dBA:	**154**	**166**
				Total:	**72.3**	**65.4**	**63.9**	**59.5**	**67.3**	**67.8**	55 dBA:	**331**	**358**

Road Name: Atlantic Avenue **Segment: South of Pacific Coast Highway**

Average Daily Traffic: 20280 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 36.66 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.96	1.92	-1.20	67.8	65.4	64.1	58.1	66.5	67.1	70 dBA:	**35**	**37**
Medium Trucks	74.83	-12.90	1.92	-1.20	62.6	43.4	35.7	44.9	51.0	51.0	65 dBA:	**75**	**81**
Heavy Trucks	80.05	-10.69	1.92	-1.20	70.1	53.1	45.3	54.5	60.7	60.7	60 dBA:	**161**	**174**
				Total:	**72.6**	**65.7**	**64.2**	**59.8**	**67.6**	**68.1**	55 dBA:	**346**	**374**

Road Name: Martin Luther King Jr. Avenue **Segment: North of Pacific Coast Highway**

Average Daily Traffic: 6440 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 37.47 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-2.10	1.78	-1.20	61.0	58.9	57.6	51.5	60.0	60.6	70 dBA:	**9**	**10**
Medium Trucks	73.11	-19.34	1.78	-1.20	54.4	33.1	39.1	20.8	34.0	36.7	65 dBA:	**19**	**20**
Heavy Trucks	80.26	-23.30	1.78	-1.20	57.5	32.2	28.8	33.4	39.6	39.7	60 dBA:	**40**	**44**
				Total:	**63.2**	**58.9**	**57.6**	**51.6**	**60.0**	**60.6**	55 dBA:	**86**	**95**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS

Project: LBCC 2041 Master Plan for the LAC Improvements
Site Conditions: Soft

Road Name: Orange Avenue **Segment: North of Hill Street**
Average Daily Traffic: 16180 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Avenue

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.07 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	0.98	1.67	-1.20	66.6	64.2	62.9	56.8	65.3	65.9	70 dBA:	**26**	**28**
Medium Trucks	74.83	-13.89	1.67	-1.20	61.4	42.2	34.4	43.6	49.8	49.8	65 dBA:	**56**	**60**
Heavy Trucks	80.05	-11.67	1.67	-1.20	68.9	51.9	44.1	53.3	59.4	59.5	60 dBA:	**120**	**129**
				Total:	**71.3**	**64.5**	**63.0**	**58.6**	**66.4**	**66.9**	55 dBA:	**258**	**279**

Road Name: Orange Avenue **Segment: North of 20th Street**
Average Daily Traffic: 17470 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 36.66 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.31	1.92	-1.20	67.1	64.8	63.5	57.4	65.9	66.5	70 dBA:	**31**	**34**
Medium Trucks	74.83	-13.55	1.92	-1.20	62.0	42.8	35.0	44.2	50.4	50.4	65 dBA:	**68**	**73**
Heavy Trucks	80.05	-11.33	1.92	-1.20	69.4	52.4	44.7	53.9	60.0	60.1	60 dBA:	**145**	**157**
				Total:	**71.9**	**65.0**	**63.5**	**59.2**	**67.0**	**67.5**	55 dBA:	**313**	**339**

Road Name: Orange Avenue **Segment: North of E 19th Street/Alamitos Avenue**
Average Daily Traffic: 16910 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 36.66 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	2.63	1.92	-1.20	62.8	60.4	59.1	53.1	61.5	62.1	70 dBA:	**20**	**21**
Medium Trucks	71.09	-12.23	1.92	-1.20	59.6	40.4	32.6	41.8	47.9	48.0	65 dBA:	**43**	**45**
Heavy Trucks	78.74	-10.01	1.92	-1.20	69.4	52.5	44.7	53.9	60.0	60.1	60 dBA:	**92**	**97**
				Total:	**70.6**	**61.1**	**59.3**	**56.7**	**64.0**	**64.3**	55 dBA:	**198**	**210**

Road Name: Orange Avenue **Segment: North of Pacific Coast Highway**
Average Daily Traffic: 17340 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 21.07 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	2.74	5.53	-1.20	66.5	64.1	62.8	56.8	65.2	65.9	70 dBA:	**28**	**30**
Medium Trucks	71.09	-12.12	5.53	-1.20	63.3	44.1	36.3	45.5	51.7	51.7	65 dBA:	**60**	**64**
Heavy Trucks	78.74	-9.90	5.53	-1.20	73.2	56.2	48.4	57.6	63.8	63.8	60 dBA:	**130**	**138**
				Total:	**74.4**	**64.8**	**63.0**	**60.4**	**67.7**	**68.1**	55 dBA:	**280**	**297**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS

Project: LBCC 2041 Master Plan for the LAC Improvements
Site Conditions: Soft

Road Name: Orange Avenue **Segment: South of Pacific Coast Highway**
Average Daily Traffic: 19040 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 48 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	2.61	0.16	-1.20	64.1	62.0	60.6	54.6	63.1	63.7	70 dBA:	**17**	**19**
Medium Trucks	73.11	-14.63	0.16	-1.20	57.4	36.2	42.2	23.9	37.1	39.8	65 dBA:	**37**	**41**
Heavy Trucks	80.26	-18.59	0.16	-1.20	60.6	35.3	31.9	36.5	42.7	42.8	60 dBA:	**81**	**89**
				Total:	**66.3**	**62.0**	**60.7**	**54.7**	**63.1**	**63.7**	55 dBA:	**173**	**191**

Road Name: Walnut Avenue **Segment: North of Hill Street**
Average Daily Traffic: 6710 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 48 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-1.13	0.16	-1.20	57.3	55.1	53.8	47.8	56.2	56.9	70 dBA:	**6**	**7**
Medium Trucks	71.09	-18.37	0.16	-1.20	51.7	30.4	36.5	18.2	31.3	34.1	65 dBA:	**13**	**15**
Heavy Trucks	78.74	-22.33	0.16	-1.20	55.4	30.0	26.6	31.3	37.5	37.6	60 dBA:	**28**	**31**
				Total:	**60.1**	**55.2**	**53.9**	**47.9**	**56.3**	**56.9**	55 dBA:	**61**	**67**

Road Name: Walnut Avenue **Segment: North of 20th Street**
Average Daily Traffic: 5840 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 120 FEET FROM CENTERLINE (Equiv. Lane Dist: 119.18 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-2.53	-5.76	-1.20	53.0	50.9	49.6	43.6	52.0	52.6	70 dBA:	**8**	**8**
Medium Trucks	73.11	-19.76	-5.76	-1.20	46.4	25.1	31.2	12.9	26.0	28.8	65 dBA:	**16**	**18**
Heavy Trucks	80.26	-23.72	-5.76	-1.20	49.6	24.2	20.8	25.5	31.7	31.8	60 dBA:	**35**	**39**
				Total:	**55.2**	**50.9**	**49.7**	**43.6**	**52.0**	**52.7**	55 dBA:	**76**	**84**

Road Name: Walnut Avenue **Segment: North of Pacific Coast Highway**
Average Daily Traffic: 6560 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 35 FEET FROM CENTERLINE (Equiv. Lane Dist: 32.08 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-2.02	2.79	-1.20	62.1	60.0	58.6	52.6	61.1	61.7	70 dBA:	**9**	**10**
Medium Trucks	73.11	-19.26	2.79	-1.20	55.4	34.2	40.2	21.9	35.1	37.8	65 dBA:	**19**	**21**
Heavy Trucks	80.26	-23.22	2.79	-1.20	58.6	33.3	29.9	34.5	40.7	40.8	60 dBA:	**41**	**46**
				Total:	**64.3**	**60.0**	**58.7**	**52.7**	**61.1**	**61.7**	55 dBA:	**89**	**98**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS

Project: LBCC 2041 Master Plan for the LAC Improvements
Site Conditions: Soft

Road Name: Walnut Avenue **Segment: South of Pacific Coast Highway**
Average Daily Traffic: 4740 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 35 FEET FROM CENTERLINE (Equiv. Lane Dist: 32.08 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-3.43	2.79	-1.20	60.7	58.5	57.2	51.2	59.6	60.3	70 dBA:	**7**	**8**
Medium Trucks	73.11	-20.67	2.79	-1.20	54.0	32.8	38.8	20.5	33.7	36.4	65 dBA:	**15**	**17**
Heavy Trucks	80.26	-24.63	2.79	-1.20	57.2	31.9	28.5	33.1	39.3	39.4	60 dBA:	**33**	**37**
				Total:	**62.9**	**58.6**	**57.3**	**51.3**	**59.7**	**60.3**	55 dBA:	**72**	**79**

Road Name: Cherry Avenue **Segment: North of Pacific Coast Highway**
Average Daily Traffic: 20830 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Minor Avenue

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.07 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.50	1.67	-1.20	69.3	67.0	65.7	59.6	68.0	68.7	70 dBA:	**38**	**41**
Medium Trucks	76.31	-13.37	1.67	-1.20	63.4	44.2	36.4	45.6	51.8	51.8	65 dBA:	**82**	**89**
Heavy Trucks	81.16	-11.15	1.67	-1.20	70.5	53.5	45.7	54.9	61.1	61.1	60 dBA:	**177**	**192**
				Total:	**73.4**	**67.2**	**65.7**	**61.0**	**68.9**	**69.5**	55 dBA:	**381**	**414**

Road Name: Cherry Avenue **Segment: South of Pacific Coast Highway**
Average Daily Traffic: 14950 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 2 Roadway Classification: Minor Avenue

	NOISE PARAMETERS AT 30 FEET FROM CENTERLINE (Equiv. Lane Dist: 18 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	2.10	6.55	-1.20	66.9	64.5	63.2	57.2	65.6	66.2	70 dBA:	**22**	**24**
Medium Trucks	71.09	-12.77	6.55	-1.20	63.7	44.5	36.7	45.9	52.0	52.1	65 dBA:	**48**	**51**
Heavy Trucks	78.74	-10.55	6.55	-1.20	73.5	56.6	48.8	58.0	64.1	64.2	60 dBA:	**103**	**110**
				Total:	**74.7**	**65.2**	**63.4**	**60.7**	**68.1**	**68.4**	55 dBA:	**222**	**236**

Road Name: Hill Street **Segment: West of Orange Avenue**
Average Daily Traffic: 4180 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 53.19 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-3.98	-0.51	-1.20	56.8	54.7	53.4	47.4	55.8	56.4	70 dBA:	**6**	**7**
Medium Trucks	73.11	-21.22	-0.51	-1.20	50.2	28.9	35.0	16.7	29.8	32.6	65 dBA:	**14**	**15**
Heavy Trucks	80.26	-25.17	-0.51	-1.20	53.4	28.0	24.6	29.3	35.5	35.6	60 dBA:	**29**	**32**
				Total:	**59.1**	**54.7**	**53.5**	**47.5**	**55.9**	**56.5**	55 dBA:	**63**	**69**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS

Project: LBCC 2041 Master Plan for the LAC Improvements
Site Conditions: Soft

Road Name: Hill Street **Segment: East of Walnut Avenue**

Average Daily Traffic: 3520 Vehicles | Vehicle Speed: 30 MPH | Vehicle Mix: 1 | Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 42.77 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-4.72	0.91	-1.20	57.5	55.4	54.1	48.1	56.5	57.1	70 dBA:	**6**	**6**
Medium Trucks	73.11	-21.96	0.91	-1.20	50.9	29.6	35.6	17.3	30.5	33.2	65 dBA:	**12**	**13**
Heavy Trucks	80.26	-25.92	0.91	-1.20	54.1	28.7	25.3	30.0	36.2	36.2	60 dBA:	**26**	**29**
				Total:	**59.7**	**55.4**	**54.1**	**48.1**	**56.5**	**57.2**	55 dBA:	**57**	**63**

Road Name: 20th Street **Segment: West of Orange Avenue**

Average Daily Traffic: 3120 Vehicles | Vehicle Speed: 25 MPH | Vehicle Mix: 1 | Roadway Classification: Local

	NOISE PARAMETERS AT 35 FEET FROM CENTERLINE (Equiv. Lane Dist: 33.82 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-4.46	2.44	-1.20	56.2	54.1	52.8	46.8	55.2	55.8	70 dBA:	**4**	**4**
Medium Trucks	71.09	-21.70	2.44	-1.20	50.6	29.4	35.4	17.1	30.3	33.0	65 dBA:	**8**	**9**
Heavy Trucks	78.74	-25.65	2.44	-1.20	54.3	29.0	25.6	30.2	36.4	36.5	60 dBA:	**17**	**19**
				Total:	**59.1**	**54.1**	**52.9**	**46.9**	**55.3**	**55.9**	55 dBA:	**36**	**40**

Road Name: 20th Street **Segment: West of Alimitos Avenue**

Average Daily Traffic: 2060 Vehicles | Vehicle Speed: 25 MPH | Vehicle Mix: 1 | Roadway Classification: Local

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 49.18 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-6.26	0.00	-1.20	52.0	49.9	48.5	42.5	51.0	51.6	70 dBA:	**3**	**3**
Medium Trucks	71.09	-23.50	0.00	-1.20	46.4	25.1	31.2	12.9	26.0	28.8	65 dBA:	**6**	**6**
Heavy Trucks	78.74	-27.45	0.00	-1.20	50.1	24.7	21.3	26.0	32.2	32.3	60 dBA:	**13**	**14**
				Total:	**54.8**	**49.9**	**48.6**	**42.6**	**51.0**	**51.7**	55 dBA:	**27**	**30**

Road Name: 20th Street **Segment: East of Alamitos Avenue**

Average Daily Traffic: 3130 Vehicles | Vehicle Speed: 25 MPH | Vehicle Mix: 1 | Roadway Classification: Local

	NOISE PARAMETERS AT 30 FEET FROM CENTERLINE (Equiv. Lane Dist: 28.62 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-4.44	3.53	-1.20	57.3	55.2	53.9	47.9	56.3	56.9	70 dBA:	**4**	**4**
Medium Trucks	71.09	-21.68	3.53	-1.20	51.7	30.5	36.5	18.2	31.4	34.1	65 dBA:	**8**	**9**
Heavy Trucks	78.74	-25.64	3.53	-1.20	55.4	30.1	26.7	31.3	37.5	37.6	60 dBA:	**17**	**19**
				Total:	**60.2**	**55.2**	**54.0**	**48.0**	**56.4**	**57.0**	55 dBA:	**37**	**41**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS

Project: LBCC 2041 Master Plan for the LAC Improvements
Site Conditions: Soft

Road Name: 20th Street **Segment: East of Walnut Avenue**

Average Daily Traffic: 2660 Vehicles | Vehicle Speed: 25 MPH | Vehicle Mix: 1 | Roadway Classification: Local

	NOISE PARAMETERS AT 30 FEET FROM CENTERLINE (Equiv. Lane Dist: 28.62 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-5.15	3.53	-1.20	56.6	54.5	53.2	47.2	55.6	56.2	70 dBA:	**3**	**4**
Medium Trucks	71.09	-22.39	3.53	-1.20	51.0	29.8	35.8	17.5	30.7	33.4	65 dBA:	**7**	**8**
Heavy Trucks	78.74	-26.34	3.53	-1.20	54.7	29.4	26.0	30.6	36.8	36.9	60 dBA:	**15**	**17**
				Total:	**59.5**	**54.5**	**53.3**	**47.3**	**55.7**	**56.3**	55 dBA:	**33**	**37**

Road Name: 19th Street **Segment: West of Orange Avenue**

Average Daily Traffic: 1330 Vehicles | Vehicle Speed: 25 MPH | Vehicle Mix: 1 | Roadway Classification: Local

	NOISE PARAMETERS AT 30 FEET FROM CENTERLINE (Equiv. Lane Dist: 28.62 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-8.16	3.53	-1.20	53.6	51.5	50.2	44.2	52.6	53.2	70 dBA:	**2**	**2**
Medium Trucks	71.09	-25.40	3.53	-1.20	48.0	26.8	32.8	14.5	27.6	30.4	65 dBA:	**5**	**5**
Heavy Trucks	78.74	-29.35	3.53	-1.20	51.7	26.4	23.0	27.6	33.8	33.9	60 dBA:	**10**	**11**
				Total:	**56.5**	**51.5**	**50.3**	**44.3**	**52.7**	**53.3**	55 dBA:	**21**	**23**

Road Name: Pacific Coast Highway **Segment: West of Atlantic Avenue**

Average Daily Traffic: 29140 Vehicles | Vehicle Speed: 35 MPH | Vehicle Mix: 3 | Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 34.7 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	3.82	2.28	-1.20	70.0	67.5	66.7	62.6	70.1	70.6	70 dBA:	**51**	**55**
Medium Trucks	74.83	-14.30	2.28	-1.20	61.6	40.3	38.9	38.6	45.3	45.5	65 dBA:	**110**	**118**
Heavy Trucks	80.05	-23.15	2.28	-1.20	58.0	27.5	23.3	27.4	33.7	33.8	60 dBA:	**236**	**255**
				Total:	**70.8**	**67.6**	**66.7**	**62.6**	**70.1**	**70.6**	55 dBA:	**509**	**550**

Road Name: Pacific Coast Highway **Segment: West of Martin Luther King Jr. Avenue**

Average Daily Traffic: 32150 Vehicles | Vehicle Speed: 35 MPH | Vehicle Mix: 3 | Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 27 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	4.25	3.91	-1.20	72.1	69.6	68.7	64.7	72.2	72.7	70 dBA:	**63**	**68**
Medium Trucks	74.83	-13.88	3.91	-1.20	63.7	42.4	41.0	40.7	47.3	47.6	65 dBA:	**135**	**146**
Heavy Trucks	80.05	-22.73	3.91	-1.20	60.0	29.6	25.4	29.5	35.8	35.9	60 dBA:	**292**	**315**
				Total:	**72.9**	**69.6**	**68.8**	**64.7**	**72.2**	**72.7**	55 dBA:	**629**	**679**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS **Project: LBCC 2041 Master Plan for the LAC Improvements**
Site Conditions: Soft

Road Name: Pacific Coast Highway **Segment: West of Orange Ave**
Average Daily Traffic: 31850 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 41.58 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	4.21	1.10	-1.20	69.2	66.8	65.9	61.8	69.3	69.8	70 dBA:	**50**	**54**
Medium Trucks	74.83	-13.92	1.10	-1.20	60.8	39.5	38.1	37.8	44.5	44.8	65 dBA:	**107**	**115**
Heavy Trucks	80.05	-22.77	1.10	-1.20	57.2	26.7	22.6	26.6	33.0	33.1	60 dBA:	**230**	**249**
				Total:	**70.0**	**66.8**	**65.9**	**61.8**	**69.3**	**69.8**	55 dBA:	**496**	**536**

Road Name: Pacific Coast Highway **Segment: West of May Avenue**
Average Daily Traffic: 36340 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 34.7 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	4.78	2.28	-1.20	71.0	68.5	67.6	63.6	71.1	71.6	70 dBA:	**59**	**64**
Medium Trucks	74.83	-13.34	2.28	-1.20	62.6	41.3	39.9	39.6	46.2	46.5	65 dBA:	**127**	**137**
Heavy Trucks	80.05	-22.19	2.28	-1.20	58.9	28.5	24.3	28.4	34.7	34.8	60 dBA:	**274**	**296**
				Total:	**71.8**	**68.5**	**67.6**	**63.6**	**71.1**	**71.6**	55 dBA:	**590**	**637**

Road Name: Pacific Coast Highway **Segment: East of Walnut Avenue**
Average Daily Traffic: 35090 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 27 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	4.63	3.91	-1.20	72.5	70.0	69.1	65.0	72.5	73.0	70 dBA:	**67**	**72**
Medium Trucks	74.83	-13.50	3.91	-1.20	64.0	42.8	41.4	41.1	47.7	48.0	65 dBA:	**144**	**155**
Heavy Trucks	80.05	-22.35	3.91	-1.20	60.4	30.0	25.8	29.8	36.2	36.3	60 dBA:	**309**	**334**
				Total:	**73.3**	**70.0**	**69.1**	**65.1**	**72.6**	**73.1**	55 dBA:	**666**	**720**

Road Name: Pacific Coast Highway **Segment: East of Cherry Avenue**
Average Daily Traffic: 34330 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	4.54	0.16	-1.20	68.6	66.1	65.3	61.2	68.7	69.2	70 dBA:	**49**	**53**
Medium Trucks	74.83	-13.59	0.16	-1.20	60.2	38.9	37.5	37.2	43.9	44.1	65 dBA:	**106**	**115**
Heavy Trucks	80.05	-22.44	0.16	-1.20	56.6	26.1	21.9	26.0	32.3	32.4	60 dBA:	**229**	**247**
				Total:	**69.4**	**66.2**	**65.3**	**61.2**	**68.7**	**69.2**	55 dBA:	**493**	**532**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS **Project: LBCC 2041 Master Plan for the LAC Improvements**
Site Conditions: Soft

	Vehicle Mix 1 (Vehicle Mix 1 (Local))				Vehicle Mix 2 (Vehicle Mix 2 (Arterial))				Vehicle Mix 3 (SR-1)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	69.50%	12.90%	9.60%	92.00%	68.04%	13.94%	16.31%	98.29%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.44%	0.06%	1.50%	3.00%	0.90%	0.16%	0.45%	1.51%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	2.40%	0.10%	2.50%	5.00%	0.11%	0.01%	0.08%	0.20%

Road Name: Atlantic Avenue **Segment: North of Pacific Coast Highway**
Average Daily Traffic: 19160 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 36.66 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.72	1.92	-1.20	67.5	65.2	63.9	57.8	66.3	66.9	70 dBA:	**33**	**36**
Medium Trucks	74.83	-13.15	1.92	-1.20	62.4	43.2	35.4	44.6	50.8	50.8	65 dBA:	**72**	**78**
Heavy Trucks	80.05	-10.93	1.92	-1.20	69.8	52.8	45.1	54.3	60.4	60.5	60 dBA:	**155**	**167**
				Total:	**72.3**	**65.4**	**63.9**	**59.6**	**67.4**	**67.9**	55 dBA:	**333**	**360**

Road Name: Atlantic Avenue **Segment: South of Pacific Coast Highway**
Average Daily Traffic: 20500 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 36.66 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	2.01	1.92	-1.20	67.8	65.5	64.2	58.1	66.5	67.2	70 dBA:	**35**	**38**
Medium Trucks	74.83	-12.86	1.92	-1.20	62.7	43.5	35.7	44.9	51.1	51.1	65 dBA:	**75**	**81**
Heavy Trucks	80.05	-10.64	1.92	-1.20	70.1	53.1	45.4	54.6	60.7	60.8	60 dBA:	**162**	**175**
				Total:	**72.6**	**65.7**	**64.2**	**59.8**	**67.7**	**68.2**	55 dBA:	**349**	**377**

Road Name: Martin Luther King Jr. Avenue **Segment: North of Pacific Coast Highway**
Average Daily Traffic: 6610 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 37.47 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-1.99	1.78	-1.20	61.1	59.0	57.7	51.7	60.1	60.7	70 dBA:	**9**	**10**
Medium Trucks	73.11	-19.23	1.78	-1.20	54.5	33.2	39.2	20.9	34.1	36.8	65 dBA:	**19**	**21**
Heavy Trucks	80.26	-23.18	1.78	-1.20	57.7	32.3	28.9	33.6	39.8	39.8	60 dBA:	**41**	**45**
				Total:	**63.3**	**59.0**	**57.7**	**51.7**	**60.1**	**60.8**	55 dBA:	**88**	**97**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS **Project: LBCC 2041 Master Plan for the LAC Improvements**
Site Conditions: Soft

Road Name: Orange Avenue **Segment: North of Hill Street**
Average Daily Traffic: 16480 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Avenue

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.07 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.06	1.67	-1.20	66.6	64.3	63.0	56.9	65.4	66.0	70 dBA:	**26**	**28**
Medium Trucks	74.83	-13.81	1.67	-1.20	61.5	42.3	34.5	43.7	49.9	49.9	65 dBA:	**56**	**61**
Heavy Trucks	80.05	-11.59	1.67	-1.20	68.9	51.9	44.2	53.4	59.5	59.6	60 dBA:	**121**	**131**
				Total:	**71.4**	**64.5**	**63.0**	**58.7**	**66.5**	**67.0**	55 dBA:	**261**	**282**

Road Name: Orange Avenue **Segment: North of 20th Street**
Average Daily Traffic: 17820 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 36.66 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.40	1.92	-1.20	67.2	64.9	63.6	57.5	65.9	66.6	70 dBA:	**32**	**34**
Medium Trucks	74.83	-13.47	1.92	-1.20	62.1	42.9	35.1	44.3	50.5	50.5	65 dBA:	**68**	**74**
Heavy Trucks	80.05	-11.25	1.92	-1.20	69.5	52.5	44.7	54.0	60.1	60.1	60 dBA:	**147**	**159**
				Total:	**72.0**	**65.1**	**63.6**	**59.2**	**67.0**	**67.5**	55 dBA:	**318**	**343**

Road Name: Orange Avenue **Segment: North of E 19th Street/Alamitos Avenue**
Average Daily Traffic: 17380 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 36.66 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	2.75	1.92	-1.20	62.9	60.5	59.2	53.2	61.6	62.3	70 dBA:	**20**	**21**
Medium Trucks	71.09	-12.11	1.92	-1.20	59.7	40.5	32.7	41.9	48.1	48.1	65 dBA:	**43**	**46**
Heavy Trucks	78.74	-9.89	1.92	-1.20	69.6	52.6	44.8	54.0	60.2	60.2	60 dBA:	**93**	**99**
				Total:	**70.8**	**61.2**	**59.4**	**56.8**	**64.1**	**64.5**	55 dBA:	**201**	**213**

Road Name: Orange Avenue **Segment: North of Pacific Coast Highway**
Average Daily Traffic: 18370 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 21.07 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	2.99	5.53	-1.20	66.8	64.4	63.1	57.0	65.5	66.1	70 dBA:	**29**	**31**
Medium Trucks	71.09	-11.87	5.53	-1.20	63.5	44.3	36.6	45.8	51.9	51.9	65 dBA:	**63**	**66**
Heavy Trucks	78.74	-9.65	5.53	-1.20	73.4	56.4	48.6	57.8	64.0	64.0	60 dBA:	**135**	**143**
				Total:	**74.6**	**65.1**	**63.3**	**60.6**	**67.9**	**68.3**	55 dBA:	**291**	**308**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS **Project: LBCC 2041 Master Plan for the LAC Improvements**
Site Conditions: Soft

Road Name: Orange Avenue **Segment: South of Pacific Coast Highway**
Average Daily Traffic: 19480 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 48 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	2.71	0.16	-1.20	64.2	62.1	60.7	54.7	63.2	63.8	70 dBA:	**18**	**19**
Medium Trucks	73.11	-14.53	0.16	-1.20	57.5	36.3	42.3	24.0	37.2	39.9	65 dBA:	**38**	**42**
Heavy Trucks	80.26	-18.49	0.16	-1.20	60.7	35.4	32.0	36.6	42.8	42.9	60 dBA:	**82**	**90**
				Total:	**66.4**	**62.1**	**60.8**	**54.8**	**63.2**	**63.8**	55 dBA:	**176**	**194**

Road Name: Walnut Avenue **Segment: North of Hill Street**
Average Daily Traffic: 7140 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 48 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-0.86	0.16	-1.20	57.5	55.4	54.1	48.1	56.5	57.1	70 dBA:	**6**	**7**
Medium Trucks	71.09	-18.10	0.16	-1.20	52.0	30.7	36.7	18.4	31.6	34.3	65 dBA:	**14**	**15**
Heavy Trucks	78.74	-22.06	0.16	-1.20	55.6	30.3	26.9	31.5	37.7	37.8	60 dBA:	**30**	**33**
				Total:	**60.4**	**55.4**	**54.2**	**48.2**	**56.6**	**57.2**	55 dBA:	**64**	**70**

Road Name: Walnut Avenue **Segment: North of 20th Street**
Average Daily Traffic: 6360 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 120 FEET FROM CENTERLINE (Equiv. Lane Dist: 119.18 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-2.16	-5.76	-1.20	53.4	51.3	50.0	43.9	52.4	53.0	70 dBA:	**8**	**9**
Medium Trucks	73.11	-19.39	-5.76	-1.20	46.8	25.5	31.5	13.2	26.4	29.1	65 dBA:	**17**	**19**
Heavy Trucks	80.26	-23.35	-5.76	-1.20	49.9	24.6	21.2	25.8	32.0	32.1	60 dBA:	**37**	**41**
				Total:	**55.6**	**51.3**	**50.0**	**44.0**	**52.4**	**53.0**	55 dBA:	**81**	**89**

Road Name: Walnut Avenue **Segment: North of Pacific Coast Highway**
Average Daily Traffic: 7610 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 35 FEET FROM CENTERLINE (Equiv. Lane Dist: 32.08 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-1.38	2.79	-1.20	62.7	60.6	59.3	53.3	61.7	62.3	70 dBA:	**10**	**11**
Medium Trucks	73.11	-18.61	2.79	-1.20	56.1	34.8	40.9	22.6	35.7	38.5	65 dBA:	**21**	**23**
Heavy Trucks	80.26	-22.57	2.79	-1.20	59.3	33.9	30.5	35.2	41.4	41.5	60 dBA:	**46**	**50**
				Total:	**64.9**	**60.6**	**59.4**	**53.3**	**61.7**	**62.4**	55 dBA:	**99**	**109**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS **Project: LBCC 2041 Master Plan for the LAC Improvements**
Site Conditions: Soft

Road Name: Walnut Avenue **Segment: South of Pacific Coast Highway**
Average Daily Traffic: 4960 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 35 FEET FROM CENTERLINE (Equiv. Lane Dist: 32.08 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-3.24	2.79	-1.20	60.9	58.7	57.4	51.4	59.8	60.5	70 dBA:	**7**	**8**
Medium Trucks	73.11	-20.47	2.79	-1.20	54.2	33.0	39.0	20.7	33.9	36.6	65 dBA:	**16**	**18**
Heavy Trucks	80.26	-24.43	2.79	-1.20	57.4	32.1	28.7	33.3	39.5	39.6	60 dBA:	**34**	**38**
				Total:	**63.1**	**58.8**	**57.5**	**51.5**	**59.9**	**60.5**	55 dBA:	**74**	**82**

Road Name: Cherry Avenue **Segment: North of Pacific Coast Highway**
Average Daily Traffic: 21260 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Minor Avenue

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.07 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	1.59	1.67	-1.20	69.4	67.0	65.8	59.7	68.1	68.8	70 dBA:	**39**	**42**
Medium Trucks	76.31	-13.28	1.67	-1.20	63.5	44.3	36.5	45.7	51.9	51.9	65 dBA:	**83**	**90**
Heavy Trucks	81.16	-11.06	1.67	-1.20	70.6	53.6	45.8	55.0	61.2	61.2	60 dBA:	**179**	**195**
				Total:	**73.5**	**67.3**	**65.8**	**61.1**	**69.0**	**69.5**	55 dBA:	**387**	**419**

Road Name: Cherry Avenue **Segment: South of Pacific Coast Highway**
Average Daily Traffic: 15380 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 2 Roadway Classification: Minor Avenue

	NOISE PARAMETERS AT 30 FEET FROM CENTERLINE (Equiv. Lane Dist: 18 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	2.22	6.55	-1.20	67.0	64.6	63.3	57.3	65.7	66.4	70 dBA:	**23**	**24**
Medium Trucks	71.09	-12.64	6.55	-1.20	63.8	44.6	36.8	46.0	52.2	52.2	65 dBA:	**49**	**52**
Heavy Trucks	78.74	-10.43	6.55	-1.20	73.7	56.7	48.9	58.1	64.3	64.3	60 dBA:	**105**	**112**
				Total:	**74.9**	**65.3**	**63.5**	**60.9**	**68.2**	**68.6**	55 dBA:	**227**	**240**

Road Name: Hill Street **Segment: West of Orange Avenue**
Average Daily Traffic: 4310 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 53.19 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-3.85	-0.51	-1.20	57.0	54.8	53.5	47.5	55.9	56.6	70 dBA:	**6**	**7**
Medium Trucks	73.11	-21.08	-0.51	-1.20	50.3	29.1	35.1	16.8	29.9	32.7	65 dBA:	**14**	**15**
Heavy Trucks	80.26	-25.04	-0.51	-1.20	53.5	28.2	24.8	29.4	35.6	35.7	60 dBA:	**30**	**33**
				Total:	**59.2**	**54.9**	**53.6**	**47.6**	**56.0**	**56.6**	55 dBA:	**64**	**70**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS **Project: LBCC 2041 Master Plan for the LAC Improvements**
Site Conditions: Soft

Road Name: Hill Street **Segment: East of Walnut Avenue**
Average Daily Traffic: 3600 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 42.77 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-4.63	0.91	-1.20	57.6	55.5	54.2	48.2	56.6	57.2	70 dBA:	**6**	**6**
Medium Trucks	73.11	-21.87	0.91	-1.20	51.0	29.7	35.7	17.4	30.6	33.3	65 dBA:	**12**	**14**
Heavy Trucks	80.26	-25.82	0.91	-1.20	54.2	28.8	25.4	30.1	36.3	36.3	60 dBA:	**27**	**30**
				Total:	**59.8**	**55.5**	**54.2**	**48.2**	**56.6**	**57.3**	55 dBA:	**58**	**64**

Road Name: 20th Street **Segment: West of Orange Avenue**
Average Daily Traffic: 3250 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Local

	NOISE PARAMETERS AT 35 FEET FROM CENTERLINE (Equiv. Lane Dist: 33.82 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-4.28	2.44	-1.20	56.4	54.3	53.0	47.0	55.4	56.0	70 dBA:	**4**	**4**
Medium Trucks	71.09	-21.52	2.44	-1.20	50.8	29.6	35.6	17.3	30.4	33.2	65 dBA:	**8**	**9**
Heavy Trucks	78.74	-25.47	2.44	-1.20	54.5	29.2	25.8	30.4	36.6	36.7	60 dBA:	**17**	**19**
				Total:	**59.2**	**54.3**	**53.1**	**47.1**	**55.4**	**56.1**	55 dBA:	**37**	**41**

Road Name: 20th Street **Segment: West of Alimitos Avenue**
Average Daily Traffic: 2150 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Local

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 49.18 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-6.07	0.00	-1.20	52.2	50.0	48.7	42.7	51.1	51.8	70 dBA:	**3**	**3**
Medium Trucks	71.09	-23.31	0.00	-1.20	46.6	25.3	31.4	13.1	26.2	29.0	65 dBA:	**6**	**7**
Heavy Trucks	78.74	-27.27	0.00	-1.20	50.3	24.9	21.5	26.2	32.4	32.5	60 dBA:	**13**	**14**
				Total:	**55.0**	**50.1**	**48.8**	**42.8**	**51.2**	**51.8**	55 dBA:	**28**	**31**

Road Name: 20th Street **Segment: East of Alamitos Avenue**
Average Daily Traffic: 3260 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Local

	NOISE PARAMETERS AT 30 FEET FROM CENTERLINE (Equiv. Lane Dist: 28.62 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-4.27	3.53	-1.20	57.5	55.4	54.1	48.1	56.5	57.1	70 dBA:	**4**	**4**
Medium Trucks	71.09	-21.50	3.53	-1.20	51.9	30.7	36.7	18.4	31.5	34.3	65 dBA:	**8**	**9**
Heavy Trucks	78.74	-25.46	3.53	-1.20	55.6	30.3	26.9	31.5	37.7	37.8	60 dBA:	**18**	**19**
				Total:	**60.3**	**55.4**	**54.2**	**48.2**	**56.5**	**57.2**	55 dBA:	**38**	**42**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS **Project: LBCC 2041 Master Plan for the LAC Improvements**
Site Conditions: Soft

Road Name: 20th Street **Segment: East of Walnut Avenue**
Average Daily Traffic: 2760 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Local

	NOISE PARAMETERS AT 30 FEET FROM CENTERLINE (Equiv. Lane Dist: 28.62 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-4.99	3.53	-1.20	56.8	54.7	53.3	47.3	55.8	56.4	70 dBA:	**3**	**4**
Medium Trucks	71.09	-22.23	3.53	-1.20	51.2	29.9	36.0	17.7	30.8	33.6	65 dBA:	**7**	**8**
Heavy Trucks	78.74	-26.18	3.53	-1.20	54.9	29.5	26.1	30.8	37.0	37.1	60 dBA:	**16**	**17**
				Total:	**59.6**	**54.7**	**53.4**	**47.4**	**55.8**	**56.5**	55 dBA:	**34**	**38**

Road Name: 19th Street **Segment: West of Orange Avenue**
Average Daily Traffic: 1330 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Local

	NOISE PARAMETERS AT 30 FEET FROM CENTERLINE (Equiv. Lane Dist: 28.62 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-8.16	3.53	-1.20	53.6	51.5	50.2	44.2	52.6	53.2	70 dBA:	**2**	**2**
Medium Trucks	71.09	-25.40	3.53	-1.20	48.0	26.8	32.8	14.5	27.6	30.4	65 dBA:	**5**	**5**
Heavy Trucks	78.74	-29.35	3.53	-1.20	51.7	26.4	23.0	27.6	33.8	33.9	60 dBA:	**10**	**11**
				Total:	**56.5**	**51.5**	**50.3**	**44.3**	**52.7**	**53.3**	55 dBA:	**21**	**23**

Road Name: Pacific Coast Highway **Segment: West of Atlantic Avenue**
Average Daily Traffic: 29650 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 34.7 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	3.90	2.28	-1.20	70.1	67.6	66.8	62.7	70.2	70.7	70 dBA:	**51**	**56**
Medium Trucks	74.83	-14.23	2.28	-1.20	61.7	40.4	39.0	38.7	45.4	45.6	65 dBA:	**111**	**120**
Heavy Trucks	80.05	-23.08	2.28	-1.20	58.0	27.6	23.4	27.5	33.8	33.9	60 dBA:	**239**	**258**
				Total:	**70.9**	**67.6**	**66.8**	**62.7**	**70.2**	**70.7**	55 dBA:	**515**	**556**

Road Name: Pacific Coast Highway **Segment: West of Martin Luther King Jr. Avenue**
Average Daily Traffic: 33100 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 27 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	4.38	3.91	-1.20	72.2	69.7	68.9	64.8	72.3	72.8	70 dBA:	**64**	**69**
Medium Trucks	74.83	-13.75	3.91	-1.20	63.8	42.5	41.1	40.8	47.5	47.7	65 dBA:	**138**	**149**
Heavy Trucks	80.05	-22.60	3.91	-1.20	60.2	29.7	25.5	29.6	35.9	36.0	60 dBA:	**298**	**321**
				Total:	**73.0**	**69.7**	**68.9**	**64.8**	**72.3**	**72.8**	55 dBA:	**641**	**692**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS **Project: LBCC 2041 Master Plan for the LAC Improvements**
Site Conditions: Soft

Road Name: Pacific Coast Highway **Segment: West of Orange Ave**
Average Daily Traffic: 32960 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 41.58 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	4.36	1.10	-1.20	69.4	66.9	66.0	61.9	69.5	70.0	70 dBA:	**51**	**55**
Medium Trucks	74.83	-13.77	1.10	-1.20	61.0	39.7	38.3	38.0	44.6	44.9	65 dBA:	**109**	**118**
Heavy Trucks	80.05	-22.62	1.10	-1.20	57.3	26.9	22.7	26.8	33.1	33.2	60 dBA:	**235**	**254**
				Total:	**70.2**	**66.9**	**66.0**	**62.0**	**69.5**	**70.0**	55 dBA:	**507**	**548**

Road Name: Pacific Coast Highway **Segment: West of May Avenue**
Average Daily Traffic: 37720 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 34.7 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	4.94	2.28	-1.20	71.1	68.7	67.8	63.7	71.2	71.7	70 dBA:	**60**	**65**
Medium Trucks	74.83	-13.18	2.28	-1.20	62.7	41.5	40.1	39.7	46.4	46.7	65 dBA:	**130**	**141**
Heavy Trucks	80.05	-22.03	2.28	-1.20	59.1	28.6	24.5	28.5	34.9	35.0	60 dBA:	**281**	**303**
				Total:	**71.9**	**68.7**	**67.8**	**63.7**	**71.2**	**71.7**	55 dBA:	**605**	**653**

Road Name: Pacific Coast Highway **Segment: East of Walnut Avenue**
Average Daily Traffic: 36470 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 27 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	4.80	3.91	-1.20	72.6	70.2	69.3	65.2	72.7	73.2	70 dBA:	**68**	**74**
Medium Trucks	74.83	-13.33	3.91	-1.20	64.2	42.9	41.5	41.2	47.9	48.2	65 dBA:	**147**	**159**
Heavy Trucks	80.05	-22.18	3.91	-1.20	60.6	30.1	26.0	30.0	36.4	36.5	60 dBA:	**317**	**343**
				Total:	**73.4**	**70.2**	**69.3**	**65.2**	**72.7**	**73.2**	55 dBA:	**684**	**739**

Road Name: Pacific Coast Highway **Segment: East of Cherry Avenue**
Average Daily Traffic: 34850 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	4.60	0.16	-1.20	68.7	66.2	65.3	61.3	68.8	69.3	70 dBA:	**50**	**54**
Medium Trucks	74.83	-13.53	0.16	-1.20	60.3	39.0	37.6	37.3	43.9	44.2	65 dBA:	**107**	**116**
Heavy Trucks	80.05	-22.38	0.16	-1.20	56.6	26.2	22.0	26.1	32.4	32.5	60 dBA:	**231**	**249**
				Total:	**69.5**	**66.2**	**65.4**	**61.3**	**68.8**	**69.3**	55 dBA:	**498**	**537**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2041 WITHOUT PROJECT CONDITIONS **Project: LBCC 2041 Master Plan for the LAC Improvements**

Site Conditions: Soft

	Vehicle Mix 1 (Vehicle Mix 1 (Local))				Vehicle Mix 2 (Vehicle Mix 2 (Arterial))				Vehicle Mix 3 (SR-1)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	69.50%	12.90%	9.60%	92.00%	68.04%	13.94%	16.31%	98.29%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.44%	0.06%	1.50%	3.00%	0.90%	0.16%	0.45%	1.51%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	2.40%	0.10%	2.50%	5.00%	0.11%	0.01%	0.08%	0.20%

Road Name: Atlantic Avenue **Segment: North of Pacific Coast Highway**

Average Daily Traffic: 22640 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 36.66 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	2.44	1.92	-1.20	68.3	65.9	64.6	58.5	67.0	67.6	70 dBA:	**37**	**40**
Medium Trucks	74.83	-12.43	1.92	-1.20	63.1	43.9	36.1	45.3	51.5	51.5	65 dBA:	**80**	**87**
Heavy Trucks	80.05	-10.21	1.92	-1.20	70.6	53.6	45.8	55.0	61.1	61.2	60 dBA:	**173**	**187**
				Total:	**73.0**	**66.2**	**64.7**	**60.3**	**68.1**	**68.6**	55 dBA:	**373**	**403**

Road Name: Atlantic Avenue **Segment: South of Pacific Coast Highway**

Average Daily Traffic: 24560 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 36.66 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	2.79	1.92	-1.20	68.6	66.3	65.0	58.9	67.3	68.0	70 dBA:	**39**	**43**
Medium Trucks	74.83	-12.07	1.92	-1.20	63.5	44.3	36.5	45.7	51.8	51.9	65 dBA:	**85**	**92**
Heavy Trucks	80.05	-9.85	1.92	-1.20	70.9	53.9	46.1	55.3	61.5	61.5	60 dBA:	**183**	**197**
				Total:	**73.4**	**66.5**	**65.0**	**60.6**	**68.4**	**68.9**	55 dBA:	**393**	**425**

Road Name: Martin Luther King Jr. Avenue **Segment: North of Pacific Coast Highway**

Average Daily Traffic: 7630 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 37.47 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-1.36	1.78	-1.20	61.7	59.6	58.3	52.3	60.7	61.3	70 dBA:	**10**	**11**
Medium Trucks	73.11	-18.60	1.78	-1.20	55.1	33.8	39.9	21.6	34.7	37.5	65 dBA:	**21**	**23**
Heavy Trucks	80.26	-22.56	1.78	-1.20	58.3	32.9	29.5	34.2	40.4	40.5	60 dBA:	**45**	**49**
				Total:	**63.9**	**59.6**	**58.4**	**52.3**	**60.7**	**61.4**	55 dBA:	**97**	**106**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2041 WITHOUT PROJECT CONDITIONS

Project: LBCC 2041 Master Plan for the LAC Improvements
Site Conditions: Soft

Road Name: Orange Avenue **Segment: North of Hill Street**
Average Daily Traffic: 19380 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Avenue

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.07 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.77	1.67	-1.20	67.3	65.0	63.7	57.6	66.1	66.7	70 dBA:	**29**	**31**
Medium Trucks	74.83	-13.10	1.67	-1.20	62.2	43.0	35.2	44.4	50.6	50.6	65 dBA:	**63**	**68**
Heavy Trucks	80.05	-10.88	1.67	-1.20	69.6	52.6	44.9	54.1	60.2	60.3	60 dBA:	**135**	**146**
				Total:	**72.1**	**65.2**	**63.7**	**59.4**	**67.2**	**67.7**	55 dBA:	**291**	**315**

Road Name: Orange Avenue **Segment: North of 20th Street**
Average Daily Traffic: 21040 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 36.66 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	2.12	1.92	-1.20	68.0	65.6	64.3	58.2	66.7	67.3	70 dBA:	**35**	**38**
Medium Trucks	74.83	-12.74	1.92	-1.20	62.8	43.6	35.8	45.0	51.2	51.2	65 dBA:	**76**	**83**
Heavy Trucks	80.05	-10.53	1.92	-1.20	70.2	53.2	45.5	54.7	60.8	60.9	60 dBA:	**165**	**178**
				Total:	**72.7**	**65.9**	**64.3**	**60.0**	**67.8**	**68.3**	55 dBA:	**355**	**383**

Road Name: Orange Avenue **Segment: North of E 19th Street/Alamitos Avenue**
Average Daily Traffic: 20360 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 36.66 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	3.44	1.92	-1.20	63.6	61.2	59.9	53.9	62.3	62.9	70 dBA:	**22**	**24**
Medium Trucks	71.09	-11.43	1.92	-1.20	60.4	41.2	33.4	42.6	48.8	48.8	65 dBA:	**48**	**51**
Heavy Trucks	78.74	-9.21	1.92	-1.20	70.3	53.3	45.5	54.7	60.8	60.9	60 dBA:	**104**	**110**
				Total:	**71.5**	**61.9**	**60.1**	**57.5**	**64.8**	**65.1**	55 dBA:	**224**	**237**

Road Name: Orange Avenue **Segment: North of Pacific Coast Highway**
Average Daily Traffic: 20860 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 21.07 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	3.55	5.53	-1.20	67.3	64.9	63.6	57.6	66.0	66.7	70 dBA:	**32**	**34**
Medium Trucks	71.09	-11.32	5.53	-1.20	64.1	44.9	37.1	46.3	52.5	52.5	65 dBA:	**68**	**72**
Heavy Trucks	78.74	-9.10	5.53	-1.20	74.0	57.0	49.2	58.4	64.6	64.6	60 dBA:	**147**	**156**
				Total:	**75.2**	**65.6**	**63.8**	**61.2**	**68.5**	**68.9**	55 dBA:	**316**	**336**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2041 WITHOUT PROJECT CONDITIONS

Project: LBCC 2041 Master Plan for the LAC Improvements
Site Conditions: Soft

Road Name: Orange Avenue **Segment: South of Pacific Coast Highway**
Average Daily Traffic: 23220 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 48 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	3.47	0.16	-1.20	64.9	62.8	61.5	55.5	63.9	64.5	70 dBA:	**20**	**22**
Medium Trucks	73.11	-13.77	0.16	-1.20	58.3	37.1	43.1	24.8	37.9	40.7	65 dBA:	**43**	**47**
Heavy Trucks	80.26	-17.73	0.16	-1.20	61.5	36.1	32.7	37.4	43.6	43.7	60 dBA:	**92**	**101**
				Total:	**67.2**	**62.8**	**61.6**	**55.6**	**64.0**	**64.6**	55 dBA:	**198**	**218**

Road Name: Walnut Avenue **Segment: North of Hill Street**
Average Daily Traffic: 7910 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 48 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-0.42	0.16	-1.20	58.0	55.9	54.6	48.5	57.0	57.6	70 dBA:	**7**	**8**
Medium Trucks	71.09	-17.65	0.16	-1.20	52.4	31.1	37.2	18.9	32.0	34.8	65 dBA:	**15**	**16**
Heavy Trucks	78.74	-21.61	0.16	-1.20	56.1	30.7	27.3	32.0	38.2	38.3	60 dBA:	**32**	**35**
				Total:	**60.8**	**55.9**	**54.6**	**48.6**	**57.0**	**57.7**	55 dBA:	**68**	**75**

Road Name: Walnut Avenue **Segment: North of 20th Street**
Average Daily Traffic: 7510 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 120 FEET FROM CENTERLINE (Equiv. Lane Dist: 119.18 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-1.43	-5.76	-1.20	54.1	52.0	50.7	44.7	53.1	53.7	70 dBA:	**9**	**10**
Medium Trucks	73.11	-18.67	-5.76	-1.20	47.5	26.2	32.3	14.0	27.1	29.9	65 dBA:	**19**	**21**
Heavy Trucks	80.26	-22.63	-5.76	-1.20	50.7	25.3	21.9	26.6	32.8	32.9	60 dBA:	**42**	**46**
				Total:	**56.3**	**52.0**	**50.7**	**44.7**	**53.1**	**53.8**	55 dBA:	**90**	**99**

Road Name: Walnut Avenue **Segment: North of Pacific Coast Highway**
Average Daily Traffic: 7960 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 35 FEET FROM CENTERLINE (Equiv. Lane Dist: 32.08 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-1.18	2.79	-1.20	62.9	60.8	59.5	53.5	61.9	62.5	70 dBA:	**10**	**11**
Medium Trucks	73.11	-18.42	2.79	-1.20	56.3	35.0	41.1	22.8	35.9	38.7	65 dBA:	**22**	**24**
Heavy Trucks	80.26	-22.38	2.79	-1.20	59.5	34.1	30.7	35.4	41.6	41.7	60 dBA:	**47**	**52**
				Total:	**65.1**	**60.8**	**59.6**	**53.5**	**61.9**	**62.6**	55 dBA:	**102**	**112**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2041 WITHOUT PROJECT CONDITIONS

Project: LBCC 2041 Master Plan for the LAC Improvements
Site Conditions: Soft

Road Name: Walnut Avenue **Segment: South of Pacific Coast Highway**
Average Daily Traffic: 5560 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 35 FEET FROM CENTERLINE (Equiv. Lane Dist: 32.08 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-2.74	2.79	-1.20	61.4	59.2	57.9	51.9	60.3	61.0	70 dBA:	**8**	**9**
Medium Trucks	73.11	-19.98	2.79	-1.20	54.7	33.5	39.5	21.2	34.3	37.1	65 dBA:	**17**	**19**
Heavy Trucks	80.26	-23.93	2.79	-1.20	57.9	32.6	29.2	33.8	40.0	40.1	60 dBA:	**37**	**41**
				Total:	**63.6**	**59.3**	**58.0**	**52.0**	**60.4**	**61.0**	55 dBA:	**80**	**88**

Road Name: Cherry Avenue **Segment: North of Pacific Coast Highway**
Average Daily Traffic: 24500 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Minor Avenue

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.07 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.20	1.67	-1.20	70.0	67.7	66.4	60.3	68.7	69.4	70 dBA:	**43**	**46**
Medium Trucks	76.31	-12.66	1.67	-1.20	64.1	44.9	37.1	46.3	52.5	52.5	65 dBA:	**92**	**99**
Heavy Trucks	81.16	-10.44	1.67	-1.20	71.2	54.2	46.4	55.6	61.8	61.8	60 dBA:	**197**	**214**
				Total:	**74.1**	**67.9**	**66.4**	**61.7**	**69.6**	**70.2**	55 dBA:	**425**	**461**

Road Name: Cherry Avenue **Segment: South of Pacific Coast Highway**
Average Daily Traffic: 17940 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 2 Roadway Classification: Minor Avenue

	NOISE PARAMETERS AT 30 FEET FROM CENTERLINE (Equiv. Lane Dist: 18 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	2.89	6.55	-1.20	67.7	65.3	64.0	58.0	66.4	67.0	70 dBA:	**25**	**27**
Medium Trucks	71.09	-11.98	6.55	-1.20	64.5	45.3	37.5	46.7	52.8	52.9	65 dBA:	**54**	**57**
Heavy Trucks	78.74	-9.76	6.55	-1.20	74.3	57.3	49.6	58.8	64.9	65.0	60 dBA:	**117**	**124**
				Total:	**75.5**	**66.0**	**64.2**	**61.5**	**68.8**	**69.2**	55 dBA:	**251**	**266**

Road Name: Hill Street **Segment: West of Orange Avenue**
Average Daily Traffic: 4880 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 53.19 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-3.31	-0.51	-1.20	57.5	55.4	54.1	48.1	56.5	57.1	70 dBA:	**7**	**8**
Medium Trucks	73.11	-20.54	-0.51	-1.20	50.9	29.6	35.6	17.3	30.5	33.2	65 dBA:	**15**	**16**
Heavy Trucks	80.26	-24.50	-0.51	-1.20	54.1	28.7	25.3	30.0	36.2	36.2	60 dBA:	**32**	**36**
				Total:	**59.7**	**55.4**	**54.1**	**48.1**	**56.5**	**57.2**	55 dBA:	**69**	**77**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2041 WITHOUT PROJECT CONDITIONS

Project: LBCC 2041 Master Plan for the LAC Improvements
Site Conditions: Soft

Road Name: Hill Street **Segment: East of Walnut Avenue**
Average Daily Traffic: 4100 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 42.77 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-4.06	0.91	-1.20	58.2	56.0	54.7	48.7	57.1	57.8	70 dBA:	**6**	**7**
Medium Trucks	73.11	-21.30	0.91	-1.20	51.5	30.3	36.3	18.0	31.2	33.9	65 dBA:	**14**	**15**
Heavy Trucks	80.26	-25.26	0.91	-1.20	54.7	29.4	26.0	30.6	36.8	36.9	60 dBA:	**29**	**32**
				Total:	**60.4**	**56.1**	**54.8**	**48.8**	**57.2**	**57.8**	55 dBA:	**63**	**69**

Road Name: 20th Street **Segment: West of Orange Avenue**
Average Daily Traffic: 3650 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Local

	NOISE PARAMETERS AT 35 FEET FROM CENTERLINE (Equiv. Lane Dist: 33.82 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-3.78	2.44	-1.20	56.9	54.8	53.5	47.5	55.9	56.5	70 dBA:	**4**	**4**
Medium Trucks	71.09	-21.01	2.44	-1.20	51.3	30.1	36.1	17.8	30.9	33.7	65 dBA:	**9**	**10**
Heavy Trucks	78.74	-24.97	2.44	-1.20	55.0	29.7	26.3	30.9	37.1	37.2	60 dBA:	**19**	**21**
				Total:	**59.7**	**54.8**	**53.6**	**47.6**	**56.0**	**56.6**	55 dBA:	**40**	**45**

Road Name: 20th Street **Segment: West of Alimitos Avenue**
Average Daily Traffic: 2700 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Local

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 49.18 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-5.08	0.00	-1.20	53.2	51.0	49.7	43.7	52.1	52.8	70 dBA:	**3**	**4**
Medium Trucks	71.09	-22.32	0.00	-1.20	47.6	26.3	32.3	14.0	27.2	29.9	65 dBA:	**7**	**8**
Heavy Trucks	78.74	-26.28	0.00	-1.20	51.3	25.9	22.5	27.2	33.4	33.5	60 dBA:	**15**	**17**
				Total:	**56.0**	**51.1**	**49.8**	**43.8**	**52.2**	**52.8**	55 dBA:	**33**	**36**

Road Name: 20th Street **Segment: East of Alamitos Avenue**
Average Daily Traffic: 3940 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Local

	NOISE PARAMETERS AT 30 FEET FROM CENTERLINE (Equiv. Lane Dist: 28.62 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-3.44	3.53	-1.20	58.3	56.2	54.9	48.9	57.3	57.9	70 dBA:	**4**	**5**
Medium Trucks	71.09	-20.68	3.53	-1.20	52.7	31.5	37.5	19.2	32.4	35.1	65 dBA:	**9**	**10**
Heavy Trucks	78.74	-24.64	3.53	-1.20	56.4	31.1	27.7	32.3	38.5	38.6	60 dBA:	**20**	**22**
				Total:	**61.2**	**56.2**	**55.0**	**49.0**	**57.4**	**58.0**	55 dBA:	**43**	**48**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2041 WITHOUT PROJECT CONDITIONS

Project: LBCC 2041 Master Plan for the LAC Improvements
Site Conditions: Soft

Road Name: 20th Street **Segment: East of Walnut Avenue**
Average Daily Traffic: 3230 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Local

	NOISE PARAMETERS AT 30 FEET FROM CENTERLINE (Equiv. Lane Dist: 28.62 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-4.31	3.53	-1.20	57.5	55.3	54.0	48.0	56.4	57.1	70 dBA:	**4**	**4**
Medium Trucks	71.09	-21.54	3.53	-1.20	51.9	30.6	36.6	18.4	31.5	34.2	65 dBA:	**8**	**9**
Heavy Trucks	78.74	-25.50	3.53	-1.20	55.6	30.2	26.8	31.5	37.7	37.8	60 dBA:	**18**	**19**
				Total:	**60.3**	**55.4**	**54.1**	**48.1**	**56.5**	**57.1**	55 dBA:	**38**	**42**

Road Name: 19th Street **Segment: West of Orange Avenue**
Average Daily Traffic: 1550 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Local

	NOISE PARAMETERS AT 30 FEET FROM CENTERLINE (Equiv. Lane Dist: 28.62 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-7.49	3.53	-1.20	54.3	52.2	50.8	44.8	53.2	53.9	70 dBA:	**2**	**3**
Medium Trucks	71.09	-24.73	3.53	-1.20	48.7	27.4	33.5	15.2	28.3	31.1	65 dBA:	**5**	**5**
Heavy Trucks	78.74	-28.69	3.53	-1.20	52.4	27.0	23.6	28.3	34.5	34.6	60 dBA:	**11**	**12**
				Total:	**57.1**	**52.2**	**50.9**	**44.9**	**53.3**	**53.9**	55 dBA:	**23**	**26**

Road Name: Pacific Coast Highway **Segment: West of Atlantic Avenue**
Average Daily Traffic: 41810 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 34.7 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	5.39	2.28	-1.20	71.6	69.1	68.3	64.2	71.7	72.2	70 dBA:	**65**	**70**
Medium Trucks	74.83	-12.74	2.28	-1.20	63.2	41.9	40.5	40.2	46.8	47.1	65 dBA:	**140**	**151**
Heavy Trucks	80.05	-21.58	2.28	-1.20	59.5	29.1	24.9	29.0	35.3	35.4	60 dBA:	**301**	**325**
				Total:	**72.4**	**69.1**	**68.3**	**64.2**	**71.7**	**72.2**	55 dBA:	**648**	**700**

Road Name: Pacific Coast Highway **Segment: West of Martin Luther King Jr. Avenue**
Average Daily Traffic: 45410 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 27 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	5.75	3.91	-1.20	73.6	71.1	70.2	66.2	73.7	74.2	70 dBA:	**79**	**85**
Medium Trucks	74.83	-12.38	3.91	-1.20	65.2	43.9	42.5	42.2	48.8	49.1	65 dBA:	**170**	**184**
Heavy Trucks	80.05	-21.23	3.91	-1.20	61.5	31.1	26.9	31.0	37.3	37.4	60 dBA:	**367**	**397**
				Total:	**74.4**	**71.1**	**70.3**	**66.2**	**73.7**	**74.2**	55 dBA:	**791**	**855**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2041 WITHOUT PROJECT CONDITIONS

Project: LBCC 2041 Master Plan for the LAC Improvements
Site Conditions: Soft

Road Name: Pacific Coast Highway **Segment: West of Orange Ave**
Average Daily Traffic: 45050 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 41.58 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	5.72	1.10	-1.20	70.7	68.3	67.4	63.3	70.8	71.3	70 dBA:	**62**	**67**
Medium Trucks	74.83	-12.41	1.10	-1.20	62.3	41.0	39.7	39.3	46.0	46.3	65 dBA:	**135**	**145**
Heavy Trucks	80.05	-21.26	1.10	-1.20	58.7	28.2	24.1	28.1	34.5	34.6	60 dBA:	**290**	**313**
				Total:	**71.5**	**68.3**	**67.4**	**63.3**	**70.8**	**71.3**	55 dBA:	**625**	**675**

Road Name: Pacific Coast Highway **Segment: West of May Avenue**
Average Daily Traffic: 50640 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 34.7 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	6.22	2.28	-1.20	72.4	69.9	69.1	65.0	72.5	73.0	70 dBA:	**74**	**79**
Medium Trucks	74.83	-11.90	2.28	-1.20	64.0	42.7	41.3	41.0	47.7	47.9	65 dBA:	**159**	**171**
Heavy Trucks	80.05	-20.75	2.28	-1.20	60.4	29.9	25.7	29.8	36.1	36.2	60 dBA:	**342**	**369**
				Total:	**73.2**	**70.0**	**69.1**	**65.0**	**72.5**	**73.0**	55 dBA:	**736**	**795**

Road Name: Pacific Coast Highway **Segment: East of Walnut Avenue**
Average Daily Traffic: 49430 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 27 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	6.12	3.91	-1.20	73.9	71.5	70.6	66.5	74.0	74.5	70 dBA:	**84**	**90**
Medium Trucks	74.83	-12.01	3.91	-1.20	65.5	44.3	42.9	42.6	49.2	49.5	65 dBA:	**180**	**195**
Heavy Trucks	80.05	-20.86	3.91	-1.20	61.9	31.4	27.3	31.3	37.7	37.8	60 dBA:	**389**	**420**
				Total:	**74.8**	**71.5**	**70.6**	**66.5**	**74.0**	**74.5**	55 dBA:	**837**	**905**

Road Name: Pacific Coast Highway **Segment: East of Cherry Avenue**
Average Daily Traffic: 48540 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	6.04	0.16	-1.20	70.1	67.6	66.8	62.7	70.2	70.7	70 dBA:	**62**	**67**
Medium Trucks	74.83	-12.09	0.16	-1.20	61.7	40.4	39.0	38.7	45.4	45.6	65 dBA:	**134**	**144**
Heavy Trucks	80.05	-20.94	0.16	-1.20	58.1	27.6	23.4	27.5	33.8	34.0	60 dBA:	**288**	**311**
				Total:	**70.9**	**67.7**	**66.8**	**62.7**	**70.2**	**70.7**	55 dBA:	**620**	**670**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2041 WITH PROJECT CONDITIONS **Project: LBCC 2041 Master Plan for the LAC Improvements**

Site Conditions: Soft

	Vehicle Mix 1 (Vehicle Mix 1 (Local))				Vehicle Mix 2 (Vehicle Mix 2 (Arterial))				Vehicle Mix 3 (SR-1)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	69.50%	12.90%	9.60%	92.00%	68.04%	13.94%	16.31%	98.29%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.44%	0.06%	1.50%	3.00%	0.90%	0.16%	0.45%	1.51%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	2.40%	0.10%	2.50%	5.00%	0.11%	0.01%	0.08%	0.20%

Road Name: Atlantic Avenue **Segment: North of Pacific Coast Highway**

Average Daily Traffic: 22860 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 36.66 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	2.48	1.92	-1.20	68.3	65.9	64.6	58.6	67.0	67.7	70 dBA:	**38**	**41**
Medium Trucks	74.83	-12.38	1.92	-1.20	63.2	44.0	36.2	45.4	51.5	51.6	65 dBA:	**81**	**87**
Heavy Trucks	80.05	-10.17	1.92	-1.20	70.6	53.6	45.8	55.0	61.2	61.2	60 dBA:	**174**	**188**
				Total:	**73.1**	**66.2**	**64.7**	**60.3**	**68.1**	**68.6**	55 dBA:	**375**	**405**

Road Name: Atlantic Avenue **Segment: South of Pacific Coast Highway**

Average Daily Traffic: 24780 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 36.66 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	2.83	1.92	-1.20	68.7	66.3	65.0	58.9	67.4	68.0	70 dBA:	**40**	**43**
Medium Trucks	74.83	-12.03	1.92	-1.20	63.5	44.3	36.5	45.7	51.9	51.9	65 dBA:	**85**	**92**
Heavy Trucks	80.05	-9.82	1.92	-1.20	70.9	54.0	46.2	55.4	61.5	61.6	60 dBA:	**184**	**198**
				Total:	**73.4**	**66.6**	**65.1**	**60.7**	**68.5**	**69.0**	55 dBA:	**396**	**428**

Road Name: Martin Luther King Jr. Avenue **Segment: North of Pacific Coast Highway**

Average Daily Traffic: 7800 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 37.47 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-1.27	1.78	-1.20	61.8	59.7	58.4	52.4	60.8	61.4	70 dBA:	**10**	**11**
Medium Trucks	73.11	-18.51	1.78	-1.20	55.2	33.9	40.0	21.7	34.8	37.6	65 dBA:	**21**	**23**
Heavy Trucks	80.26	-22.46	1.78	-1.20	58.4	33.0	29.6	34.3	40.5	40.6	60 dBA:	**46**	**50**
				Total:	**64.0**	**59.7**	**58.5**	**52.4**	**60.8**	**61.5**	55 dBA:	**98**	**108**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2041 WITH PROJECT CONDITIONS

Project: LBCC 2041 Master Plan for the LAC Improvements
Site Conditions: Soft

Road Name: Orange Avenue **Segment: North of Hill Street**
Average Daily Traffic: 19680 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Minor Avenue

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.07 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	1.83	1.67	-1.20	67.4	65.0	63.7	57.7	66.1	66.8	70 dBA:	**29**	**32**
Medium Trucks	74.83	-13.03	1.67	-1.20	62.3	43.1	35.3	44.5	50.6	50.7	65 dBA:	**63**	**68**
Heavy Trucks	80.05	-10.82	1.67	-1.20	69.7	52.7	44.9	54.1	60.3	60.3	60 dBA:	**137**	**148**
				Total:	**72.2**	**65.3**	**63.8**	**59.4**	**67.2**	**67.7**	55 dBA:	**294**	**318**

Road Name: Orange Avenue **Segment: North of 20th Street**
Average Daily Traffic: 21380 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 36.66 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	2.19	1.92	-1.20	68.0	65.6	64.4	58.3	66.7	67.4	70 dBA:	**36**	**39**
Medium Trucks	74.83	-12.67	1.92	-1.20	62.9	43.7	35.9	45.1	51.2	51.3	65 dBA:	**77**	**83**
Heavy Trucks	80.05	-10.46	1.92	-1.20	70.3	53.3	45.5	54.7	60.9	60.9	60 dBA:	**166**	**180**
				Total:	**72.8**	**65.9**	**64.4**	**60.0**	**67.8**	**68.3**	55 dBA:	**359**	**387**

Road Name: Orange Avenue **Segment: North of E 19th Street/Alamitos Avenue**
Average Daily Traffic: 20830 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 36.66 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	3.54	1.92	-1.20	63.7	61.3	60.0	54.0	62.4	63.0	70 dBA:	**23**	**24**
Medium Trucks	71.09	-11.33	1.92	-1.20	60.5	41.3	33.5	42.7	48.9	48.9	65 dBA:	**49**	**52**
Heavy Trucks	78.74	-9.11	1.92	-1.20	70.4	53.4	45.6	54.8	60.9	61.0	60 dBA:	**105**	**112**
				Total:	**71.6**	**62.0**	**60.2**	**57.6**	**64.9**	**65.2**	55 dBA:	**227**	**241**

Road Name: Orange Avenue **Segment: North of Pacific Coast Highway**
Average Daily Traffic: 21890 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 2 Roadway Classification: Major Avenue

	NOISE PARAMETERS AT 40 FEET FROM CENTERLINE (Equiv. Lane Dist: 21.07 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	3.76	5.53	-1.20	67.5	65.1	63.9	57.8	66.2	66.9	70 dBA:	**33**	**35**
Medium Trucks	71.09	-11.11	5.53	-1.20	64.3	45.1	37.3	46.5	52.7	52.7	65 dBA:	**70**	**75**
Heavy Trucks	78.74	-8.89	5.53	-1.20	74.2	57.2	49.4	58.6	64.8	64.8	60 dBA:	**152**	**161**
				Total:	**75.4**	**65.8**	**64.0**	**61.4**	**68.7**	**69.1**	55 dBA:	**327**	**347**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2041 WITH PROJECT CONDITIONS

Project: LBCC 2041 Master Plan for the LAC Improvements
Site Conditions: Soft

Road Name: Orange Avenue **Segment: South of Pacific Coast Highway**
Average Daily Traffic: 23650 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 48 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	3.55	0.16	-1.20	65.0	62.9	61.6	55.6	64.0	64.6	70 dBA:	**20**	**22**
Medium Trucks	73.11	-13.69	0.16	-1.20	58.4	37.1	43.2	24.9	38.0	40.8	65 dBA:	**43**	**48**
Heavy Trucks	80.26	-17.65	0.16	-1.20	61.6	36.2	32.8	37.5	43.7	43.8	60 dBA:	**93**	**102**
				Total:	**67.2**	**62.9**	**61.7**	**55.6**	**64.0**	**64.7**	55 dBA:	**200**	**221**

Road Name: Walnut Avenue **Segment: North of Hill Street**
Average Daily Traffic: 8340 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 48 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-0.19	0.16	-1.20	58.2	56.1	54.8	48.8	57.2	57.8	70 dBA:	**7**	**8**
Medium Trucks	71.09	-17.42	0.16	-1.20	52.6	31.4	37.4	19.1	32.2	35.0	65 dBA:	**15**	**17**
Heavy Trucks	78.74	-21.38	0.16	-1.20	56.3	31.0	27.6	32.2	38.4	38.5	60 dBA:	**33**	**36**
				Total:	**61.1**	**56.1**	**54.9**	**48.9**	**57.3**	**57.9**	55 dBA:	**71**	**78**

Road Name: Walnut Avenue **Segment: North of 20th Street**
Average Daily Traffic: 8030 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 120 FEET FROM CENTERLINE (Equiv. Lane Dist: 119.18 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-1.14	-5.76	-1.20	54.4	52.3	51.0	45.0	53.4	54.0	70 dBA:	**9**	**10**
Medium Trucks	73.11	-18.38	-5.76	-1.20	47.8	26.5	32.5	14.2	27.4	30.1	65 dBA:	**20**	**22**
Heavy Trucks	80.26	-22.34	-5.76	-1.20	51.0	25.6	22.2	26.9	33.1	33.2	60 dBA:	**44**	**48**
				Total:	**56.6**	**52.3**	**51.0**	**45.0**	**53.4**	**54.1**	55 dBA:	**94**	**104**

Road Name: Walnut Avenue **Segment: North of Pacific Coast Highway**
Average Daily Traffic: 9000 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 35 FEET FROM CENTERLINE (Equiv. Lane Dist: 32.08 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-0.65	2.79	-1.20	63.5	61.3	60.0	54.0	62.4	63.1	70 dBA:	**11**	**12**
Medium Trucks	73.11	-17.89	2.79	-1.20	56.8	35.6	41.6	23.3	36.4	39.2	65 dBA:	**24**	**26**
Heavy Trucks	80.26	-21.84	2.79	-1.20	60.0	34.7	31.3	35.9	42.1	42.2	60 dBA:	**51**	**56**
				Total:	**65.7**	**61.4**	**60.1**	**54.1**	**62.5**	**63.1**	55 dBA:	**110**	**121**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2041 WITH PROJECT CONDITIONS

Project: LBCC 2041 Master Plan for the LAC Improvements
Site Conditions: Soft

Road Name: Walnut Avenue **Segment: South of Pacific Coast Highway**
Average Daily Traffic: 5770 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 35 FEET FROM CENTERLINE (Equiv. Lane Dist: 32.08 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-2.58	2.79	-1.20	61.5	59.4	58.1	52.1	60.5	61.1	70 dBA:	**8**	**9**
Medium Trucks	73.11	-19.82	2.79	-1.20	54.9	33.6	39.7	21.4	34.5	37.3	65 dBA:	**18**	**19**
Heavy Trucks	80.26	-23.77	2.79	-1.20	58.1	32.7	29.3	34.0	40.2	40.3	60 dBA:	**38**	**42**
				Total:	**63.7**	**59.4**	**58.2**	**52.1**	**60.5**	**61.2**	55 dBA:	**82**	**90**

Road Name: Cherry Avenue **Segment: North of Pacific Coast Highway**
Average Daily Traffic: 24940 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Minor Avenue

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 38.07 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.28	1.67	-1.20	70.1	67.7	66.4	60.4	68.8	69.5	70 dBA:	**43**	**47**
Medium Trucks	76.31	-12.59	1.67	-1.20	64.2	45.0	37.2	46.4	52.6	52.6	65 dBA:	**93**	**100**
Heavy Trucks	81.16	-10.37	1.67	-1.20	71.3	54.3	46.5	55.7	61.9	61.9	60 dBA:	**200**	**216**
				Total:	**74.2**	**68.0**	**66.5**	**61.8**	**69.7**	**70.2**	55 dBA:	**430**	**466**

Road Name: Cherry Avenue **Segment: South of Pacific Coast Highway**
Average Daily Traffic: 18370 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 2 Roadway Classification: Minor Avenue

	NOISE PARAMETERS AT 30 FEET FROM CENTERLINE (Equiv. Lane Dist: 18 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	2.99	6.55	-1.20	67.8	65.4	64.1	58.1	66.5	67.1	70 dBA:	**26**	**27**
Medium Trucks	71.09	-11.87	6.55	-1.20	64.6	45.4	37.6	46.8	52.9	53.0	65 dBA:	**55**	**58**
Heavy Trucks	78.74	-9.65	6.55	-1.20	74.4	57.4	49.7	58.9	65.0	65.1	60 dBA:	**118**	**126**
				Total:	**75.6**	**66.1**	**64.3**	**61.6**	**68.9**	**69.3**	55 dBA:	**255**	**271**

Road Name: Hill Street **Segment: West of Orange Avenue**
Average Daily Traffic: 5020 Vehicles Vehicle Speed: 30 MPH Vehicle Mix: 1 Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 53.19 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-3.18	-0.51	-1.20	57.6	55.5	54.2	48.2	56.6	57.2	70 dBA:	**7**	**8**
Medium Trucks	73.11	-20.42	-0.51	-1.20	51.0	29.7	35.8	17.5	30.6	33.4	65 dBA:	**15**	**17**
Heavy Trucks	80.26	-24.38	-0.51	-1.20	54.2	28.8	25.4	30.1	36.3	36.4	60 dBA:	**33**	**36**
				Total:	**59.8**	**55.5**	**54.3**	**48.2**	**56.6**	**57.3**	55 dBA:	**71**	**78**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2041 WITH PROJECT CONDITIONS

Project: LBCC 2041 Master Plan for the LAC Improvements
Site Conditions: Soft

Road Name: Hill Street **Segment: East of Walnut Avenue**

Average Daily Traffic: 4190 Vehicles | Vehicle Speed: 30 MPH | Vehicle Mix: 1 | Roadway Classification: Neighborhood Connector

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 42.77 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	62.51	-3.97	0.91	-1.20	58.3	56.1	54.8	48.8	57.2	57.9	70 dBA:	**6**	**7**
Medium Trucks	73.11	-21.21	0.91	-1.20	51.6	30.4	36.4	18.1	31.2	34.0	65 dBA:	**14**	**15**
Heavy Trucks	80.26	-25.16	0.91	-1.20	54.8	29.5	26.1	30.7	36.9	37.0	60 dBA:	**30**	**33**
				Total:	**60.5**	**56.2**	**54.9**	**48.9**	**57.3**	**57.9**	55 dBA:	**64**	**70**

Road Name: 20th Street **Segment: West of Orange Avenue**

Average Daily Traffic: 3780 Vehicles | Vehicle Speed: 25 MPH | Vehicle Mix: 1 | Roadway Classification: Local

	NOISE PARAMETERS AT 35 FEET FROM CENTERLINE (Equiv. Lane Dist: 33.82 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-3.62	2.44	-1.20	57.1	54.9	53.6	47.6	56.0	56.7	70 dBA:	**4**	**5**
Medium Trucks	71.09	-20.86	2.44	-1.20	51.5	30.2	36.2	17.9	31.1	33.8	65 dBA:	**9**	**10**
Heavy Trucks	78.74	-24.82	2.44	-1.20	55.2	29.8	26.4	31.1	37.3	37.4	60 dBA:	**19**	**21**
				Total:	**59.9**	**55.0**	**53.7**	**47.7**	**56.1**	**56.7**	55 dBA:	**41**	**46**

Road Name: 20th Street **Segment: West of Alimitos Avenue**

Average Daily Traffic: 2780 Vehicles | Vehicle Speed: 25 MPH | Vehicle Mix: 1 | Roadway Classification: Local

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 49.18 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-4.96	0.00	-1.20	53.3	51.2	49.9	43.8	52.3	52.9	70 dBA:	**3**	**4**
Medium Trucks	71.09	-22.20	0.00	-1.20	47.7	26.4	32.5	14.2	27.3	30.1	65 dBA:	**7**	**8**
Heavy Trucks	78.74	-26.15	0.00	-1.20	51.4	26.0	22.6	27.3	33.5	33.6	60 dBA:	**15**	**17**
				Total:	**56.1**	**51.2**	**49.9**	**43.9**	**52.3**	**53.0**	55 dBA:	**33**	**37**

Road Name: 20th Street **Segment: East of Alamitos Avenue**

Average Daily Traffic: 4070 Vehicles | Vehicle Speed: 25 MPH | Vehicle Mix: 1 | Roadway Classification: Local

	NOISE PARAMETERS AT 30 FEET FROM CENTERLINE (Equiv. Lane Dist: 28.62 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-3.30	3.53	-1.20	58.5	56.3	55.0	49.0	57.4	58.1	70 dBA:	**4**	**5**
Medium Trucks	71.09	-20.54	3.53	-1.20	52.9	31.6	37.6	19.4	32.5	35.3	65 dBA:	**10**	**10**
Heavy Trucks	78.74	-24.50	3.53	-1.20	56.6	31.2	27.8	32.5	38.7	38.8	60 dBA:	**20**	**23**
				Total:	**61.3**	**56.4**	**55.1**	**49.1**	**57.5**	**58.1**	55 dBA:	**44**	**49**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2041 WITH PROJECT CONDITIONS

Project: LBCC 2041 Master Plan for the LAC Improvements
Site Conditions: Soft

Road Name: 20th Street **Segment: East of Walnut Avenue**
Average Daily Traffic: 3320 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Local

	NOISE PARAMETERS AT 30 FEET FROM CENTERLINE (Equiv. Lane Dist: 28.62 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-4.19	3.53	-1.20	57.6	55.5	54.1	48.1	56.6	57.2	70 dBA:	**4**	**4**
Medium Trucks	71.09	-21.43	3.53	-1.20	52.0	30.7	36.8	18.5	31.6	34.4	65 dBA:	**8**	**9**
Heavy Trucks	78.74	-25.38	3.53	-1.20	55.7	30.3	26.9	31.6	37.8	37.9	60 dBA:	**18**	**20**
				Total:	**60.4**	**55.5**	**54.2**	**48.2**	**56.6**	**57.3**	55 dBA:	**39**	**42**

Road Name: 19th Street **Segment: West of Orange Avenue**
Average Daily Traffic: 1550 Vehicles Vehicle Speed: 25 MPH Vehicle Mix: 1 Roadway Classification: Local

	NOISE PARAMETERS AT 30 FEET FROM CENTERLINE (Equiv. Lane Dist: 28.62 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-7.49	3.53	-1.20	54.3	52.2	50.8	44.8	53.2	53.9	70 dBA:	**2**	**3**
Medium Trucks	71.09	-24.73	3.53	-1.20	48.7	27.4	33.5	15.2	28.3	31.1	65 dBA:	**5**	**5**
Heavy Trucks	78.74	-28.69	3.53	-1.20	52.4	27.0	23.6	28.3	34.5	34.6	60 dBA:	**11**	**12**
				Total:	**57.1**	**52.2**	**50.9**	**44.9**	**53.3**	**53.9**	55 dBA:	**23**	**26**

Road Name: Pacific Coast Highway **Segment: West of Atlantic Avenue**
Average Daily Traffic: 42320 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 34.7 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	5.44	2.28	-1.20	71.6	69.2	68.3	64.2	71.7	72.2	70 dBA:	**65**	**71**
Medium Trucks	74.83	-12.68	2.28	-1.20	63.2	42.0	40.6	40.2	46.9	47.2	65 dBA:	**141**	**152**
Heavy Trucks	80.05	-21.53	2.28	-1.20	59.6	29.1	25.0	29.0	35.4	35.5	60 dBA:	**303**	**327**
				Total:	**72.4**	**69.2**	**68.3**	**64.2**	**71.7**	**72.2**	55 dBA:	**653**	**705**

Road Name: Pacific Coast Highway **Segment: West of Martin Luther King Jr. Avenue**
Average Daily Traffic: 46360 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 27 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	5.84	3.91	-1.20	73.7	71.2	70.3	66.2	73.8	74.3	70 dBA:	**80**	**87**
Medium Trucks	74.83	-12.29	3.91	-1.20	65.3	44.0	42.6	42.3	48.9	49.2	65 dBA:	**173**	**187**
Heavy Trucks	80.05	-21.14	3.91	-1.20	61.6	31.2	27.0	31.0	37.4	37.5	60 dBA:	**372**	**402**
				Total:	**74.5**	**71.2**	**70.3**	**66.3**	**73.8**	**74.3**	55 dBA:	**802**	**867**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2041 WITH PROJECT CONDITIONS **Project: LBCC 2041 Master Plan for the LAC Improvements**
Site Conditions: Soft

Road Name: Pacific Coast Highway **Segment: West of Orange Ave**
Average Daily Traffic: 46160 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 41.58 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	5.82	1.10	-1.20	70.8	68.4	67.5	63.4	70.9	71.4	70 dBA:	**63**	**69**
Medium Trucks	74.83	-12.31	1.10	-1.20	62.4	41.2	39.8	39.4	46.1	46.4	65 dBA:	**137**	**148**
Heavy Trucks	80.05	-21.16	1.10	-1.20	58.8	28.3	24.2	28.2	34.6	34.7	60 dBA:	**295**	**318**
				Total:	**71.6**	**68.4**	**67.5**	**63.4**	**70.9**	**71.4**	55 dBA:	**635**	**686**

Road Name: Pacific Coast Highway **Segment: West of May Avenue**
Average Daily Traffic: 52020 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 50 FEET FROM CENTERLINE (Equiv. Lane Dist: 34.7 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	6.34	2.28	-1.20	72.5	70.1	69.2	65.1	72.6	73.1	70 dBA:	**75**	**81**
Medium Trucks	74.83	-11.79	2.28	-1.20	64.1	42.9	41.5	41.1	47.8	48.1	65 dBA:	**161**	**174**
Heavy Trucks	80.05	-20.64	2.28	-1.20	60.5	30.0	25.9	29.9	36.3	36.4	60 dBA:	**348**	**376**
				Total:	**73.3**	**70.1**	**69.2**	**65.1**	**72.6**	**73.1**	55 dBA:	**749**	**809**

Road Name: Pacific Coast Highway **Segment: East of Walnut Avenue**
Average Daily Traffic: 50810 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 27 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	6.24	3.91	-1.20	74.1	71.6	70.7	66.6	74.2	74.7	70 dBA:	**85**	**92**
Medium Trucks	74.83	-11.89	3.91	-1.20	65.7	44.4	43.0	42.7	49.3	49.6	65 dBA:	**184**	**199**
Heavy Trucks	80.05	-20.74	3.91	-1.20	62.0	31.6	27.4	31.4	37.8	37.9	60 dBA:	**396**	**428**
				Total:	**74.9**	**71.6**	**70.7**	**66.7**	**74.2**	**74.7**	55 dBA:	**853**	**921**

Road Name: Pacific Coast Highway **Segment: East of Cherry Avenue**
Average Daily Traffic: 49060 Vehicles Vehicle Speed: 35 MPH Vehicle Mix: 3 Roadway Classification: Regional Corridor

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 48 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	65.11	6.09	0.16	-1.20	70.2	67.7	66.8	62.7	70.2	70.8	70 dBA:	**62**	**68**
Medium Trucks	74.83	-12.04	0.16	-1.20	61.7	40.5	39.1	38.8	45.4	45.7	65 dBA:	**135**	**145**
Heavy Trucks	80.05	-20.89	0.16	-1.20	58.1	27.7	23.5	27.5	33.9	34.0	60 dBA:	**290**	**313**
				Total:	**71.0**	**67.7**	**66.8**	**62.8**	**70.3**	**70.8**	55 dBA:	**625**	**675**

General Information

Serial Number	02509
Model	831
Firmware Version	2.112
Filename	831_Data.005
User	GT
Job Description	Northwest Fresno Walmart Relocation
Location	Rooftop HVAC Unit
Measurement Description	
Start Time	Saturday, 2013 July 27 18:31:43
Stop Time	Saturday, 2013 July 27 18:41:44
Duration	00:10:01.1
Run Time	00:10:01.1
Pause	00:00:00.0
Pre Calibration	Saturday, 2013 July 27 17:53:07
Post Calibration	None
Calibration Deviation	---

Note

Located 10 feet southeast of rooftop HVAC Unit 14 located on western side of roof
94 F, 30% Hu., 29.45 in Hg, no wind, partly cloudy

Overall Data

LAeq		66.6	dB
LASmax	2013 Jul 27 18:33:16	67.6	dB
LApeak (max)	2013 Jul 27 18:32:17	81.6	dB
LASmin	2013 Jul 27 18:41:08	65.8	dB
LCeq		75.8	dB
LAeq		66.6	dB
LCeq - LAeq		9.2	dB
LAIeq		67.2	dB
LAeq		66.6	dB
LAIeq - LAeq		0.6	dB
Ldn		66.6	dB
LDay 07:00-23:00		66.6	dB
LNight 23:00-07:00		---	dB
Lden		66.6	dB
LDay 07:00-19:00		66.6	dB
LEvening 19:00-23:00		---	dB
LNight 23:00-07:00		---	dB
LAE		94.4	dB
# Overloads		0	
Overload Duration		0.0	s
# OBA Overloads		0	
OBA Overload Duration		0.0	s

Statistics

LAS5.00	67.0	dBA
LAS10.00	66.9	dBA
LAS33.30	66.7	dBA
LAS50.00	66.6	dBA
LAS66.60	66.5	dBA
LAS90.00	66.3	dBA
LAS > 65.0 dB (Exceedence Counts / Duration)	1 / 601.1	s
LAS > 85.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0 / 0.0	s

Settings

RMS Weight	A Weighting	
Peak Weight	A Weighting	
Detector	Slow	
Preamp	PRM831	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Freq. Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Gain	+0	dB
Under Range Limit	26.2	dB
Under Range Peak	75.8	dB
Noise Floor	17.1	dB
Overload	143.4	dB

1/1 Spectra

Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k
LZeq	70.9	64.4	61.4	74.2	68.2	64.9	66.3	61.7	55.1	49.9	44.3	44.0
LZSmax	83.8	78.9	70.0	78.4	72.3	66.1	67.8	63.1	56.9	53.2	46.7	45.4
LZSmin	53.2	56.5	56.7	67.7	66.1	63.5	65.0	60.7	53.9	48.4	43.2	43.7

1/3 Spectra

Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
LZeq	68.1	65.7	63.2	61.0	58.0	59.3	56.0	57.8	55.8	69.7	72.0	59.3
LZSmax	82.3	79.5	78.7	77.2	72.8	72.3	67.9	63.5	64.0	74.2	76.1	72.0
LZSmin	41.9	46.3	48.8	48.7	46.5	49.7	50.1	51.8	41.2	63.9	67.9	54.5

Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	61.6	63.7	64.5	59.0	58.7	60.9	63.2	60.8	59.9	59.2	56.1	54.6
LZSmax	71.3	68.0	67.3	61.6	61.7	64.1	65.5	64.2	62.0	60.7	57.6	58.6
LZSmin	52.9	60.0	57.2	45.1	56.0	58.9	61.1	58.4	58.4	57.1	54.9	53.3

Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	52.0	49.8	48.4	46.4	45.4	42.8	41.1	38.6	38.5	38.4	39.0	40.2
LZSmax	54.4	52.3	51.2	50.2	49.7	45.7	45.4	41.6	40.4	40.4	41.4	41.3
LZSmin	50.9	48.4	46.9	45.0	43.7	41.4	39.6	37.5	37.9	38.0	38.7	39.9

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	27 Jul 2013 17:53:07	-25.9
PRM831	27 Jul 2013 13:36:08	-25.6
PRM831	28 Apr 2013 15:34:24	-25.9
PRM831	23 Apr 2013 10:17:33	-25.0
PRM831	27 Feb 2013 19:15:30	-25.7
PRM831	24 Jan 2013 12:00:16	-25.6
PRM831	15 Jan 2013 07:50:44	-26.2
PRM831	04 Jan 2013 13:47:46	-26.5

General Information

Serial Number	02509
Model	831
Firmware Version	2.112
Filename	831_Data.002
User	GT
Job Description	Northwest Fresno Walmart Relocation
Location	Northwest Fresno Walmart
Measurement Description	
Start Time	Saturday, 2013 July 27 15:49:15
Stop Time	Saturday, 2013 July 27 16:09:15
Duration	00:20:00.6
Run Time	00:20:00.6
Pause	00:00:00.0
Pre Calibration	Saturday, 2013 July 27 13:36:08
Post Calibration	None
Calibration Deviation	---

Note

Located at the eastern portion of the southern parking lot and approx 140 feet south of the front door
96 F, 35% Humidity, 29.48 in Hg, 3 mph wind, partly cloudy

Overall Data

LAeq		63.1	dB
LASmax	2013 Jul 27 15:59:44	79.2	dB
LApeak (max)	2013 Jul 27 16:06:25	102.2	dB
LASmin	2013 Jul 27 15:50:20	49.6	dB
LCeq		74.0	dB
LAeq		63.1	dB
LCeq - LAeq		10.9	dB
LAIeq		67.4	dB
LAeq		63.1	dB
LAIeq - LAeq		4.3	dB
Ldn		63.1	dB
LDay 07:00-23:00		63.1	dB
LNight 23:00-07:00		---	dB
Lden		63.1	dB
LDay 07:00-19:00		63.1	dB
LEvening 19:00-23:00		---	dB
LNight 23:00-07:00		---	dB
LAE		93.9	dB
# Overloads		0	
Overload Duration		0.0	s
# OBA Overloads		0	
OBA Overload Duration		0.0	s

Statistics

LAS5.00	66.7	dBA
LAS10.00	66.3	dBA
LAS33.30	62.8	dBA
LAS50.00	61.7	dBA
LAS66.60	57.7	dBA
LAS90.00	52.8	dBA
LAS > 65.0 dB (Exceedence Counts / Duration)	17 / 347.8	s
LAS > 85.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0 / 0.0	s

Settings

RMS Weight	A Weighting	
Peak Weight	A Weighting	
Detector	Slow	
Preamp	PRM831	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Freq. Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Gain	+0	dB
Under Range Limit	26.1	dB
Under Range Peak	75.6	dB
Noise Floor	17.0	dB
Overload	143.1	dB

1/1 Spectra

Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k
LZeq	66.7	66.1	71.1	71.6	64.9	59.5	59.6	58.3	56.2	51.8	46.8	44.6
LZSmax	82.6	84.9	82.2	89.3	77.1	67.1	72.4	76.6	76.6	69.0	67.7	63.1
LZSmin	46.5	55.4	53.6	59.0	55.2	49.9	45.5	43.6	40.9	37.7	39.6	42.8

1/3 Spectra

Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
LZeq	63.6	61.5	59.8	58.7	60.7	63.4	67.2	66.6	65.3	65.7	67.5	67.2
LZSmax	80.9	76.9	73.6	75.5	79.8	83.7	80.9	76.8	78.9	83.8	87.4	88.8
LZSmin	37.3	40.3	43.7	45.3	48.2	51.5	55.9	60.4	54.9	53.2	57.5	47.0

Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	61.7	61.0	54.9	52.9	57.0	53.2	57.3	54.1	52.1	54.5	53.3	52.7
LZSmax	76.0	71.0	69.8	65.8	64.6	65.6	67.0	71.0	67.1	65.9	72.9	73.0
LZSmin	52.1	48.8	46.7	42.4	46.2	44.6	43.2	38.5	38.6	39.0	39.4	38.2

Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	52.5	50.9	50.7	49.0	46.4	44.5	43.0	41.7	41.1	40.0	39.6	40.0
LZSmax	75.9	69.6	63.7	63.8	64.4	64.7	63.3	62.7	62.7	60.8	57.9	52.5
LZSmin	37.2	35.4	34.6	33.1	32.6	32.8	33.6	34.7	35.9	36.7	37.7	39.4

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	27 Jul 2013 13:36:08	-25.6
PRM831	28 Apr 2013 15:34:24	-25.9
PRM831	23 Apr 2013 10:17:33	-25.0
PRM831	27 Feb 2013 19:15:30	-25.7
PRM831	24 Jan 2013 12:00:16	-25.6
PRM831	15 Jan 2013 07:50:44	-26.2
PRM831	04 Jan 2013 13:47:46	-26.5

File Translated: V:\Vista Env\2010\10022-Fresno Walmart\Noise Measurements\LD\15.slmdl
Model/Serial Number: 824 / A3176
Firmware/Software Revs: 4.283 / 3.120
Name:
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
Location: 30' N of vendor truck loading area for Fresno Walmart
Note1: Approx 70' S of Locust Ave CL
Note2: 52F, 29.57 in Hg, 67% Humid., no wind, clear sky

Overall Any Data
Start Time: 19-May-2011 07:05:53
Elapsed Time: 00:08:30.5

	A Weight		C Weight		Flat	
Leq:	54.8 dBA		65.1 dBC		66.1 dBF	
SEL:	81.9 dBA		92.2 dBC		93.2 dBF	
Peak:	85.2 dBA		85.8 dBC		86.0 dBF	
	19-May-2011	07:09:58	19-May-2011	07:09:52	19-May-2011	07:09:52
Lmax (slow):	67.9 dBA		73.2 dBC		73.8 dBF	
	19-May-2011	07:09:50	19-May-2011	07:13:57	19-May-2011	07:13:57
Lmin (slow):	43.7 dBA		60.0 dBC		61.6 dBF	
	19-May-2011	07:11:17	19-May-2011	07:06:52	19-May-2011	07:06:51
Lmax (fast):	70.7 dBA		75.5 dBC		75.7 dBF	
	19-May-2011	07:09:58	19-May-2011	07:11:34	19-May-2011	07:11:34
Lmin (fast):	43.1 dBA		57.8 dBC		58.9 dBF	
	19-May-2011	07:11:17	19-May-2011	07:09:10	19-May-2011	07:09:10
Lmax (impulse):	72.1 dBA		76.8 dBC		77.1 dBF	
	19-May-2011	07:09:58	19-May-2011	07:11:34	19-May-2011	07:11:34
Lmin (impulse):	43.6 dBA		61.1 dBC		62.4 dBF	
	19-May-2011	07:11:17	19-May-2011	07:06:51	19-May-2011	07:09:10

Spectra

Date	Time	Run Time
19-May-2011	07:05:53	00:08:30.5

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	50.2		56.3		35.5		630	46.5		61.4		31.0	
16.0	50.9	55.5	56.1	61.5	37.1	41.8	800	45.4		60.8		30.5	
20.0	51.0		57.6		38.0		1000	44.5	49.3	56.1	63.9	31.7	35.6
25.0	55.8		57.5		41.1		1250	43.5		59.4		30.2	
31.5	57.7	61.6	57.1	63.3	46.2	49.9	1600	42.6		56.3		28.1	
40.0	56.7		60.3		46.3		2000	41.1	46.1	56.4	61.9	24.9	30.4
50.0	56.8		57.9		44.0		2500	40.0		58.4		21.7	
63.0	55.7	61.0	56.5	62.1	45.9	49.1	3150	40.2		60.8		19.4	
80.0	56.2		57.4		42.2		4000	39.5	43.8	58.6	63.4	18.7	24.1
100	55.6		55.1		42.3		5000	36.7		54.4		19.7	
125	54.3	59.2	59.0	63.8	40.7	45.7	6300	32.8		50.2		21.5	
160	52.8		61.0		39.4		8000	30.2	35.2	57.7	58.5	21.2	25.9
200	51.1		57.3		35.5		10000	25.4		41.5		20.5	
250	51.4	55.2	70.6	71.0	34.6	39.0	12500	22.9		32.2		19.4	
315	48.2		58.2		32.0		16000	20.8	26.5	27.4	33.9	19.1	24.4
400	47.0		59.0		30.1		20000	21.2		23.8		20.3	
500	47.0	51.6	64.3	66.9	30.4	35.3							

Ln Start Level: 15 dB

L1.00	0.0 dBA	L50.00	0.0 dBA	L95.00	0.0 dBA
L5.00	0.0 dBA	L90.00	0.0 dBA	L99.00	0.0 dBA

Detector: Slow
Weighting: A
SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
SPL Exceedance level 2: 120 dB Exceeded: 0 times
Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
Peak-2 Exceedance Level: 100 dB Exceeded: 0 times
Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

File Translated: V:\Vista Env\2010\10022-Fresno Walmart\Noise Measurements\LD\15.slmdl
Model/Serial Number: 824 / A3176

Current Any Data
Start Time: 19-May-2011 07:05:53
Elapsed Time: 00:08:30.5

	A Weight		C Weight		Flat	
Leq:	54.8 dBA		65.1 dBC		66.1 dBF	
SEL:	81.9 dBA		92.2 dBC		93.2 dBF	
Peak:	85.2 dBA		85.8 dBC		86.0 dBF	
	19-May-2011	07:09:58	19-May-2011	07:09:52	19-May-2011	07:09:52
Lmax (slow):	67.9 dBA		73.2 dBC		73.8 dBF	
	19-May-2011	07:09:50	19-May-2011	07:13:57	19-May-2011	07:13:57
Lmin (slow):	43.7 dBA		60.0 dBC		61.6 dBF	
	19-May-2011	07:11:17	19-May-2011	07:06:52	19-May-2011	07:06:51
Lmax (fast):	70.7 dBA		75.5 dBC		75.7 dBF	
	19-May-2011	07:09:58	19-May-2011	07:11:34	19-May-2011	07:11:34
Lmin (fast):	43.1 dBA		57.8 dBC		58.9 dBF	
	19-May-2011	07:11:17	19-May-2011	07:09:10	19-May-2011	07:09:10
Lmax (impulse):	72.1 dBA		76.8 dBC		77.1 dBF	
	19-May-2011	07:09:58	19-May-2011	07:11:34	19-May-2011	07:11:34
Lmin (impulse):	43.6 dBA		61.1 dBC		62.4 dBF	
	19-May-2011	07:11:17	19-May-2011	07:06:51	19-May-2011	07:09:10

Calibrated: 18-May-2011 13:09:02 Offset: -48.2 dB
Checked: 19-May-2011 06:46:08 Level: 113.9 dB
Calibrator not set Level: 114.0 dB
Cal Records Count: 0

Interval Records: Disabled Number Interval Records: 0
History Records: Disabled Number History Records: 0
Run/Stop Records: Number Run/Stop Records: 2

APPENDIX D– TRAFFIC IMPACT ANALYSIS

LINSCOTT LAW & GREENSPAN engineers

TRAFFIC IMPACT ANALYSIS REPORT

LBCCD 2041 MASTER PLAN

PACIFIC COAST CAMPUS

Long Beach , California
January 19, 2018

Prepared for:

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LLG Ref. 2-17-3887-1

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TRAFFIC IMPACT ANALYSIS REPORT

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS

Long Beach, California
January 19, 2018

1.0 INTRODUCTION

This Traffic Impact Analysis report addresses the potential traffic impacts associated with the proposed LBCCD 2041 Master Plan – Pacific Coast Campus (hereinafter referred to as Project). The project site is bounded by the Mary Butler School and 20th Street to the north, Pacific Coast Highway to the south, Orange Avenue to the west and Walnut Avenue to the east in the City of Long Beach, California. The proposed Project will generally consist of the construction of new campus facilities and the renovation of existing campus facilities to meet the District's instructional needs and to accommodate growth in the student body over the planning horizon. In addition to the new and/or renovated instructional space, the proposed Project will also consist of a new parking structure to be located on the northwest corner of the intersection of Walnut Avenue and Pacific Coast Highway.

1.1 Scope of Work

This traffic report documents the findings and recommendations of a traffic impact analysis conducted by Linscott, Law & Greenspan, Engineers (LLG) to determine the potential impacts associated with the proposed Project. The traffic analysis evaluates the operating conditions at twelve (12) key study locations within the project vicinity, estimates the trip generation potential of the proposed Project, superimposes the project-related traffic volumes on the circulation system as it currently exists, and forecasts future operating conditions without and with the proposed Project. Where necessary, intersection improvements/mitigation measures are identified.

The project site has been visited and an inventory of adjacent area roadways and intersections was performed. Existing peak hour traffic information has been collected at twelve (12) key study locations on a "typical" weekday for use in the preparation of intersection level of service calculations. A "typical" weekday constitutes a Tuesday, Wednesday or Thursday and refers to a non-holiday condition when local schools are in session. Information concerning cumulative projects (planned and/or approved) in the vicinity of the proposed Project (i.e. within a 2-mile radius) has been researched at the Cities of Long Beach and Signal Hill. Based on our research, there are thirty (30) cumulative projects located in the City of Long Beach and seven (7) cumulative projects located in the City of Signal Hill. These thirty-seven (37) cumulative projects were considered in the cumulative traffic analysis for this project.

This traffic report satisfies the traffic impact requirements of the Cities of Long Beach and Signal Hill and is consistent with the most current *Congestion Management Program (CMP) for Los Angeles County.* This traffic report analyzes existing and future weekday AM peak hour and PM peak hour traffic conditions for a Year 2041 traffic setting upon completion of the proposed Project. Peak hour traffic forecasts for the Year 2041 horizon year have been projected by increasing existing

(2017) traffic volumes by an annual growth rate of 0.708 percent per year and adding traffic volumes generated by thirty-seven (37) cumulative projects.

1.2 Study Area

A total of twelve (12) locations have been selected for evaluation based on discussions with City of Long Beach staff, and based on review of the existing transportation system surrounding the proposed Project site. Of the 12 identified locations, ten (10) are located in the City of Long Beach and two (2) are located in the City of Signal Hill. It should be noted that six (6) of the key study intersections (i.e. key study intersections #5, #6, #7, #8, #9 and #12) are also under the jurisdiction of Caltrans. The 12 locations listed below provide regional and local access to the study area, as well as the project site, and define the extent of the boundaries for this traffic impact investigation. The local jurisdiction of each key study location is also identified.

Key Study Locations

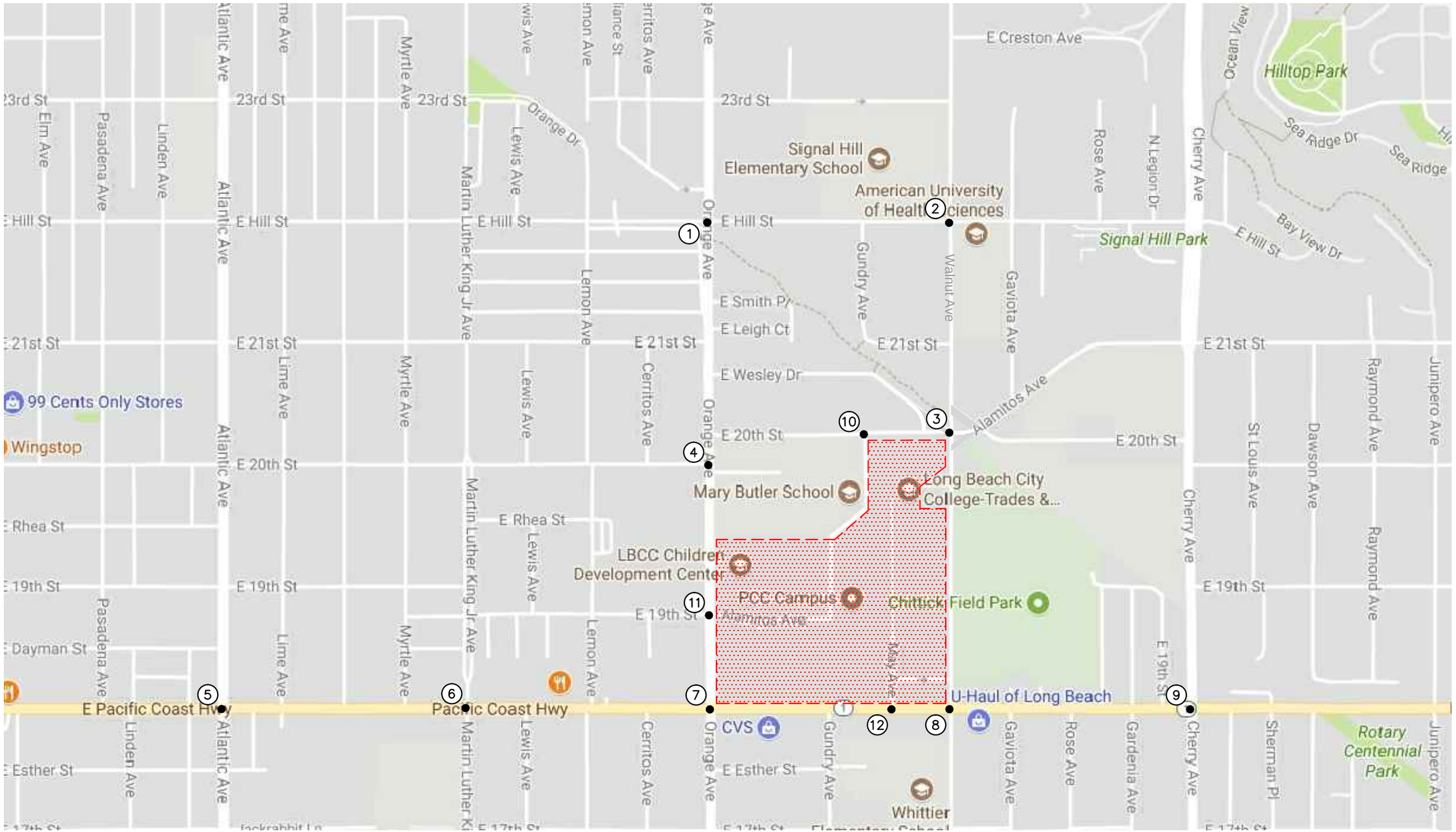
1. Orange Avenue at Hill Street (City of Signal Hill)
2. Walnut Avenue at Hill Street (City of Signal Hill)
3. Walnut Avenue at 20th Street/Alamitos Avenue (City of Long Beach)
4. Orange Avenue at 20th Street (City of Long Beach)
5. Atlantic Avenue at Pacific Coast Highway (City of Long Beach/Caltrans)
6. Martin Luther King Jr. Avenue at Pacific Coast Highway (City of Long Beach/Caltrans)
7. Orange Avenue at Pacific Coast Highway (City of Long Beach/Caltrans)
8. Walnut Avenue at Pacific Coast Highway (City of Long Beach/Caltrans)
9. Cherry Avenue at Pacific Coast Highway (City of Long Beach/Caltrans)
10. Alamitos Avenue at E. 20th Street (City of Long Beach)
11. Orange Avenue at 19th Street/Alamitos Avenue (City of Long Beach)
12. May Avenue at Pacific Coast Highway (City of Long Beach/Caltrans)

Figure 1-1 presents a Vicinity Map, which illustrates the general location of the Project. It also identifies the 12 study locations on the surrounding street system.

The Volume-Capacity (V/C) and Level of Service (LOS) investigations at these key locations were used to evaluate the potential traffic-related impacts associated with area growth, cumulative projects and the proposed Project. When necessary, this report recommends intersection improvements that may be required to accommodate future traffic volumes and restore/maintain an acceptable Level of Service, and/or mitigates the impact of the project.

Included in this Traffic Impact Analysis are:

- Existing traffic counts,
- Forecast project traffic generation/distribution/assignment,
- Forecast cumulative project traffic generation/distribution/assignment,
- AM and PM peak hour capacity analyses for existing conditions,
- AM and PM peak hour capacity analyses for existing plus project conditions,
- AM and PM peak hour capacity analyses for future Year 2041 traffic conditions without and with the proposed Project,
- Caltrans Evaluation at applicable locations, and
- Recommended Improvements.



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 1–1

VICINTY MAP

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH

2.0 PROJECT DESCRIPTION

The project site is bounded by the Mary Butler School and 20th Street to the north, Pacific Coast Highway to the south, Orange Avenue to the west and Walnut Avenue to the east in the City of Long Beach, California. ***Figure 2-1*** presents an aerial depiction of the existing site.

Figure 2-2 presents the proposed site plan for the proposed Project, which shows the locations of the proposed renovations and new construction. As shown, the proposed Project will generally consist of the construction of new campus facilities and the renovation of existing campus facilities to meet the District's instructional needs and to accommodate growth in the student body over the planning horizon. In addition to the new and/or renovated instructional space, the proposed Project will also consist of a new parking structure to be located on the northwest corner of the intersection of Walnut Avenue and Pacific Coast Highway. All project components are expected to be completed by the Year 2041.

The Pacific Coast Campus has a current baseline (Year 2017) student enrollment of 5,161 students. As stated above, the renovation of existing campus facilities and the construction of new campus facilities are required to meet the District's instructional needs and to accommodate growth in the student body. At completion of the Master Plan in the Year 2041, the Pacific Coast Campus is projected to accommodate a future student enrollment of 8,440 students, resulting in a net increase of 3,279 students over the existing student enrollment.

2.1 Site Access

Vehicular access to the campus would continue to be provided from 20th Street, Pacific Coast Highway, Orange Avenue and Walnut Avenue. 20th Street currently provides and will continue to provide access to the site via the unsignalized intersection of 20th Street/Alamitos Avenue (i.e. key study intersection #10). Pacific Coast Highway currently provides and will continue to provide access to the site via the unsignalized intersection of Pacific Coast Highway/May Avenue (i.e. key study intersection #12). Orange Avenue currently provides and will continue to provide access to the site via the unsignalized intersection of Orange Avenue/19th Street-Alamitos Avenue (i.e. key study intersection #11). Walnut Avenue currently provides and will continue to provide access to the site via various unsignalized access driveways.

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

= PROJECT SITE

= INTERSECTION RECENTLY REALIGNED

FIGURE 2-1

EXISTING SITE AERIAL

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: CHAMBERS GROUP

FIGURE 2-2

PROPOSED SITE PLAN

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH

3.0 EXISTING CONDITIONS

3.1 Existing Street System

The principal local network of streets serving the project site are 20th Street, Orange Avenue, Walnut Avenue and Pacific Coast Highway. The following discussion provides a brief synopsis of these key area streets. The descriptions are based on an inventory of existing roadway conditions.

20th Street is generally a two-lane, undivided roadway, oriented in the east-west direction. 20th Street borders the project site to the north and currently provides access to the site via the unsignalized intersection of 20th Street/Alamitos Avenue (i.e. key study intersection #10). The posted speed limit on 20th Street is 25 miles per hour (mph). On-street parking is generally permitted along this roadway in the vicinity of the project. A traffic signal controls the study intersection of 20th Street at Walnut Avenue.

Orange Avenue is generally a two-lane, undivided roadway north of 20th Street, generally a four-lane, divided roadway between 20th Street and 19th Street/Alamitos Avenue and generally a three-lane, divided roadway between 19th Street/Alamitos Avenue and Pacific Coast Highway, oriented in the north-south direction. Orange Avenue borders the project site to the west and currently provides access to the site via the unsignalized intersection of Orange Avenue/19th Street-Alamitos Avenue (i.e. key study intersection #11). The posted speed limit on Orange Avenue is 35 mph. On-street parking is generally permitted along this roadway in the vicinity of the project, except on the east side of the street between Pacific Coast Highway and 19th Street/Alamitos Avenue. Traffic signals control the study intersections of Orange Avenue at Hill Street, 20th Street and Pacific Coast Highway.

Walnut Avenue is generally a two-lane, undivided roadway, oriented in the north-south direction. Walnut Avenue borders the project site to the east and currently provides access to the site via various unsignalized access driveways. The posted speed limit on Walnut Avenue is 30 mph. On-street parking is generally permitted along this roadway in the vicinity of the project. Traffic signals control the study intersections of Walnut Avenue at 20th Street/Alamitos Avenue and Pacific Coast Highway.

Pacific Coast Highway is generally a six-lane, divided roadway, oriented in the east-west direction. Pacific Coast Highway borders the project site to the south and currently provides access to the site via the unsignalized intersection of Pacific Coast Highway/May Avenue (i.e. key study intersection #12). The posted speed limit on Pacific Coast Highway is 35 mph. On-street parking is generally permitted along various sections of this roadway in the vicinity of the project. Traffic signals control the study intersections of Pacific Coast Highway at Atlantic Avenue, Martin Luther King Jr. Avenue, Orange Avenue, Walnut Avenue and Cherry Avenue.

Figure 3-1 presents an inventory of the existing roadway conditions for the arterials and intersections evaluated in this report. This figure identifies the number of travel lanes for key arterials, as well as intersection configurations and controls for the key area study intersections.

3.2 Existing Traffic Volumes

Twelve (12) key study intersections have been identified as the locations at which to evaluate existing and future traffic operating conditions. Some portion of potential project-related traffic will pass through each of these intersections, and their analysis will reveal the expected relative impacts of the project. Existing daily, AM peak hour and PM peak hour traffic volumes for the locations evaluated in this report were obtained from daily machine and manual peak hour turning movement counts conducted by Transportation Studies Inc. in October 2017.

Figures 3-2 and ***3-3*** illustrate the existing AM and PM peak hour traffic volumes at the key study intersections evaluated in this report, respectively. ***Appendix A*** contains the detailed peak hour count sheets for the key intersections evaluated in this report.

3.3 Existing Public Transit

Long Beach Transit (LBT) provides public transit services in the vicinity of the proposed Project. ***Figure 3-4*** graphically illustrates the LBT routes within the project study area, respectively. ***Figure 3-5*** identifies the location of the existing bus stops in proximity to the Project site.

3.4 Existing Bicycle Master Plan

The City of Long Beach promotes bicycling as a means of mobility and a way in which to improve the quality of life within its community. The Bicycle Master Plan recognizes the needs of bicycle users and aims to create a complete and safe bicycle network throughout the City. The City of Long Beach Bicycle Facilities in the vicinity of the Project site (existing and proposed) is shown on ***Figure 3-6***.

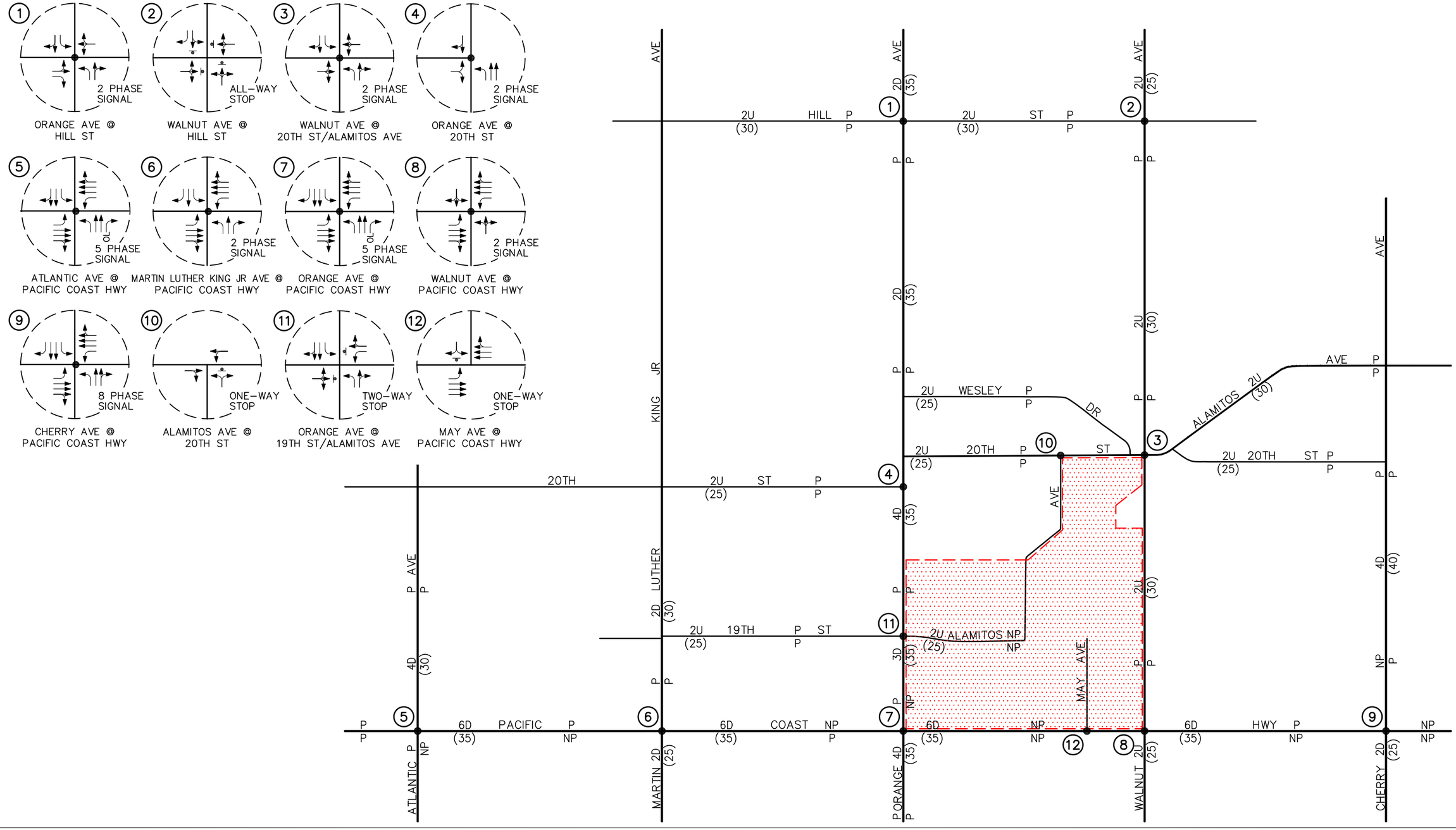
3.5 Existing Intersection Conditions

Existing AM and PM peak hour operating conditions for the key signalized intersections were evaluated using the *Intersection Capacity Utilization* (ICU) methodology for key signalized intersections located within the City of Long Beach and the *Highway Capacity Manual* (HCM) Operations methodology for key signalized intersections located in the City of Signal Hill. All unsignalized intersections were evaluated using the *Highway Capacity Manual* (HCM) Operations methodology. It is noted that the HCM method of analysis is also utilized by Caltrans.

3.5.1 *Intersection Capacity Utilization (ICU) Method of Analysis (Signalized Intersections)*

The ICU technique is intended for signalized intersection analysis and estimates the volume to capacity (V/C) relationship for an intersection based on the individual V/C ratios for key conflicting traffic movements. The ICU numerical value represents the percent signal (green) time, and thus capacity, required by existing and/or future traffic. It should be noted that the ICU methodology assumes uniform traffic distribution per intersection approach lane and optimal signal timing.

Per City of Long Beach requirements, the ICU calculations use a lane capacity of 1,600 vehicles per hour (vph) for left-turn, through, and right-turn lanes, and dual left turn capacity of 2,880 vph. A clearance adjustment factor of 0.10 was added to each Level of Service calculation.



KEY

- (#) = STUDY INTERSECTION
- ← = APPROACH LANE ASSIGNMENT
- ● = TRAFFIC SIGNAL, ▼ = STOP SIGN
- P = PARKING, NP = NO PARKING
- U = UNDIVIDED, D = DIVIDED
- 2 = NUMBER OF TRAVEL LANES
- (XX) = POSTED SPEED LIMIT (MPH)
- OL = OVERLAP
- ▭ = PROJECT SITE

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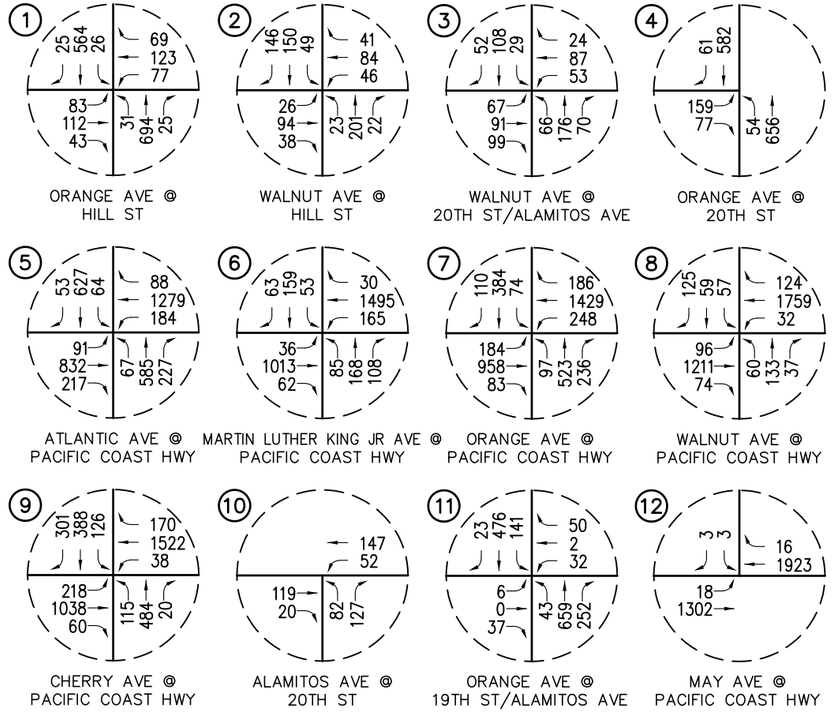
N NO SCALE

FIGURE 3–1

EXISTING ROADWAY CONDITIONS AND INTERSECTION CONTROLS

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH



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KEY

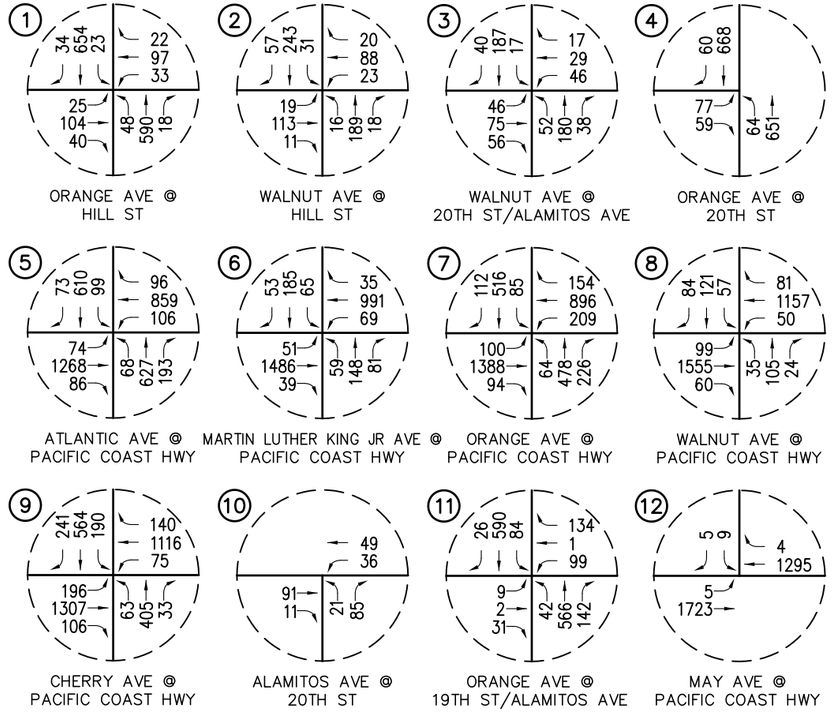
(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 3-2

EXISTING AM PEAK HOUR TRAFFIC VOLUMES

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

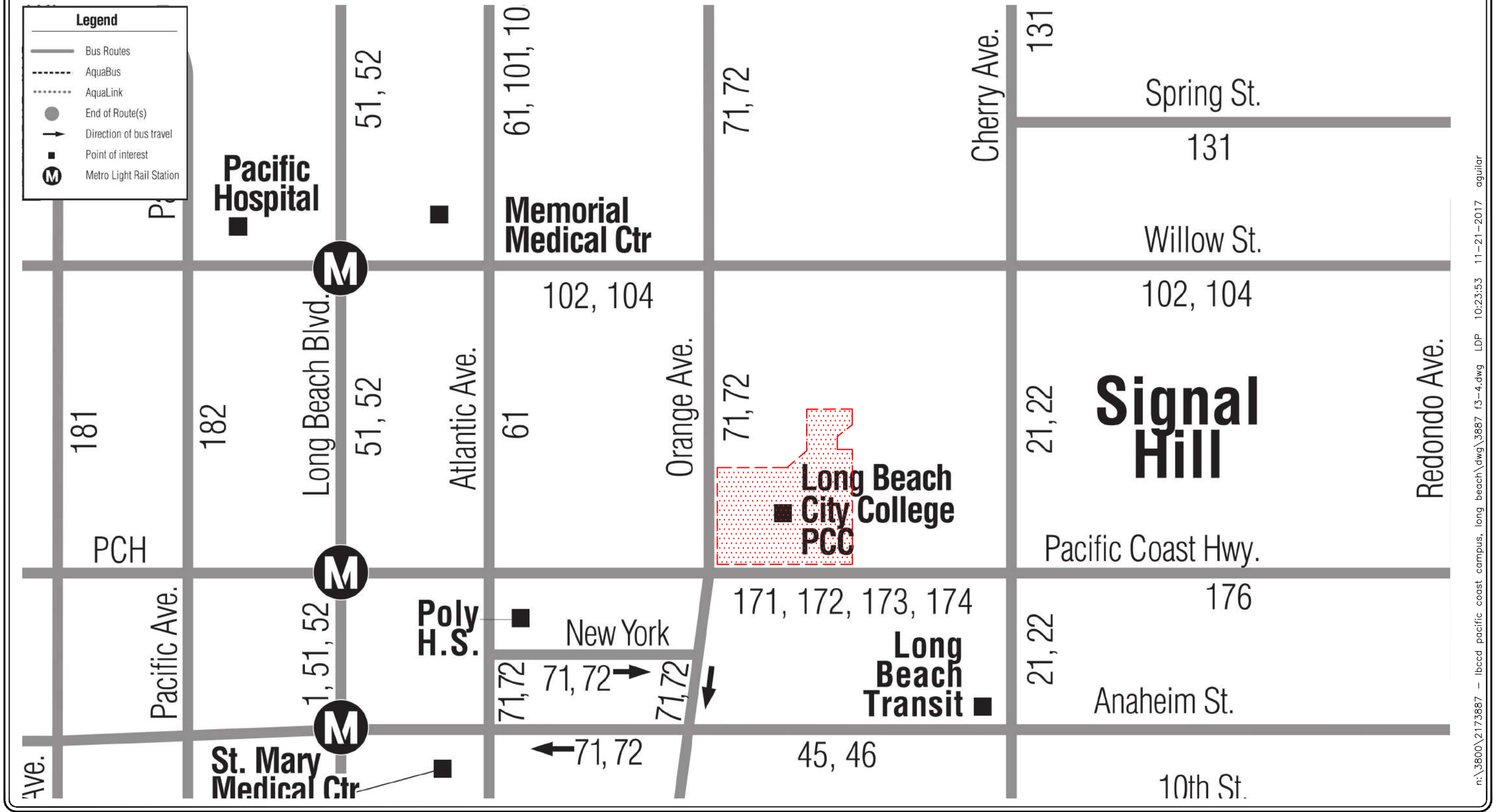
(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 3-3

EXISTING PM PEAK HOUR TRAFFIC VOLUMES

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH



LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: CITY OF LONG BEACH

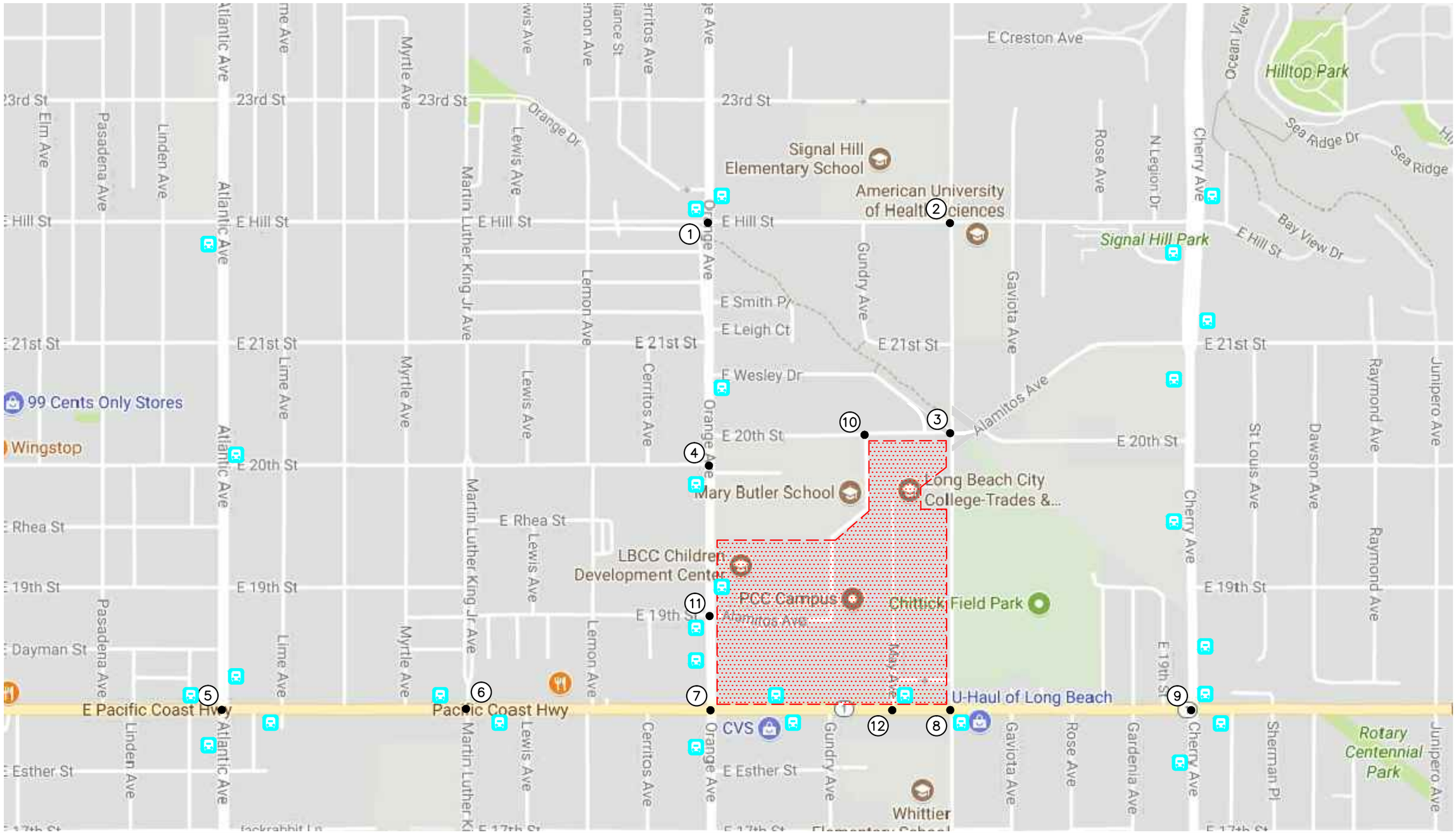
KEY

= PROJECT SITE

FIGURE 3-4

EXISTING LONG BEACH TRANSIT MAP

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH



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LINSCOTT LAW & GREENSPAN engineers

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SOURCE: GOOGLE

KEY

(#) = STUDY INTERSECTION

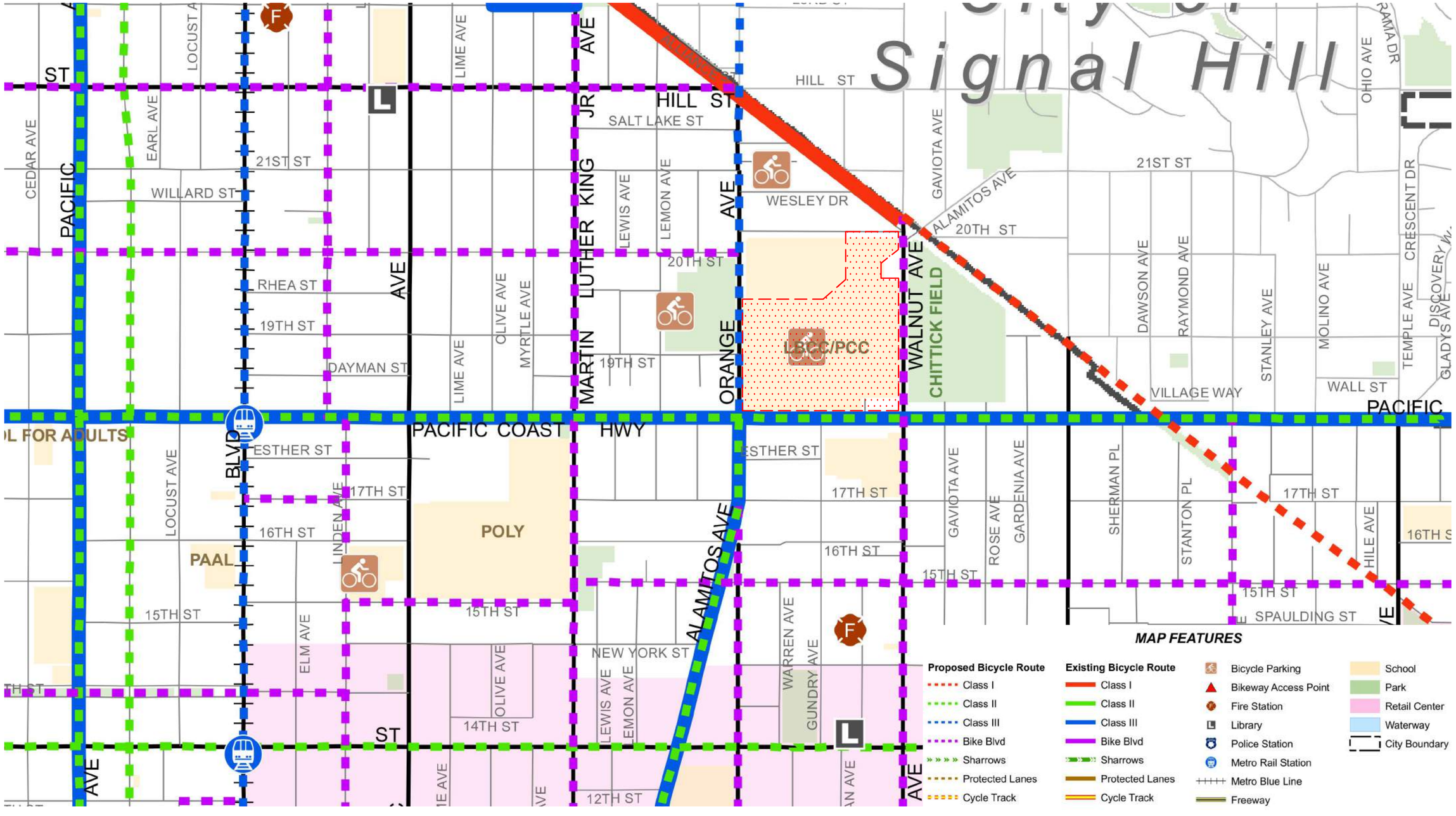
= TRANSIT STOP

= PROJECT SITE

FIGURE 3-5

TRANSIT STOP LOCATIONS

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: CITY OF LONG BEACH

KEY

= PROJECT SITE

FIGURE 3-6

LONG BEACH BIKEWAY FACILITIES

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH

The ICU value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The ICU value is the sum of the critical volume to capacity ratios at an intersection; it is not intended to be indicative of the LOS of each of the individual turning movements. The six qualitative categories of Level of Service have been defined along with the corresponding ICU value range and are shown in ***Table 3-1***.

3.5.2 *Highway Capacity Manual (HCM) Method of Analysis (Signalized Intersections)*

Based on the HCM operations method of analysis, level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption and lost travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometries, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during ideal conditions: in the absence of traffic control, in the absence of geometric delay, in the absence of any incidents and when there are no other vehicles on the road.

In the HCM, only the portion of total delay attributed to the control facility is quantified. This delay is called *control delay*. Control delay includes initial deceleration delay, queue move-up time, stopped delay and final acceleration delay. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle. The six qualitative categories of Level of Service that have been defined along with the corresponding HCM control delay value range for signalized intersections are shown in ***Table 3-2***.

3.5.3 *Highway Capacity Manual (HCM) Method of Analysis (Unsignalized Intersections)*

The HCM unsignalized methodology for stop-controlled intersections was utilized for the analysis of the unsignalized intersections. This methodology estimates the average control delay for each of the subject movements and determines the level of service for each movement. For all-way stop controlled intersections, the overall average control delay measured in seconds per vehicle, and level of service is calculated for the entire intersection. For one-way and two-way stop-controlled (minor street stop-controlled) intersections, this methodology estimates the worst side street delay, measured in seconds per vehicle and determines the level of service for that approach. The HCM control delay value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The six qualitative categories of Level of Service have been defined along with the corresponding HCM control delay value range, as shown in ***Table 3-3***.

3.6 Level of Service Criteria

According to the City of Long Beach, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours, or the current LOS if the existing LOS is worse than LOS D (i.e. LOS E of F). For the study intersections in the City of Signal Hill, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours

3.7 Existing Level of Service Results

Table 3-4 summarizes the existing peak hour service level calculations for the twelve (12) key study intersections based on existing traffic volumes and current street geometrics. Review of *Table 3-4* indicates that two (2) of the twelve (12) key study intersections currently operate at an unacceptable LOS during the AM and/or PM peak hours. The remaining ten (10) key study intersections currently operate at acceptable LOS D or better during the AM and/or PM peak hours. The intersections operating at an adverse level of service are:

	AM Peak Hour		PM Peak Hour	
Key Intersection	ICU/HCM	LOS	ICU/HCM	LOS
11. Orange Avenue at 19th Street/Alamitos Avenue	132.4 s/v	F	158.4 s/v	F
12. May Avenue at Pacific Coast Highway	65.9 s/v	F	---	---

Appendix B presents the ICU/LOS and HCM/LOS calculation worksheets for the key study intersections for the AM peak hour and PM peak hour.

TABLE 3-1

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Level of Service (LOS)	Intersection Capacity Utilization Value (V/C)	Level of Service Description
A	≤ 0.600	EXCELLENT. No vehicle waits longer than one red light, and no approach phase is fully used.
B	0.601 – 0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701 – 0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801 – 0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901 – 1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Potentially very long delays with continuously increasing queue lengths.

TABLE 3-2

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS (HCM METHODOLOGY)[1]

Level of Service (LOS)	Control Delay Per Vehicle (seconds/vehicle)	Level of Service Description
A	$\leq$ 10.0	This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	> 10.0 and $\leq$ 20.0	This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of average delay.
C	> 20.0 and $\leq$ 35.0	Average traffic delays. These higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
D	> 35.0 and $\leq$ 55.0	Long traffic delays. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high *v/c* ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55.0 and $\leq$ 80.0	Very long traffic delays. This level is considered by many agencies (i.e. SANBAG) to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high *v/c* ratios. Individual cycle failures are frequent occurrences.
F	$\geq$ 80.0	Severe congestion. This level, considered to be unacceptable to most drivers, often occurs with over saturation, that is, when arrival flow rates exceed the capacity of the intersection. It may also occur at high *v/c* ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors to such delay levels.

[1] Source: *Highway Capacity Manual* (Signalized Intersections).

TABLE 3-3

LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS[2]

Level of Service (LOS)	Highway Capacity Manual Delay Value (sec/veh)	Level of Service Description
A	≤ 10.0	Little or no delay
B	> 10.0 and ≤ 15.0	Short traffic delays
C	> 15.0 and ≤ 25.0	Average traffic delays
D	> 25.0 and ≤ 35.0	Long traffic delays
E	> 35.0 and ≤ 50.0	Very long traffic delays
F	> 50.0	Severe congestion

[2] Source: *Highway Capacity Manual* (Unsignalized Intersections).

TABLE 3-4

EXISTING PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY

Key Intersection	Time Period	Jurisdiction	Control Type	(1) Existing Traffic Conditions	
				ICU/HCM	LOS
1. Orange Avenue at Hill Street	AM	Signal Hill	2∅ Traffic Signal	27.6 s/v	C
	PM			11.5 s/v	B
2. Walnut Avenue at Hill Street	AM	Signal Hill	All-Way Stop	13.1 s/v	B
	PM			11.4 s/v	B
3. Walnut Avenue at 20th Street/Alamitos Avenue	AM	Long Beach	2∅ Traffic Signal	0.566	A
	PM			0.514	A
4. Orange Avenue at 20th Street	AM	Long Beach	2∅ Traffic Signal	0.683	B
	PM			0.680	B
5. Atlantic Avenue at Pacific Coast Highway	AM	Long Beach/ Caltrans	5∅ Traffic Signal	0.696	B
	PM			0.706	C
6. Martin Luther King Jr. Ave at Pacific Coast Highway	AM	Long Beach/ Caltrans	2∅ Traffic Signal	0.593	A
	PM			0.613	B
7. Orange Avenue at Pacific Coast Highway	AM	Long Beach/ Caltrans	5∅ Traffic Signal	0.761	C
	PM			0.742	C
8. Walnut Avenue at Pacific Coast Highway	AM	Long Beach/ Caltrans	2∅ Traffic Signal	0.740	C
	PM			0.653	B
9. Cherry Avenue at Pacific Coast Highway	AM	Long Beach/ Caltrans	8∅ Traffic Signal	0.825	D
	PM			0.740	C
10. Alamitos Avenue at E. 20th Street	AM	Long Beach	One-Way Stop	17.0 s/v	C
	PM			9.7 s/v	A
11. Orange Avenue at 19th Street/Alamitos Avenue	AM	Long Beach	Two-Way Stop	**132.4 s/v**	**F**
	PM			**158.4 s/v**	**F**
12. May Avenue at Pacific Coast Highway	AM	Long Beach/ Caltrans	One-Way Stop	**65.9 s/v**	**F**
	PM			27.8 s/v	D

Notes:

- s/v = seconds per vehicle
- **Bold ICU/LOS** or **HCM/LOS** values indicate adverse service levels

4.0 TRAFFIC FORECASTING METHODOLOGY

In order to estimate the traffic impact characteristics of the proposed Project, a multi-step process has been utilized. The first step is traffic generation, which estimates the total arriving and departing traffic on a peak hour and daily basis. The traffic generation potential is forecast by applying the appropriate vehicle trip generation equations or rates to the project development tabulation.

The second step of the forecasting process is traffic distribution, which identifies the origins and destinations of inbound and outbound project traffic. These origins and destinations are typically based on demographics and existing/expected future travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersection turning movements throughout the study area.

With the forecasting process complete and project traffic assignments developed, the impact of the proposed project is isolated by comparing operational (LOS) conditions at selected key intersections using expected future traffic volumes with and without forecast project traffic. The need for site-specific and/or cumulative local area traffic improvements can then be evaluated and the significance of the project's impacts identified.

5.0 PROJECT TRAFFIC CHARACTERISTICS

5.1 Project Traffic Generation

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Generation equations and/or rates used in the traffic forecasting procedure are typically found in the 10th Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE) [Washington D.C., 2017].

Table 5-1 summarizes the trip generation rates used in forecasting the vehicular trips generated by the proposed Project (i.e. student growth, net increase of 3,279 students) and presents the proposed Project's forecast peak hour and daily traffic volumes. As shown, the trip generation potential of the Project was estimated using ITE Land Use 540: Junior/Community College trip rates. Review of *Table 5-1* shows that the proposed Project (i.e. net increase of 3,279 students) is forecast to generate 3,771 daily trips, with 361 trips (292 inbound, 69 outbound) forecast during the AM peak hour and 361 trips (202 inbound and 159 outbound) forecast during the PM peak hour on a typical weekday.

5.2 Project Traffic Distribution and Assignment

Figure 5-1 presents the traffic distribution pattern for the proposed Project. Project traffic volumes both entering and exiting the project site have been distributed and assigned to the adjacent street system based on the following considerations:

- the site's proximity to major traffic carriers (i.e. Pacific Coast Highway, etc.),
- expected localized traffic flow patterns based on adjacent street channelization and presence of traffic signals,
- location of additional parking spaces (i.e. new parking structure at the northwest corner of the intersection of Walnut Avenue/Pacific Coast Highway), and
- ingress/egress availability at the project site.

The anticipated AM and PM peak hour project traffic volumes associated with the Project are presented in ***Figures 5-2*** and ***5-3***, respectively. The traffic volume assignments presented in *Figures 5-2* and *5-3* reflect the traffic distribution characteristics shown in *Figure 5-1* and the traffic generation forecast presented in *Table 5-1*.

5.3 Existing Plus Project Traffic Conditions

The existing plus project traffic conditions have been generated based upon existing conditions and the estimated project traffic. These forecast traffic conditions have been prepared pursuant to the California Environmental Quality Act (CEQA) guidelines, which require that the potential impacts of a Project be evaluated upon the circulation system as it currently exists. This traffic volume scenario and the related intersection capacity analyses will identify the roadway improvements necessary to mitigate the direct traffic impacts of the Project, if any.

Figures 5-4 and ***5-5*** present projected AM and PM peak hour traffic volumes at the twelve (12) key study locations with the addition of the trips generated by the proposed Project to existing traffic volumes, respectively.

TABLE 5-1

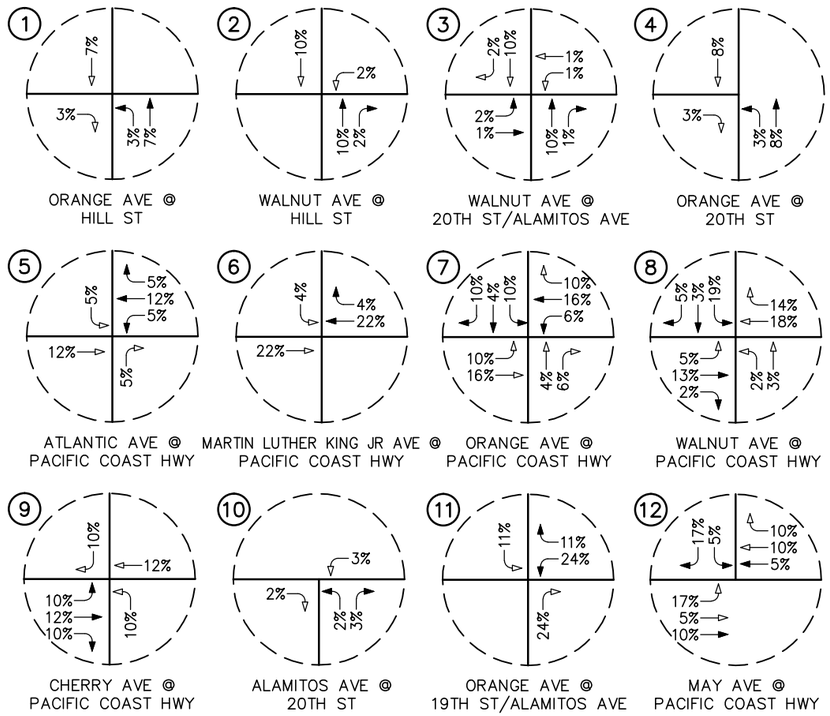
PROJECT TRAFFIC GENERATION FORECAST[3]

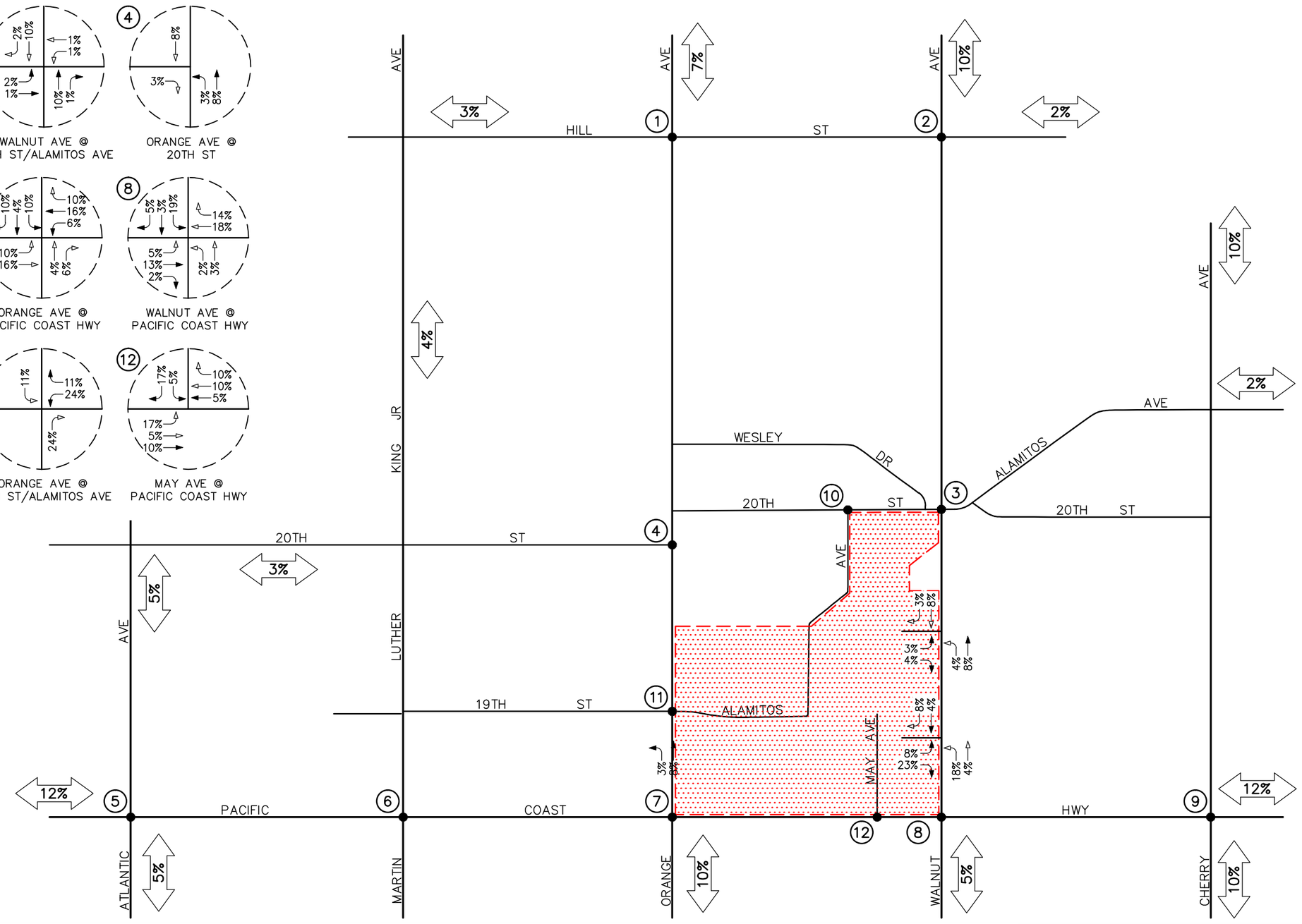
ITE Land Use Code / Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Generation Factors:							
▪ 540: Junior/Community College (TE/Student)	1.15	81%	19%	0.11	56%	44%	0.11
Generation Forecasts:							
▪ LBCCD – Pacific Coast Campus (Net Increase 3,279 Students)	3,771	292	69	361	202	159	361

Notes:

- TE/Student = Trip ends per student

[3] Source*: Trip Generation, 10th Edition*, Institute of Transportation Engineers, (ITE) [Washington, D.C. (2017)].





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N NO SCALE

KEY

= INBOUND PERCENTAGE

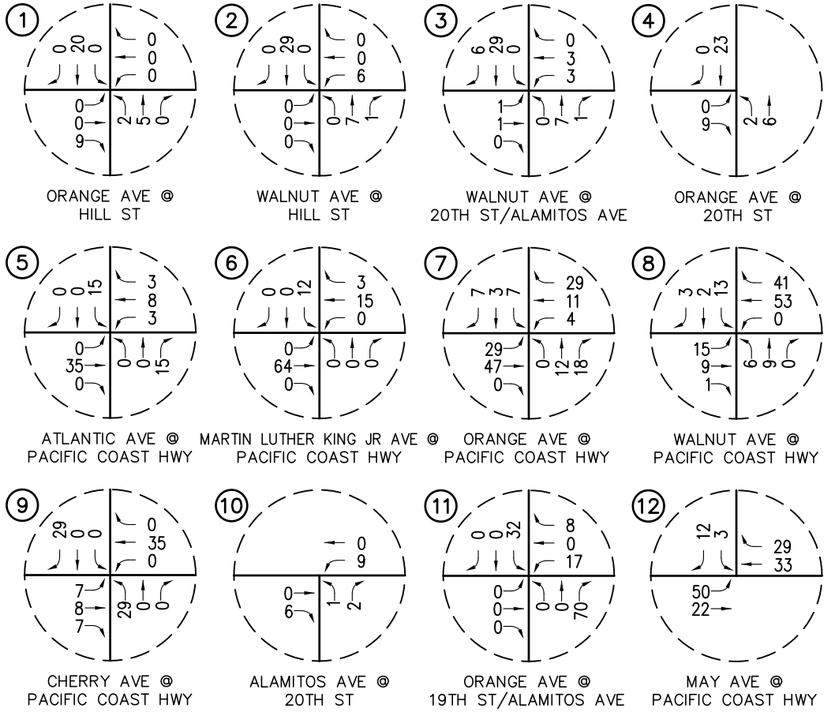
= OUTBOUND PERCENTAGE

= PROJECT SITE

FIGURE 5-1

PROJECT TRAFFIC DISTRIBUTION PATTERN

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH



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N NO SCALE

KEY

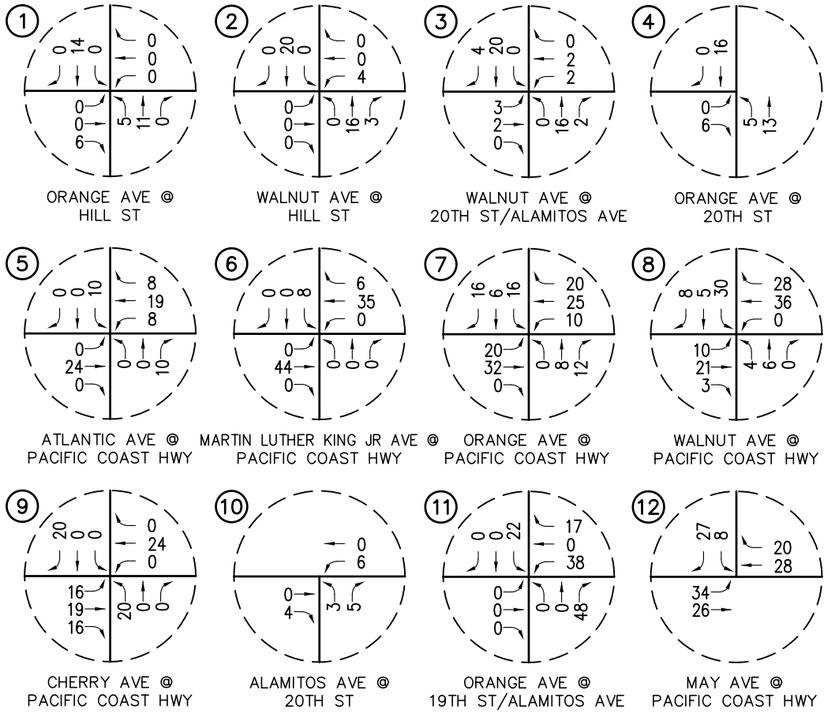
(#) = STUDY INTERSECTION

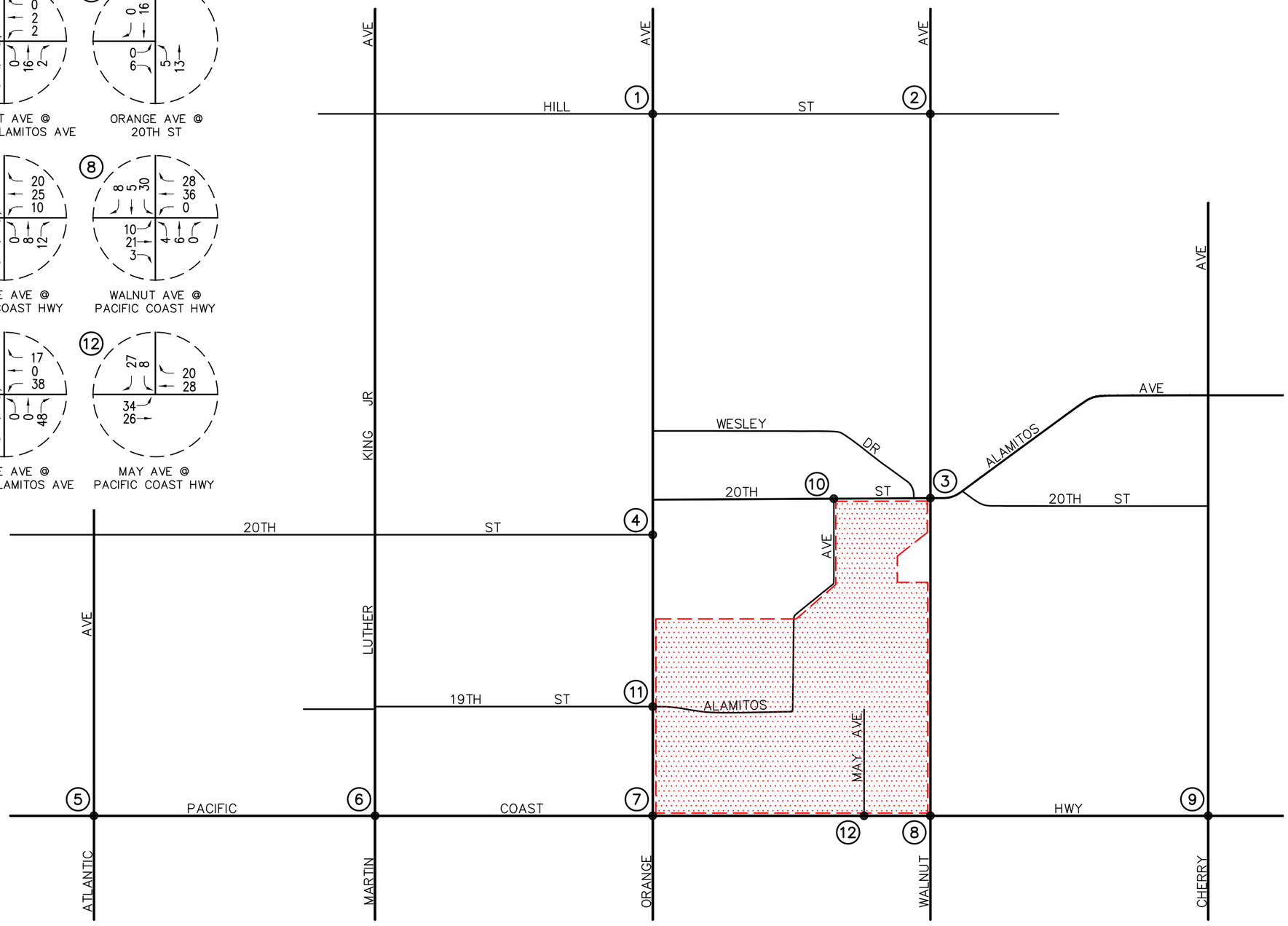
= PROJECT SITE

FIGURE 5–2

AM PEAK HOUR PROJECT TRAFFIC VOLUMES

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH





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KEY

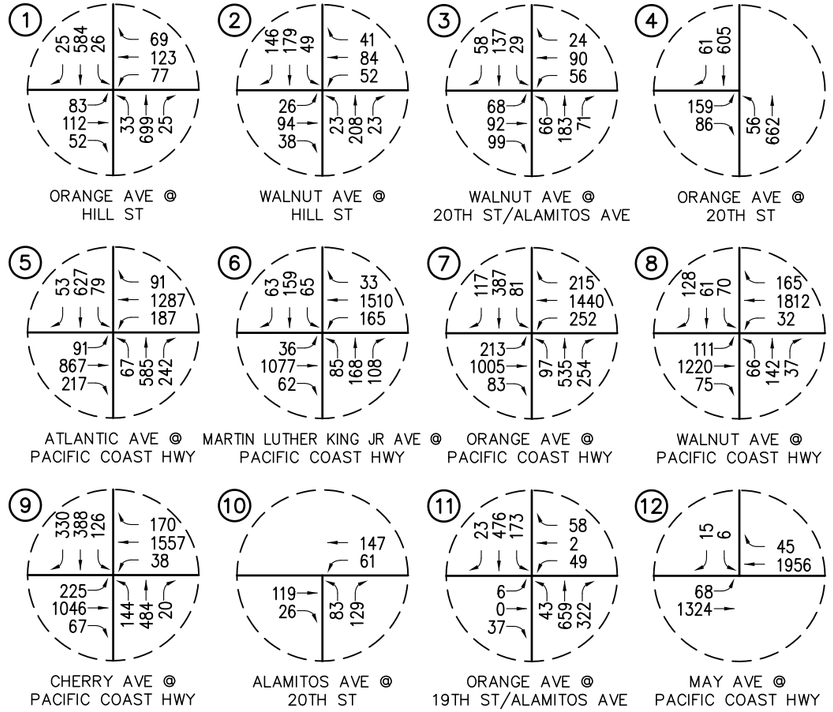
(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 5-3

PM PEAK HOUR PROJECT TRAFFIC VOLUMES

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH



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KEY

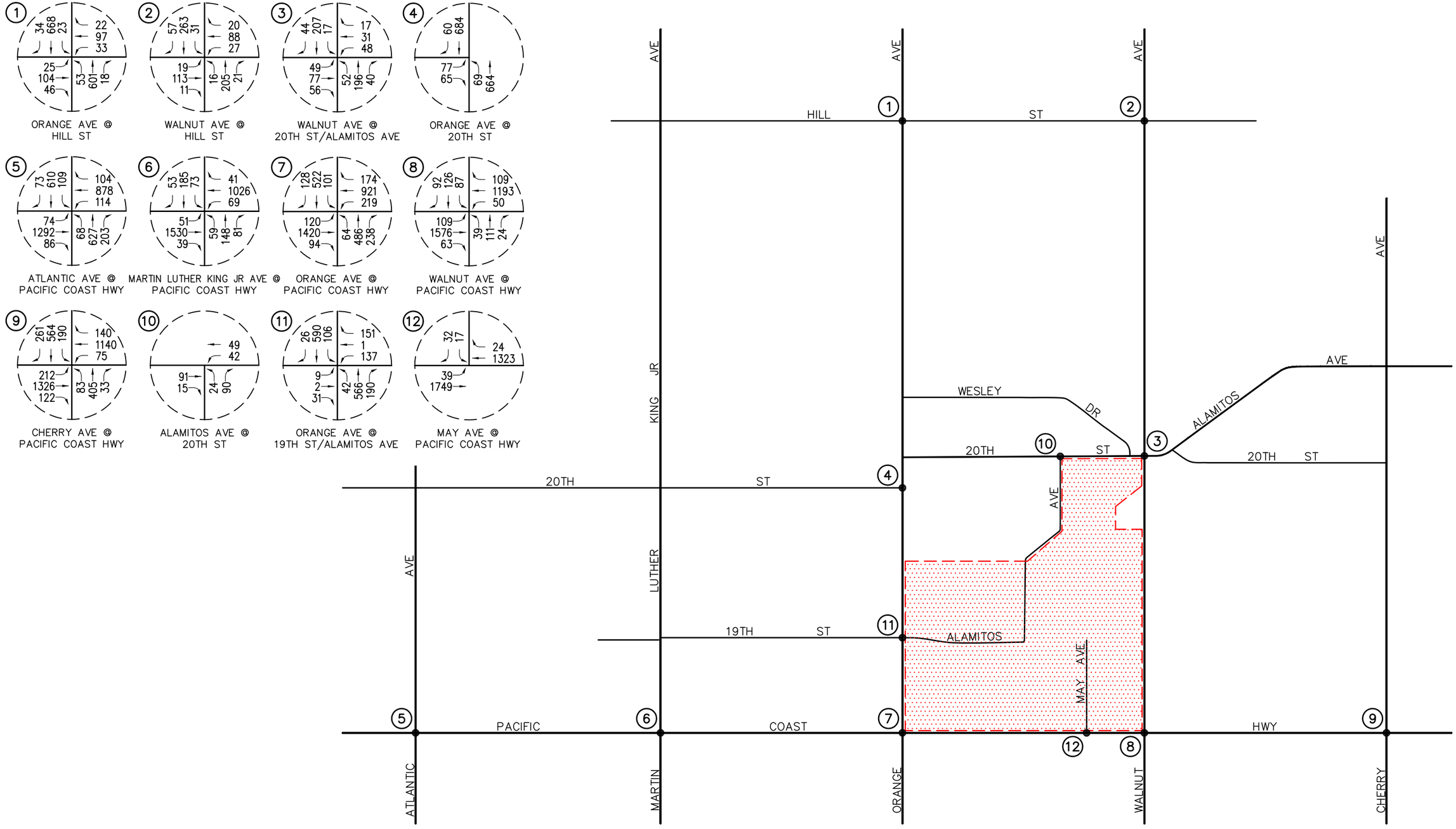
(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 5-4

EXISTING PLUS PROJECT AM PEAK HOUR TRAFFIC VOLUMES

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH



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N NO SCALE

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 5-5

EXISTING PLUS PROJECT PM PEAK HOUR TRAFFIC VOLUMES

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH

6.0 FUTURE TRAFFIC CONDITIONS

6.1 Ambient Traffic Growth

Horizon year, background traffic growth estimates have been calculated using an ambient traffic growth factor. The ambient traffic growth factor is intended to include unknown and future cumulative projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area. The future growth in traffic volumes has been calculated at 0.708 percent per year. Applied to the Year 2017 existing traffic volumes, this factor results in a 16.992 percent growth in existing volumes to the planning horizon Year 2041.

Please note that the recommended ambient growth factor is consistent with the background traffic growth estimates contained in the most current *Congestion Management Program for Los Angeles County*.[4]

6.2 Cumulative Projects Traffic Characteristics

In order to make a realistic estimate of future on-street conditions prior to implementation of the proposed Project, the status of other known development projects (cumulative projects) has been researched at the Cities of Long Beach and Signal Hill. With this information, the potential impact of the proposed Project can be evaluated within the context of the cumulative impact of all ongoing development. Based on our research, there are thirty (30) cumulative projects located in the City of Long Beach and seven (7) cumulative projects located in the City of Signal Hill that have either been built, but not yet fully occupied, or are being processed for approval. These thirty-seven (37) cumulative projects have been included as part of the cumulative background setting.

Table 6-1 provides the location and a brief description for each of the thirty-seven (37) cumulative projects. ***Figure 6-1*** graphically illustrates the location of the cumulative projects. These cumulative projects are expected to generate vehicular traffic, which may affect the operating conditions of the key study intersections.

Table 6-2 presents the resultant trip generation for the thirty-seven (37) cumulative projects. As shown in *Table 6-2*, the thirty-seven (37) cumulative projects are forecast to generate a combined total of 37,871 daily trips, with 4,764 trips (1,812 inbound and 2,952 outbound) forecast during the AM peak hour and 5,116 trips (2,790 inbound and 2,326 outbound) forecast during the PM peak hour.

The AM and PM peak hour traffic volumes associated with the thirty-seven (37) cumulative projects in the Year 2041 are presented in ***Figures 6-2*** and ***6-3***, respectively.

[4] Source*: Congestion Management Program for Los Angeles County;* Appendix D – Guidelines for CMP Transportation Impact Analysis; Exhibit D-1; General Traffic Volume Growth Factors.

6.3 Year 2041 Cumulative Traffic Volumes

Figures 6-4 and ***6-5*** present the Year 2041 AM and PM peak hour cumulative traffic volumes at the key study intersections, respectively. Please note that the cumulative traffic volumes represent the accumulation of existing traffic, ambient growth traffic and cumulative projects traffic.

Figures 6-6 and ***6-7*** illustrate the Year 2041 forecast AM and PM peak hour traffic volumes, with the inclusion of the trips generated by the proposed Project, respectively.

TABLE 6-1
LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS[5]

No.	Cumulative Project	Location/Address	Description
City of Long Beach			
1.	Alamitos Concession Rebuild Project	Located at the western end of Alamitos Beach, adjacent to the waterfront area near the City's downtown	Demolish the existing 2,234 SF concession building and constructing a 4,315 SF concession building with 430 SF recreational equipment rental
2.	3311 East Willow Street	3311 East Willow Street	Adult daycare facility with 7 direct service employees, 3 administration employees, and 5 shuttle vans
3.	Shoreline Gateway East Tower	777 East Ocean Boulevard	315 DU apartments and 6,711 SF retail
4.	New Long Beach Civic Center	Located north of Ocean Boulevard and south of Broadway, in between Magnolia Avenue and Pacific Avenue in downtown Long Beach	3rd & Pacific – 163 condominiums; Civic Center – 270,000 SF City Hall and 240,000 SF Port Administration; Lincoln Park – 92,000 SF Library and 3.17 Acres City Park; Center Block – 580 apartment homes, 200-room hotel, 32,000 SF of retail and 8,000 SF of restaurant uses. Existing 138,000 SF Main Library, 283,000 SF City Hall and 2.60 acre City Park to be replaced.
5.	Drake Park Soccer Field	Bound by Loma Vista Drive and single-family residential uses to the southeast and east, a ceramic factory and industrial uses to the south, De Forest Avenue and the Los Angeles River to the west, and existing industrial and commercial uses to the north	8.75 acre new park facility which includes one soccer field, open space/passive park areas, pedestrian walking trails, restroom facilities, and parking.
6.	Long Beach Sports Park	South of Spring Street, bounded by California Avenue on the west, Orange Avenue on the east, and Long Beach Municipal and Sunnyside Cemeteries on the south	55 acre sports park
7.	4201 E. Willow St	4201 East Willow Street	Demolishing an existing 17,231 SF car sales and constructing 9,121 SF retail and a 4,296 SF automated carwash
8.	Ocean Boulevard Project	1628-1724 Ocean Boulevard	51 DU condominiums

Notes:
- SF = Square-feet
- DU = Dwelling units

[5] Source: City of Long Beach and City of Signal Hill Planning Departments.

TABLE 6-1 (CONTINUED)
LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS[6]

No.	Cumulative Project	Location/Address	Description
City of Long Beach (Continued)			
9.	LBCIC Owned Properties	South of 14th Street, between Pacific Avenue and Pine Avenue	11 DU residential
10.	Adaptive Reuse Residential Project	936 Pine Avenue	4 DU apartments
11.	507 Pacific Avenue	507 Pacific Avenue	5-story residential development with 158 DU condominiums and 9,400 SF commercial church and retail space
12.	Adaptive Reuse Residential Beeks Building	944 Pacific Avenue	9 DU apartments
13.	1112 Locust Avenue	1112 Locust Avenue	7-story residential development with 97 DU
14.	425 E. 5th Street	425 E. 5th Street	5-story residential development with 15 DU
15.	1101 Long Beach Boulevard	1101 Long Beach Boulevard	8-story mixed-use development with 119 DU and 6,000 SF commercial space
16.	635 Pine Avenue/ 636 Pacific Avenue	635 Pine Avenue/ 636 Pacific Avenue	Two 8-story residential buildings totaling 270 DU
17.	Silversands	2010 East Ocean Boulevard	40 room hotel and 56 DU condominiums
18.	Broadway Block	Northwest corner of Broadway and Long Beach Boulevard	7-story residential development with 392 DU and 32,000 SF commercial
19.	320 Alamitos Avenue	320 Alamitos Avenue	77 DU residential units
20.	Residences at Linden Mixed-Use Project	135 Linden Avenue	43 DU, five-story, apartment building with 2,038 SF retail at street level
21.	Broadway/Promenade Site	127-135 E. Broadway	172 DU residential units with 10,000 SF ground floor retail
22.	125 Broadway	125 Broadway	7-story residential development with 208 DU
23.	2528 N. Lakewood Boulevard	2528 N. Lakewood Boulevard	6,516 SF fast-food restaurant with drive-thru
24.	Pacific Edge Industrial	2300 Redondo Avenue	410,500 SF industrial
25.	1955 and 1965 Long Beach Boulevard	1955 and 1965 Long Beach Boulevard	28,370 SF medical office building
26.	540-558 E. Willow Street	540-558 E. Willow Street	3-story residential development with 22 DU
27.	101 Pacific Coast Highway	101 Pacific Coast Highway	26 DU residential units over 5,000 SF commercial space

Notes:
- SF = Square-feet
- DU = Dwelling units

[6] Source: City of Long Beach and City of Signal Hill Planning Departments.

TABLE 6-1 (CONTINUED)
LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS[7]

No.	Cumulative Project	Location/Address	Description
City of Long Beach (Continued)			
28.	622-628 E. Anaheim Street	622-628 East Anaheim Street	Modification to an existing commercial building to create three separate tenant units on the ground floor, with two of the units dedicated to restaurant use, and changing the second floor from a hotel to a bar/smoking lounge
29.	Salvation Army	3012 Long Beach Boulevard	16,950 SF gym
30.	Commercial Parking Lot and Passive Park	2600 California Avenue	14,000 SF passive park
City of Signal Hill			
31.	Crescent Square	NEC of Walnut and Crescent Heights Street	25 DU single-family residential
32.	Zinna	1500 E. Hill Street	75 DU multi-family residences, three to four stories in height
33.	The Courtyard	19369 Temple Avenue	10 DU condominiums
34.	2599 Pacific Coast Highway	2599 Pacific Coast Highway	9 DU single family residential
35.	2351 Walnut Avenue	2351 Walnut Avenue	7,974 SF office building
36.	2020 Walnut Avenue	2020 Walnut Avenue	110,300 industrial park
37.	Honda Expansion	1500 E. Spring Street	802 SF showroom addition, 262 SF office addition, and 1,300 SF service department write-up area

Notes:
- SF = Square-feet
- DU = Dwelling units

[7] Source: City of Long Beach and City of Signal Hill Planning Departments.

TABLE 6-2
CUMULATIVE PROJECTS TRAFFIC GENERATION FORECAST[8]

Cumulative Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
1. Alamitos Concession Rebuild Project	656	3	1	4	16	13	29
2. 3311 East Willow Street[9]	60	10	5	15	0	10	10
3. Shoreline Gateway East Tower[10]	3,105	48	133	181	165	113	278
4. New Long Beach Civic Center[11]	10,923	377	294	671	247	305	552
5. Drake Park Soccer Field	7	0	0	0	1	0	1
6. Long Beach Sports Park	43	1	0	1	3	3	6
7. 4201 E. Willow Street[12]	1,388	38	31	69	79	79	158
8. Ocean Boulevard Project	277	5	13	18	13	9	22
9. LBCIC Owned Properties	81	1	4	5	4	2	6
10. Adaptive Reuse Residential Project	29	0	2	2	1	1	2
11. 507 Pacific Avenue	1,215	21	45	66	60	46	106
12. Adaptive Reuse Residential Beeks Building	66	1	3	4	3	2	5
13. 1112 Locust Avenue	528	9	26	35	26	17	43
14. 425 E. 5th Street	97	5	15	20	13	9	22
15. 1101 Long Beach Boulevard	874	15	34	49	43	32	75
16. 635 Pine Avenue/ 636 Pacific Avenue	2,009	166	471	637	402	257	659
17. Silversands	695	31	64	95	61	44	105
18. Broadway Block	4,516	361	986	1,347	881	589	1,470
19. 320 Alamitos Avenue	419	7	21	28	21	13	34
20. Residences at Linden Mixed-Use Project	69	1	1	2	3	2	5
21. Broadway/Promenade Site	592	15	37	52	43	19	62
22. 125 Broadway	1,756	182	517	699	437	279	716
23. 2528 N. Lakewood Boulevard	2,302	68	66	134	55	51	106
24. Pacific Edge Industrial	2,036	253	34	287	34	225	259
25. 1955 and 1965 Long Beach Boulevard	987	62	17	79	27	71	98
26. 540-558 E. Willow Street	142	8	22	30	20	12	32
27. 101 Pacific Coast Highway	89	2	6	8	6	3	9

8 Unless otherwise noted, Source: *Trip Generation*, 10th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2017).

9 Source: *Focused Traffic Analysis for the 3311 E. Willow Adult Day Care Facility*, prepared by LLG, dated December 2016.

10 Source: *Shoreline Gateway East Tower TIA*, prepared by LLG, dated October 2016.

11 Source: *New Long Beach Civic Center Project TIA*, prepared by LLG, dated July 2015.

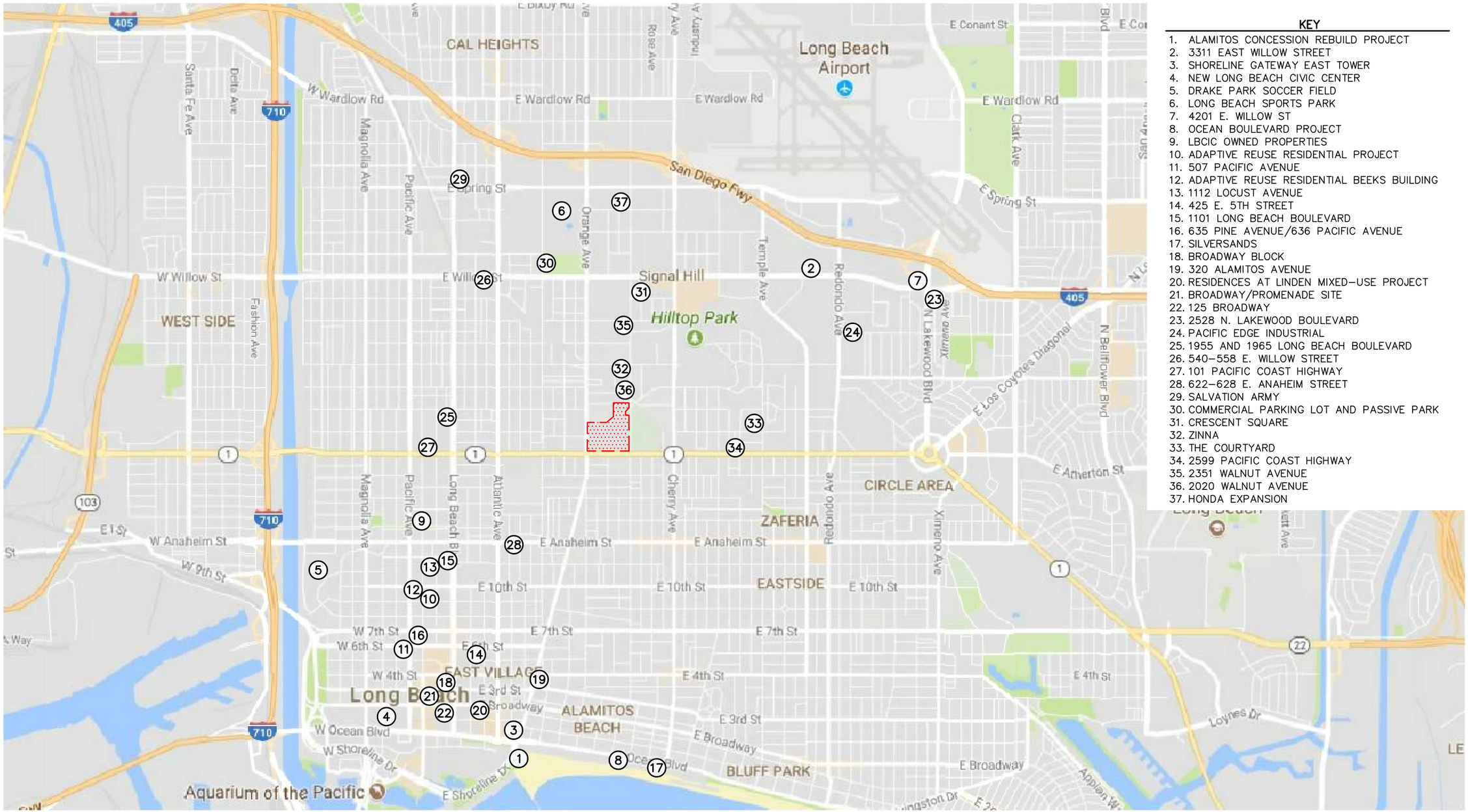
12 Source: *Long Beach Car Wash/Retail Traffic Analysis*, prepared by LSA Associates, dated September 2010.

TABLE 6-2 (CONTINUED)
CUMULATIVE PROJECTS TRAFFIC GENERATION FORECAST[13]

Cumulative Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
28. 622-628 E. Anaheim Street	1,010	49	40	89	35	21	56
29. Salvation Army	580	11	11	22	33	25	58
30. Commercial Parking Lot/Passive Park[14]	2	0	0	0	0	0	0
31. Crescent Square	236	5	14	19	16	9	25
32. Zinna	408	7	20	27	20	13	33
33. The Courtyard	73	1	4	5	4	2	6
34. 2599 Pacific Coast Highway	85	2	5	7	6	3	9
35. 2351 Walnut Avenue	78	8	1	9	1	8	9
36. 2020 Walnut Avenue	372	36	8	44	9	35	44
37. Honda Expansion	66	3	1	4	2	4	6
Cumulative Projects Trip Generation Forecast	**37,871**	**1,812**	**2,952**	**4,764**	**2,790**	**2,326**	**5,116**

[13] Unless otherwise noted, Source: *Trip Generation*, 10th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2017).

[14] Source: *(Not So) Brief Guide of Vehicle Traffic Generation Rates for the San Diego Area*, published by SANDAG (April 2002).



KEY

1. ALAMITOS CONCESSION REBUILD PROJECT
2. 3311 EAST WILLOW STREET
3. SHORELINE GATEWAY EAST TOWER
4. NEW LONG BEACH CIVIC CENTER
5. DRAKE PARK SOCCER FIELD
6. LONG BEACH SPORTS PARK
7. 4201 E. WILLOW ST
8. OCEAN BOULEVARD PROJECT
9. LBCIC OWNED PROPERTIES
10. ADAPTIVE REUSE RESIDENTIAL PROJECT
11. 507 PACIFIC AVENUE
12. ADAPTIVE REUSE RESIDENTIAL BEEKS BUILDING
13. 1112 LOCUST AVENUE
14. 425 E. 5TH STREET
15. 1101 LONG BEACH BOULEVARD
16. 635 PINE AVENUE/636 PACIFIC AVENUE
17. SILVERSANDS
18. BROADWAY BLOCK
19. 320 ALAMITOS AVENUE
20. RESIDENCES AT LINDEN MIXED-USE PROJECT
21. BROADWAY/PROMENADE SITE
22. 125 BROADWAY
23. 2528 N. LAKEWOOD BOULEVARD
24. PACIFIC EDGE INDUSTRIAL
25. 1955 AND 1965 LONG BEACH BOULEVARD
26. 540-558 E. WILLOW STREET
27. 101 PACIFIC COAST HIGHWAY
28. 622-628 E. ANAHEIM STREET
29. SALVATION ARMY
30. COMMERCIAL PARKING LOT AND PASSIVE PARK
31. CRESCENT SQUARE
32. ZINNA
33. THE COURTYARD
34. 2599 PACIFIC COAST HIGHWAY
35. 2351 WALNUT AVENUE
36. 2020 WALNUT AVENUE
37. HONDA EXPANSION

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N NO SCALE

KEY

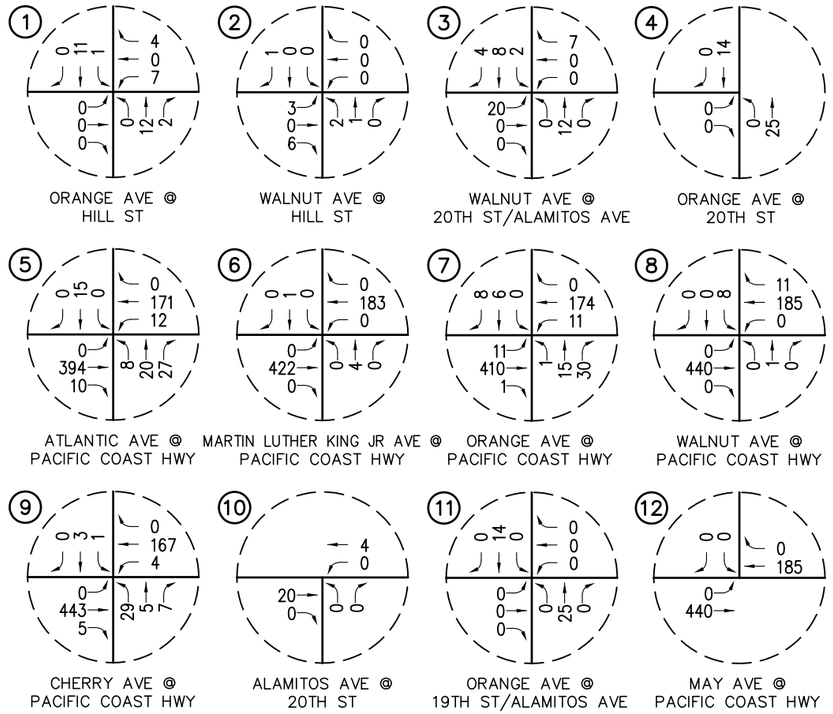
(#) = CUMULATIVE PROJECT LOCATION

= PROJECT SITE

FIGURE 6-1

LOCATION OF CUMULATIVE PROJECTS

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH



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N NO SCALE

KEY

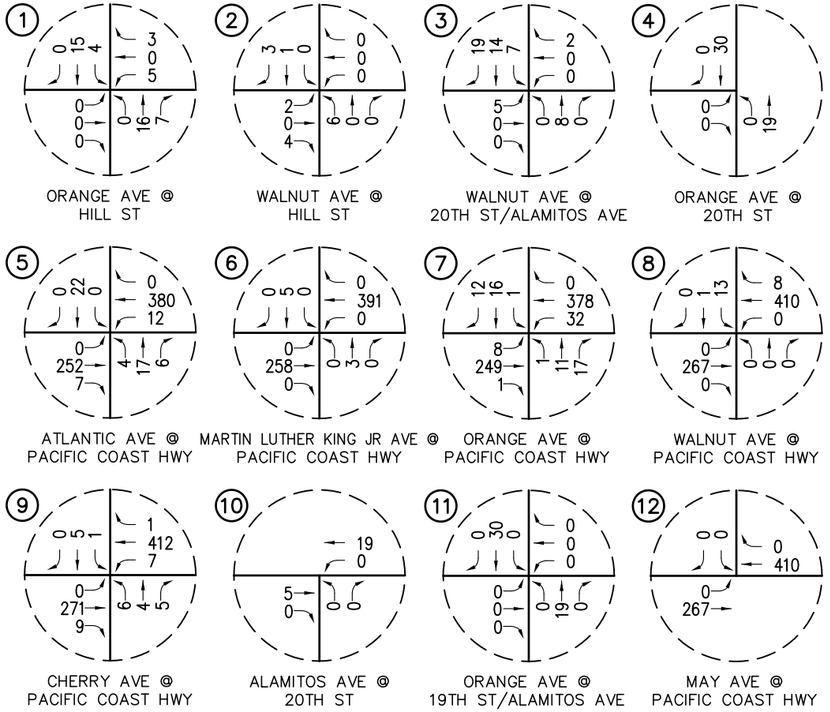
(#) = STUDY INTERSECTION

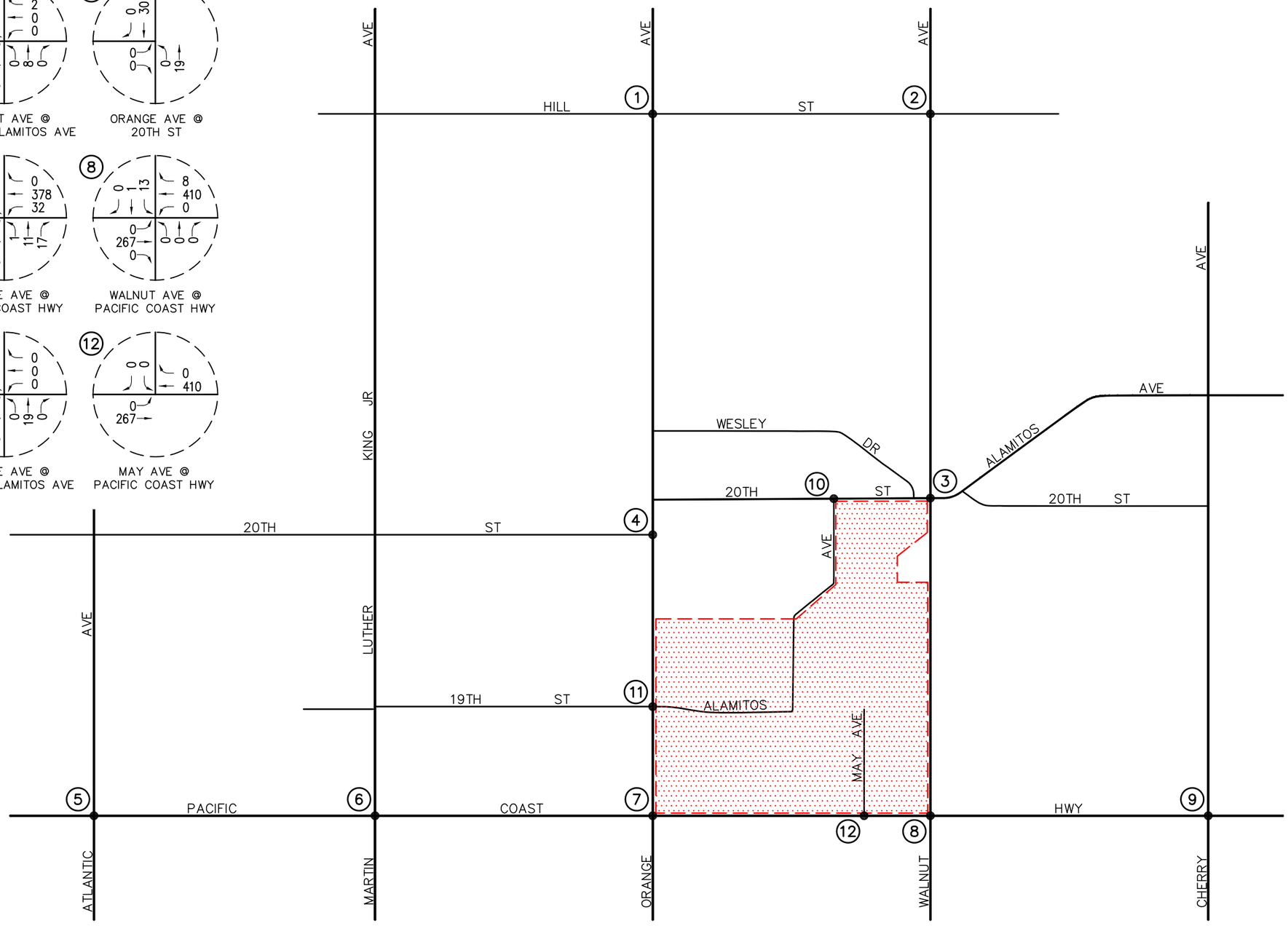
= PROJECT SITE

FIGURE 6-2

AM PEAK HOUR CUMULATIVE PROJECT TRAFFIC VOLUMES

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH





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N NO SCALE

KEY

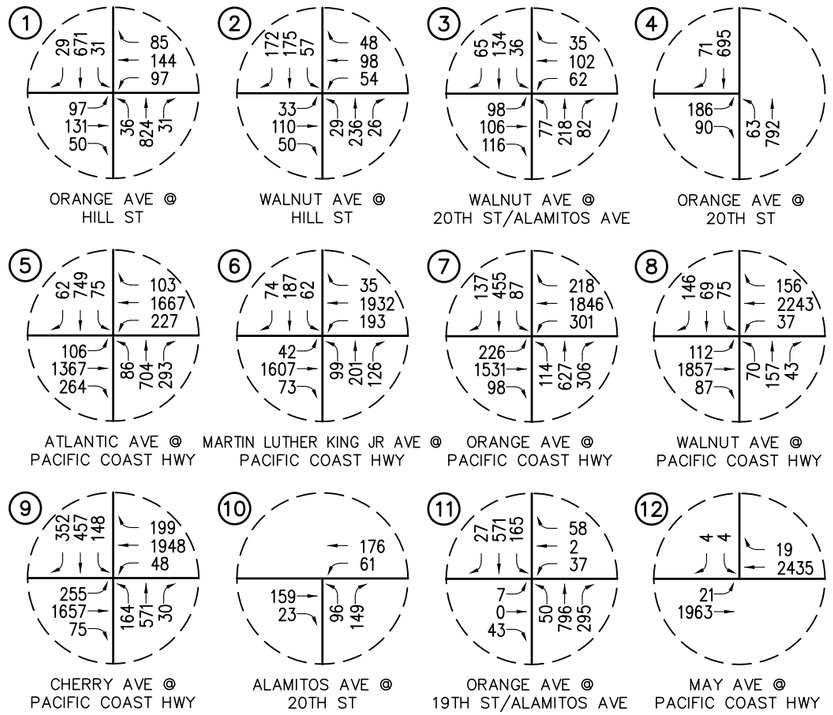
(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 6-3

PM PEAK HOUR CUMULATIVE PROJECT TRAFFIC VOLUMES

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH



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N NO SCALE

KEY

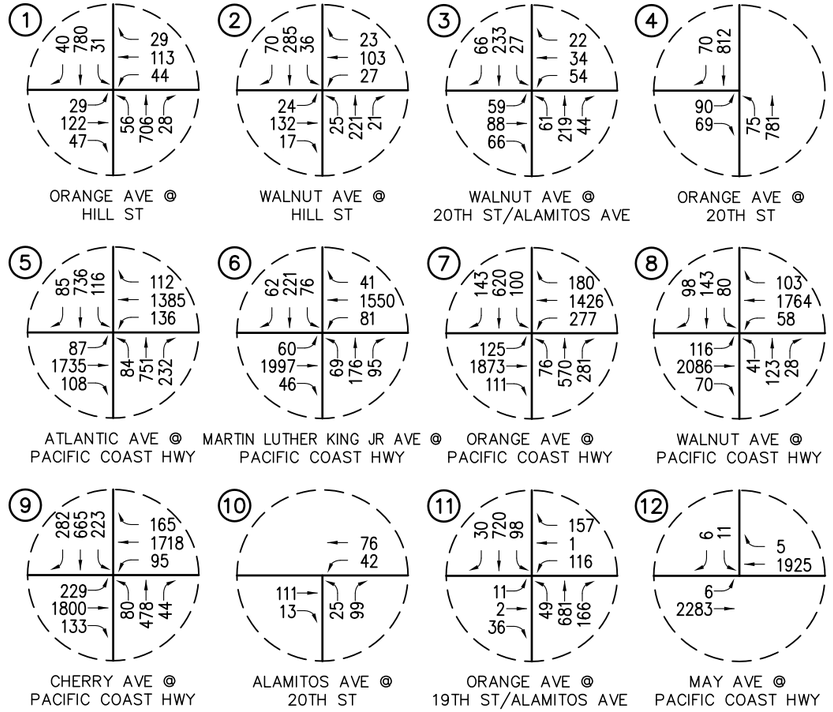
(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 6-4

YEAR 2041 BUILDOUT AM PEAK HOUR TRAFFIC VOLUMES

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH



LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

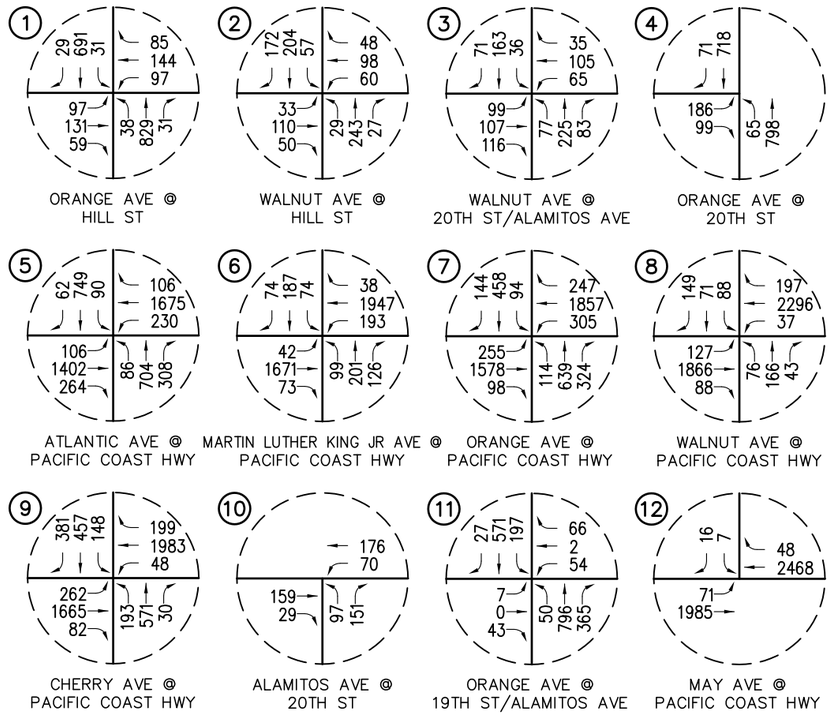
(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 6-5

YEAR 2041 BUILDOUT PM PEAK HOUR TRAFFIC VOLUMES

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

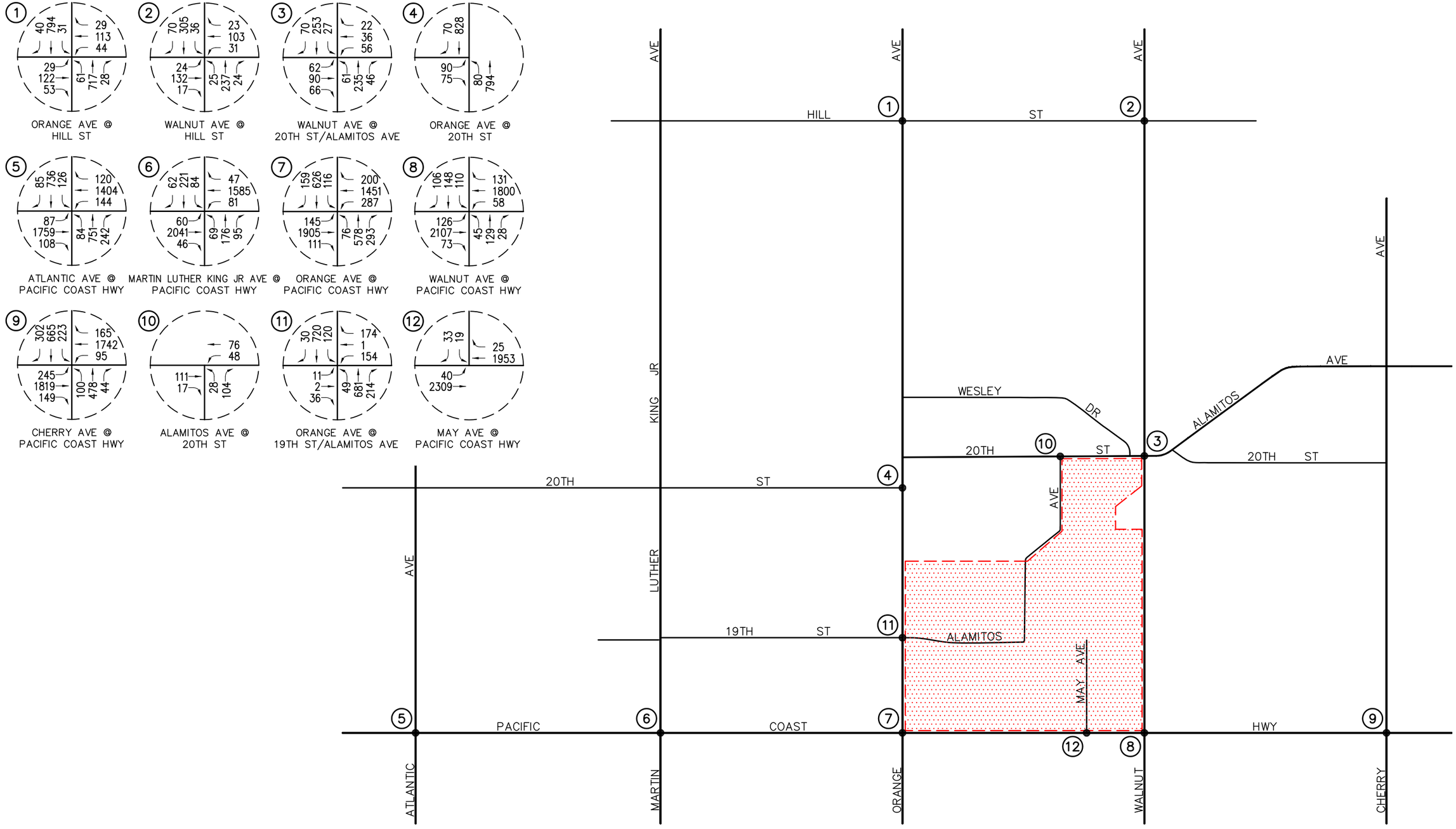
(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 6-6

YEAR 2041 BUILDOUT PLUS PROJECT AM PEAK HOUR TRAFFIC VOLUMES

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 6-7

YEAR 2041 BUILDOUT PLUS PROJECT PM PEAK HOUR TRAFFIC VOLUMES

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH

7.0 TRAFFIC IMPACT ANALYSIS METHODOLOGY

The relative impacts of the proposed Project during the AM peak hour and PM peak hour were evaluated based on analysis of future operating conditions at the twelve (12) key study intersections, without, then with, the proposed Project. The previously discussed capacity analysis procedures were utilized to investigate the future volume-to-capacity relationships and service level characteristics at each study intersection. The significance of the potential impacts of the Project at each key intersection was then evaluated using the following traffic impact criteria.

7.1 Impact Criteria and Thresholds

7.1.1 *City of Long Beach*

Impacts to City of Long Beach intersections (i.e. all twelve key study intersections except #1 and #2) are considered significant if:

- An unacceptable peak hour Level of Service (LOS) (i.e. LOS E or F) at any of the key intersections is projected. The City of Long Beach considers LOS D (ICU = 0.801 - 0.900) to be the minimum acceptable LOS for all intersections. For the City of Long Beach, the current LOS, if worse than LOS D (i.e. LOS E or F), should also be maintained; and

- The project increases traffic demand at the study intersection by 2% of capacity (ICU increase ≥ 0.020), causing or worsening LOS E or F (ICU > 0.901).

- At unsignalized intersections, an impact is considered to be significant if the project causes an intersection operating at LOS D or better to degrade to LOS E or F, and the traffic signal warrant analysis determines that a traffic signal is justified.

7.1.2 *City of Signal Hill*

Impacts to City of Signal Hill intersections (i.e. key study intersections #1 and #2) are considered significant if:

- An unacceptable peak hour Level of Service (LOS) (i.e. LOS E or F) at any of the key intersections is projected. The City of Signal Hill considers LOS D (ICU = 0.801 - 0.900) to be the minimum acceptable LOS for all intersections.

7.2 Traffic Impact Analysis Scenarios

The following scenarios are those for which volume/capacity calculations have been performed at the twelve (12) key study intersections for existing plus project and Year 2041 traffic conditions:

A. Existing Traffic Conditions;
B. Existing Plus Project Traffic Conditions;
C. Scenario (B) with Improvements, if necessary;
D. Year 2041 Cumulative Traffic Conditions,
E. Year 2041 Cumulative Plus Project Traffic Conditions; and
F. Scenario (E) with Improvements, if necessary.

8.0 PEAK HOUR INTERSECTION CAPACITY ANALYSIS

8.1 Existing Plus Project Analysis

Table 8-1 summarizes the peak hour Level of Service results at the twelve (12) key study intersections for existing plus project traffic conditions. The first column (1) of ICU/LOS values and HCM/LOS values in *Table 8-1* presents a summary of existing AM and PM peak hour traffic conditions (which were also presented in *Table 3-4*). The second column (2) lists existing plus project traffic conditions. The third column (3) shows the increase in ICU value and/or HCM value due to the added peak hour Project trips and indicates whether the traffic associated with the Project will have a significant impact based on the LOS standards and significant impact criteria defined in this report. The fourth column (4) indicates the anticipated level of service with recommended improvements, discussed later in this report.

8.1.1 *Existing Plus Project Traffic Conditions*

Review of Columns 2 and 3 of *Table 8-1* indicates that traffic associated with the proposed Project, when added to only existing traffic volumes, will significantly impact one (1) of the twelve (12) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. Although the intersection of May Avenue/Pacific Coast Highway is forecast to operate at unacceptable LOS F during the AM peak hour, this unsignalized intersection is not impacted per the significant impact criteria specified in this report; signalization of the intersection could provide a means for reducing the indicated delay, but the peak hour traffic signal warrant is not satisfied. The remaining ten (10) key study intersections currently operate and are forecast to continue to operate at an acceptable service level during the AM and PM peak hours with the addition of Project generated traffic to existing traffic. The intersection operating at an adverse level of service under existing plus project traffic conditions is as follows:

	AM Peak Hour		PM Peak Hour	
Key Intersection	ICU/HCM	LOS	ICU/HCM	LOS
11. Orange Avenue at 19th Street/Alamitos Avenue	359.1 s/v	F	356.4 s/v	F

As shown in column 4, the implementation of improvements (discussed later in this report) at this one (1) impacted key study intersection completely offsets the impact of project traffic and the intersection is forecast to operate at an acceptable LOS during the AM and PM peak hours.

Appendix B presents the existing plus project ICU/LOS and HCM/LOS calculations for the twelve (12) key study intersections. *Appendix B* also presents the existing plus project peak hour traffic signal warrants for key study intersections #11 and #12.

8.2 Year 2041 Traffic Conditions

Table 8-2 summarizes the peak hour Level of Service results at the twelve (12) key study intersections for the Year 2041 horizon year. The first column (1) of ICU/LOS and HCM/LOS values in *Table 8-2* presents a summary of existing AM and PM peak hour traffic conditions (which were also presented in *Table 3-4*). The second column (2) lists projected Year 2041 traffic conditions (existing plus ambient plus cumulative projects traffic) based on existing intersection geometry, but without any traffic generated from the proposed Project. The third column (3) presents forecast Year 2041 traffic conditions with the addition of Project traffic. The fourth column (4) shows the increase in ICU value and/or HCM value due to the added peak hour Project trips and indicates whether the traffic associated with the Project will have a significant impact based on the LOS standards and significant impact criteria defined in this report. The fifth column (5) indicates the anticipated level of service with recommended improvements, discussed later in this report.

8.2.1 *Year 2041 Buildout Traffic Conditions (Without Project Traffic)*

An analysis of future (Year 2041) cumulative traffic conditions indicates that the addition of ambient traffic growth and cumulative projects traffic will adversely impact four (4) of the twelve (12) key study intersections. The remaining eight (8) key study intersections are forecast to continue to operate at acceptable levels of service during the AM and PM peak hours with the addition of ambient traffic growth and cumulative projects traffic. The locations projected to operate at an adverse LOS in the Year 2041, even without any project traffic, are as follows:

	AM Peak Hour		PM Peak Hour	
Key Intersection	ICU/HCM	LOS	ICU/HCM	LOS
7. Orange Avenue at Pacific Coast Highway	0.922	E	0.928	E
9. Cherry Avenue at Pacific Coast Highway	0.987	E	0.938	E
11. Orange Avenue at 19th Street/Alamitos Avenue	221.5 s/v	F	492.8 s/v	F
12. May Avenue at Pacific Coast Highway	191.5 s/v	F	79.8 s/v	F

8.2.2 *Year 2041 Buildout Plus Project Conditions*

Review of Columns 3 and 4 of *Table 8-2* indicates that the added traffic associated with the proposed Project will significantly impact three (3) of the twelve (12) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. Although the intersection of Cherry Avenue/Pacific Coast Highway is forecast to operate at unacceptable LOS E during the AM and PM peak hours with the addition of project traffic, the proposed Project is expected to add less than 0.020 to the ICU value, which results in a less than significant impact. Further, although the intersection of May Avenue/Pacific Coast Highway is forecast to operate at unacceptable LOS F during the AM and PM peak hours, this unsignalized intersection is not impacted per the significant impact criteria specified in this report; signalization of the intersection could provide a means for reducing the indicated delay, but the peak hour traffic signal warrant is not satisfied. The remaining seven (7) key study intersections are forecast to continue to operate at an acceptable LOS with the addition of project generated traffic in the Year 2041. The three (3) locations significantly impacted by the proposed Project in the Year 2041 are as follows:

Key Intersection	AM Peak Hour ICU/HCM	AM Peak Hour LOS	PM Peak Hour ICU/HCM	PM Peak Hour LOS
7. Orange Avenue at Pacific Coast Highway	0.956	E	0.953	E
8. Walnut Avenue at Pacific Coast Highway	0.939	E	---	---
11. Orange Avenue at 19th Street/Alamitos Avenue	522.8 s/v	F	905.9 s/v	F

As shown in column 5, the implementation of improvements (discussed later in this report) at the impacted key study intersection of Orange Avenue/19th Street-Alamitos Avenue completely offsets the impact of project traffic and the key study intersection is forecast to operate at an acceptable LOS during the AM and PM peak hours. For the remaining two impacted key study intersections of Orange Avenue/Pacific Coast Highway and Walnut Avenue/Pacific Coast Highway, additional capacity-enhancing improvements at these two key study intersections do not appear feasible due to physical and right-of-way restrictions that prohibit any additional widening and/or restriping. Therefore, the impacts at these two locations will remain significant.

Appendix B also presents the Year 2041 plus project ICU/LOS and HCM/LOS calculations for the twelve (12) key study intersections. *Appendix B* also presents the Year 2041 plus project peak hour traffic signal warrants for key study intersections #11 and #12.

TABLE 8-1

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY

Key Intersection	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Significant Impact		(4) Existing Plus Project Traffic Conditions with Improvements	
		ICU/HCM	LOS	ICU/HCM	LOS	Increase	Yes/No	ICU/HCM	LOS
1. Orange Avenue at Hill Street	AM	27.6 s/v	C	27.8 s/v	C	0.2 s/v	No	--	--
	PM	11.5 s/v	B	11.6 s/v	B	0.1 s/v	No	--	--
2. Walnut Avenue at Hill Street	AM	13.1 s/v	B	14.1 s/v	B	1.0 s/v	No	--	--
	PM	11.4 s/v	B	12.0 s/v	B	0.6 s/v	No	--	--
3. Walnut Avenue at 20th Street/Alamitos Avenue	AM	0.566	A	0.574	A	0.008	No	--	--
	PM	0.514	A	0.533	A	0.019	No	--	--
4. Orange Avenue at 20th Street	AM	0.683	B	0.704	C	0.021	No	--	--
	PM	0.680	B	0.697	B	0.017	No	--	--
5. Atlantic Avenue at Pacific Coast Highway	AM	0.696	B	0.698	B	0.002	No	--	--
	PM	0.706	C	0.722	C	0.016	No	--	--
6. Martin Luther King Jr. Avenue at Pacific Coast Highway	AM	0.593	A	0.596	A	0.003	No	--	--
	PM	0.613	B	0.623	B	0.010	No	--	--
7. Orange Avenue at Pacific Coast Highway	AM	0.761	C	0.796	C	0.035	No	--	--
	PM	0.742	C	0.767	C	0.025	No	--	--

Notes:

- s/v = seconds per vehicle (delay)
- **Bold ICU/LOS and HCM/LOS values** indicate adverse service levels

TABLE 8-1 (CONTINUED)

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY

Key Intersection	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Significant Impact		(4) Existing Plus Project Traffic Conditions with Improvements	
		ICU/HCM	LOS	ICU/HCM	LOS	Increase	Yes/No	ICU/HCM	LOS
8. Walnut Avenue at	AM	0.740	C	0.784	C	0.044	No	--	--
Pacific Coast Highway	PM	0.653	B	0.688	B	0.035	No	--	--
9. Cherry Avenue at	AM	0.825	D	0.837	D	0.012	No	--	--
Pacific Coast Highway	PM	0.740	C	0.755	C	0.015	No	--	--
10. Alamitos Avenue at	AM	17.0 s/v	C	18.2 s/v	C	1.2 s/v	No	--	--
E. 20th Street	PM	9.7 s/v	A	9.8 s/v	A	0.1 s/v	No	--	--
11. Orange Avenue at	AM	**132.4 s/v**	**F**	**359.1 s/v**	**F**	226.7 s/v	No [a]	0.879	D
19th Street/Alamitos Avenue	PM	**158.4 s/v**	**F**	**356.4 s/v**	**F**	**198.0 s/v**	**Yes**	0.751	C
12. May Avenue at	AM	**65.9 s/v**	**F**	**187.7 s/v**	**F**	121.8 s/v	No [a]	--	--
Pacific Coast Highway	PM	27.8 s/v	D	30.7 s/v	D	2.9 s/v	No	--	--

Notes:

- s/v = seconds per vehicle (delay)
- **Bold ICU/LOS and HCM/LOS values** indicate adverse service levels
- [a] = The peak hour traffic signal warrant is not satisfied for this location, therefore there is no significant impact per the criteria mentioned in this report.

TABLE 8-2

YEAR 2041 PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY

Key Intersection	Time Period	(1) Existing Traffic Conditions		(2) Year 2041 Buildout Traffic Conditions		(3) Year 2041 Buildout Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2041 Buildout Plus Project Traffic Conditions with Improvements	
		ICU/HCM	LOS	ICU/HCM	LOS	ICU/HCM	LOS	Increase	Yes/No	ICU/HCM	LOS
1. Orange Avenue at Hill Street	AM	27.6 s/v	C	30.8 s/v	C	31.2 s/v	C	0.4 s/v	No	--	--
	PM	11.5 s/v	B	13.6 s/v	B	13.8 s/v	B	0.2 s/v	No	--	--
2. Walnut Avenue at Hill Street	AM	13.1 s/v	B	13.6 s/v	B	14.4 s/v	B	0.8 s/v	No	--	--
	PM	11.4 s/v	B	13.6 s/v	B	14.6 s/v	B	1.0 s/v	No	--	--
3. Walnut Avenue at 20th Street/Alamitos Avenue	AM	0.566	A	0.649	B	0.657	B	0.008	No	--	--
	PM	0.514	A	0.592	A	0.611	B	0.019	No	--	--
4. Orange Avenue at 20th Street	AM	0.683	B	0.791	C	0.812	D	0.021	No	--	--
	PM	0.680	B	0.798	C	0.814	D	0.016	No	--	--
5. Atlantic Avenue at Pacific Coast Highway	AM	0.696	B	0.889	D	0.898	D	0.009	No	--	--
	PM	0.706	C	0.878	D	0.892	D	0.014	No	--	--
6. Martin Luther King Jr. Avenue at Pacific Coast Highway	AM	0.593	A	0.749	C	0.763	C	0.014	No	--	--
	PM	0.613	B	0.758	C	0.767	C	0.009	No	--	--
7. Orange Avenue at Pacific Coast Highway	AM	0.761	C	**0.922**	**E**	**0.956**	**E**	**0.034**	**Yes**	N.F.	N.F.
	PM	0.742	C	**0.928**	**E**	**0.953**	**E**	**0.025**	**Yes**	N.F.	N.F.

Notes:

- s/v = seconds per vehicle (delay)
- **Bold ICU/LOS and HCM/LOS values** indicate adverse service levels
- N.F. = None Feasible

TABLE 8-2 (CONTINUED)

YEAR 2041 PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY

Key Intersection	Time Period	(1) Existing Traffic Conditions		(2) Year 2041 Buildout Traffic Conditions		(3) Year 2041 Buildout Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2041 Buildout Plus Project Traffic Conditions with Improvements	
		ICU/HCM	LOS	ICU/HCM	LOS	ICU/HCM	LOS	Increase	Yes/No	ICU/HCM	LOS
8. Walnut Avenue at Pacific Coast Highway	AM	0.740	C	0.895	D	**0.939**	**E**	**0.044**	**Yes**	N.F.	N.F.
	PM	0.653	B	0.812	D	0.846	D	0.034	No	N.F.	N.F.
9. Cherry Avenue at Pacific Coast Highway	AM	0.825	D	**0.987**	**E**	**0.999**	**E**	0.012	No	--	--
	PM	0.740	C	**0.938**	**E**	**0.953**	**E**	0.015	No	--	--
10. Alamitos Avenue at E. 20th Street	AM	17.0 s/v	C	13.5 s/v	B	13.9 s/v	B	0.4 s/v	No	--	--
	PM	9.7 s/v	A	9.9 s/v	A	10.0 s/v	B	0.1 s/v	No	--	--
11. Orange Avenue at 19th Street/Alamitos Avenue	AM	**132.4 s/v**	**F**	**221.5 s/v**	**F**	**522.8 s/v**	**F**	301.3 s/v	No [a]	0.786	C
	PM	**158.4 s/v**	**F**	**492.8 s/v**	**F**	**905.9 s/v**	**F**	**413.1 s/v**	**Yes**	0.728	C
12. May Avenue at Pacific Coast Highway	AM	**65.9 s/v**	**F**	**191.5 s/v**	**F**	**10,000.0 s/v**	**F**	9,808.5 s/v	No [a]	--	--
	PM	27.8 s/v	D	**79.8 s/v**	**F**	**171.3 s/v**	**F**	91.5 s/v	No [a]	--	--

Notes:

- s/v = seconds per vehicle (delay)
- **Bold ICU/LOS and HCM/LOS values** indicate adverse service levels
- [a] = The peak hour traffic signal warrant is not satisfied for this location, therefore there is no significant impact per the criteria mentioned in this report.
- N.F. = None Feasible

9.0 STATE OF CALIFORNIA (CALTRANS) METHODOLOGY

In conformance with the current Caltrans *Guide for the Preparation of Traffic Impact Studies*, existing and projected peak hour operating conditions at the five (5) signalized state-controlled study intersections within the study area have been evaluated using the *Highway Capacity Manual* operations method of analysis. These signalized state-controlled locations include the following five of twelve key study intersections:

5. Atlantic Avenue at Pacific Coast Highway
6. Martin Luther King Jr. Avenue at Pacific Coast Highway
7. Orange Avenue at Pacific Coast Highway
8. Walnut Avenue at Pacific Coast Highway
9. Cherry Avenue at Pacific Coast Highway

Caltrans "endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities"; it does not require that LOS "D" (shall) be maintained. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. For this analysis, LOS D is the target level of service standard and will be utilized to assess the project impacts at the state-controlled study intersections.

9.1 Existing Plus Project Traffic Conditions

Table 9-1 summarizes the existing plus project peak hour HCM level of service results at the five (5) signalized state-controlled study intersections within the study area. The first column (1) of HCM/LOS values in *Table 9-1* presents a summary of existing traffic conditions. The second column (2) presents existing plus project traffic conditions. The third column (3) indicates whether the traffic associated with the Project will have a significant impact based on the LOS standards defined in this report. The fourth column (4) indicates the anticipated operating conditions with implementation of improvements recommended to mitigate Project traffic and/or achieve an acceptable Level of Service.

9.1.1 *Existing Traffic Conditions*

Review of Column 1 of *Table 9-1* indicates that all of the state-controlled study intersections currently operate at acceptable LOS C or better during the AM and PM peak hours.

9.1.2 *Existing Plus Project Traffic Conditions*

Review of Columns 2 and 3 of *Table 9-1* indicates that added traffic associated with the proposed Project ***will not*** significantly impact any of the five (5) signalized state-controlled study intersections, when compared to the LOS standards specified in this report. The five (5) signalized state-controlled study intersections are forecast to continue to operate at acceptable LOS C or better with the addition of Project generated traffic to existing traffic.

9.2 Year 2041 Traffic Conditions

Table 9-2 summarizes the Year 2041 peak hour HCM level of service results at the five (5) signalized state-controlled study intersections within the study area. The first column (1) of HCM/LOS values in *Table 9-2* presents a summary of existing traffic conditions. The second column (2) presents Year 2041 traffic conditions based on existing intersection geometry, but without any project generated traffic. The third column (3) presents Year 2041 traffic conditions with the addition of Project traffic. Column four (4) indicates whether the traffic associated with the Project will have a significant impact based on the LOS standards defined in this report. The fifth column (5) indicates the anticipated operating conditions with implementation of improvements recommended to mitigate Project traffic and/or achieve an acceptable Level of Service.

9.2.1 *Year 2041 Buildout Traffic Conditions (Without Project Traffic)*

An analysis of future (Year 2041) traffic conditions indicates that the addition of ambient traffic growth and cumulative projects traffic will not adversely impact any of the five (5) signalized state-controlled study intersections. The five (5) signalized state-controlled study intersections are forecast to operate at acceptable LOS D or better during the AM and PM peak hours with the addition of ambient traffic growth and cumulative projects traffic.

9.2.2 *Year 2041 Buildout Plus Project Traffic Conditions*

Review of Columns 3 and 4 of *Table 9-2* indicates that traffic associated with the proposed Project ***will not*** significantly impact any of the five (5) signalized state-controlled study intersections, when compared to the LOS standards specified in this report. The five (5) signalized state-controlled study intersections are forecast to continue to operate at acceptable LOS D or better with the addition of project generated traffic in the Year 2041.

Appendix C presents the existing plus project and Year 2041 HCM/LOS calculations for the state-controlled study intersections for the AM and PM peak hours.

TABLE 9-1

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY – CALTRANS

Key Intersection	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Significant Impact		(4) Existing Plus Project Traffic Conditions with Improvements	
		Delay (s/v)	LOS	Delay (s/v)	LOS	Increase	Yes/No	Delay (s/v)	LOS
5. Atlantic Avenue at Pacific Coast Highway	AM	23.9 s/v	C	25.0 s/v	C	1.1 s/v	No	--	--
	PM	22.5 s/v	C	22.9 s/v	C	0.4 s/v	No	--	--
6. Martin Luther King Jr. Avenue at Pacific Coast Highway	AM	12.0 s/v	B	12.9 s/v	B	0.9 s/v	No	--	--
	PM	11.0 s/v	B	11.0 s/v	B	0.0 s/v	No	--	--
7. Orange Avenue at Pacific Coast Highway	AM	26.1 s/v	C	27.8 s/v	C	1.7 s/v	No	--	--
	PM	23.3 s/v	C	24.3 s/v	C	1.0 s/v	No	--	--
8. Walnut Avenue at Pacific Coast Highway	AM	10.7 s/v	B	12.2 s/v	B	1.5 s/v	No	--	--
	PM	9.5 s/v	A	11.0 s/v	B	1.5 s/v	No	--	--
9. Cherry Avenue at Pacific Coast Highway	AM	30.0 s/v	C	31.0 s/v	C	1.0 s/v	No	--	--
	PM	25.4 s/v	C	26.9 s/v	C	1.5 s/v	No	--	--

Notes:

- s/v = seconds per vehicle (delay)
- **Bold HCM/LOS values** indicate adverse service levels

TABLE 9-2

YEAR 2041 PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY – CALTRANS

Key Intersection	Time Period	(1) Existing Traffic Conditions		(2) Year 2041 Buildout Traffic Conditions		(3) Year 2041 Buildout Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2041 Buildout Plus Project Traffic Conditions with Improvements	
		Delay (s/v)	LOS	Delay (s/v)	LOS	Delay (s/v)	LOS	Increase	Yes/No	Delay (s/v)	LOS
5. Atlantic Avenue at Pacific Coast Highway	AM	23.9 s/v	C	30.4 s/v	C	30.8 s/v	C	0.4 s/v	No	--	--
	PM	22.5 s/v	C	32.8 s/v	C	32.8 s/v	C	0.0 s/v	No	--	--
6. Martin Luther King Jr. Avenue at Pacific Coast Highway	AM	12.0 s/v	B	15.3 s/v	B	16.0 s/v	B	0.7 s/v	No	--	--
	PM	11.0 s/v	B	14.0 s/v	B	14.5 s/v	B	0.5 s/v	No	--	--
7. Orange Avenue at Pacific Coast Highway	AM	26.1 s/v	C	36.2 s/v	D	38.4 s/v	D	2.2 s/v	No	--	--
	PM	23.3 s/v	C	34.4 s/v	C	36.6 s/v	D	2.2 s/v	No	--	--
8. Walnut Avenue at Pacific Coast Highway	AM	10.7 s/v	B	16.0 s/v	B	20.0 s/v	B	4.0 s/v	No	--	--
	PM	9.5 s/v	A	13.2 s/v	B	16.4 s/v	B	3.2 s/v	No	--	--
9. Cherry Avenue at Pacific Coast Highway	AM	30.0 s/v	C	39.1 s/v	D	40.7 s/v	D	1.6 s/v	No	--	--
	PM	25.4 s/v	C	37.5 s/v	D	38.5 s/v	D	1.0 s/v	No	--	--

Notes:

- s/v = seconds per vehicle (delay)
- **Bold HCM/LOS values** indicate adverse service levels

10.0 RECOMMENDED IMPROVEMENTS

For those intersections where projected Project traffic volumes are expected to result in unacceptable operating conditions (as defined by a City's significant impact criteria), traffic impact studies of this type typically recommend (identify) improvement measures that change the intersection geometry to increase capacity. These capacity improvements involve roadway widening and/or re-striping to reconfigure (add lanes) to specific approaches of a key intersection. The identified improvements are expected to:

- mitigate the impact of existing traffic, Project traffic and future non-project (ambient traffic growth and cumulative project) traffic and
- improve Levels of Service to an acceptable range and/or to pre-project conditions.

10.1 Existing Plus Project Traffic Conditions

The results of the intersection capacity analyses presented previously in *Tables 8-1* and *9-1* shows that the proposed Project will significantly impact one (1) of the twelve (12) key study intersections under the "Existing Plus Project" traffic scenario. The following are improvements recommended to mitigate the existing plus project traffic impacts:

- **No. 11 – Orange Avenue at 19th Street/Alamitos Avenue:** Install a two-phase traffic signal. The installation of this improvement is subject to the approval of the City of Long Beach.

Figure 10-1 graphically illustrates the existing plus project recommended improvements.

10.2 Year 2041 Plus Project Traffic Conditions

The results of the intersection capacity analyses presented previously in *Tables 8-2* and *9-2* shows that the proposed Project will significantly impact three (3) of the twelve (12) key study intersections under the "Year 2041 Plus Project" traffic scenario. The following are improvements recommended to mitigate the Year 2041 plus project traffic impacts:

- **No. 7 – Orange Avenue at Pacific Coast Highway:** No physical mitigation measures are feasible; any additional turn lanes will require widening and additional right-of-way. As such, the impact at this location is considered ***significant and unavoidable*** and a statement of overriding considerations will be required for this location.

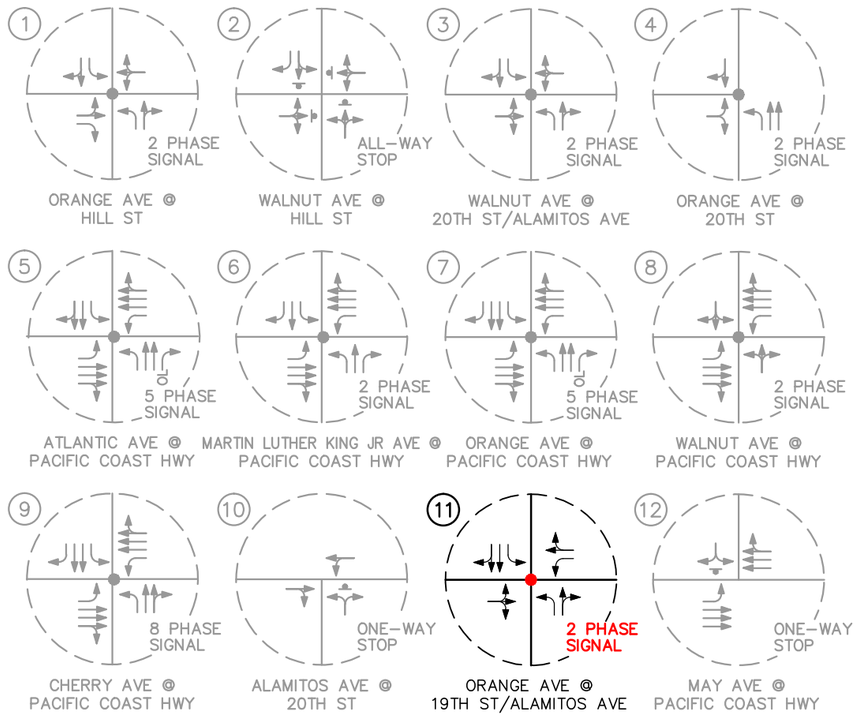
  It should be noted that this location is only significantly impacted by the proposed Project under the City of Long Beach ICU methodology. This location does not have a significant impact based on the Caltrans HCM methodology.

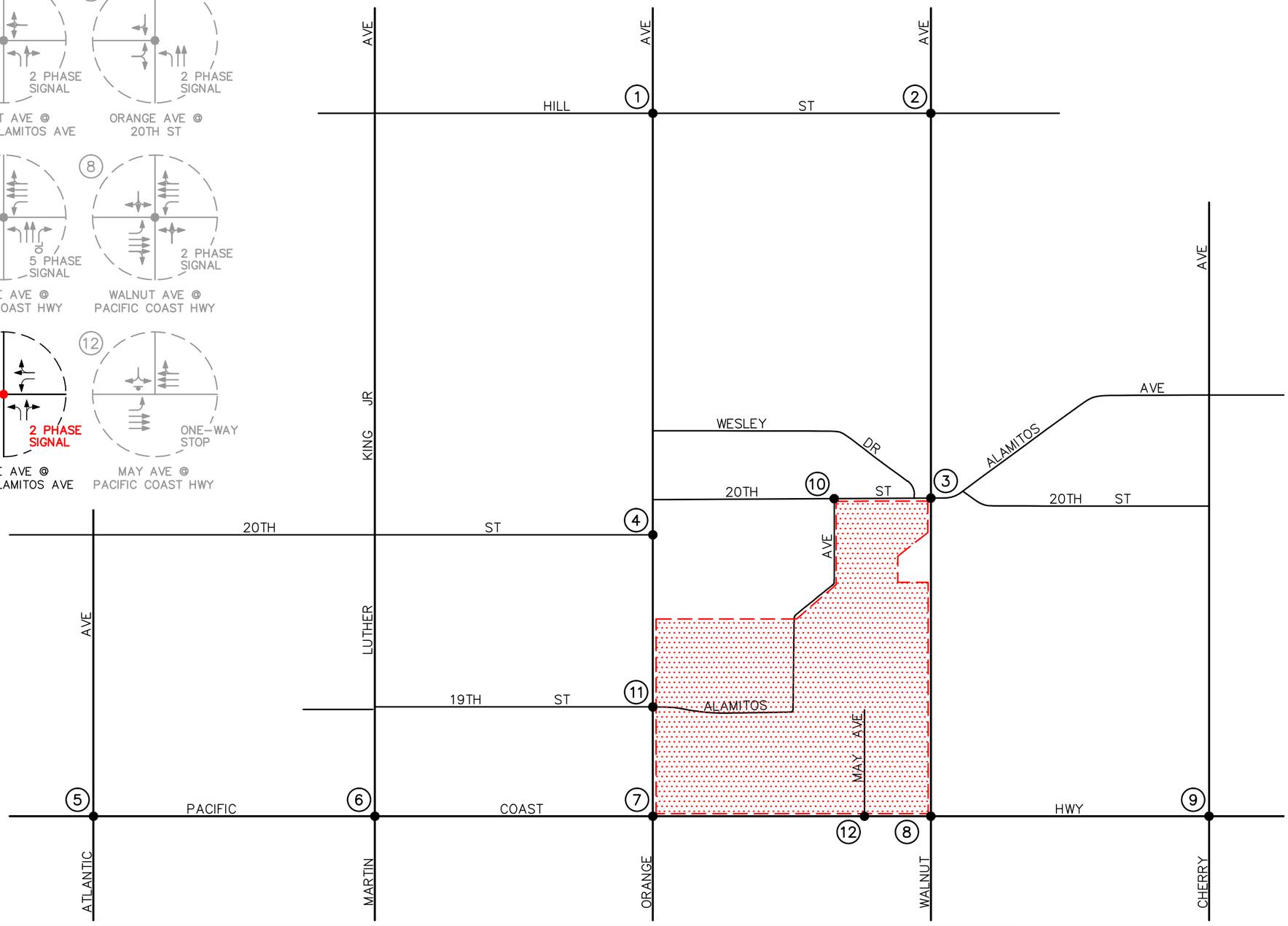
- **No. 8 – Walnut Avenue at Pacific Coast Highway:** No physical mitigation measures are feasible; any additional turn lanes will require widening and additional right-of-way. As such, the impact at this location is considered ***significant and unavoidable*** and a statement of overriding considerations will be required for this location.

It should be noted that this location is only significantly impacted by the proposed Project under the City of Long Beach ICU methodology. This location does not have a significant impact based on the Caltrans HCM methodology.

- **No. 11 – Orange Avenue at 19th Street/Alamitos Avenue:** Install a two-phase traffic signal. Restripe Orange Avenue to provide an exclusive northbound right-turn lane. The installation of these improvements is subject to the approval of the City of Long Beach.

Figure 10-2 graphically illustrates the Year 2041 plus project recommended improvements.





LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION
= APPROACH LANE ASSIGNMENT
= RECOMMENDED IMPROVEMENTS
= PROJECT SITE

FIGURE 10-1

EXISTING PLUS PROJECT RECOMMENDED IMPROVEMENTS

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH

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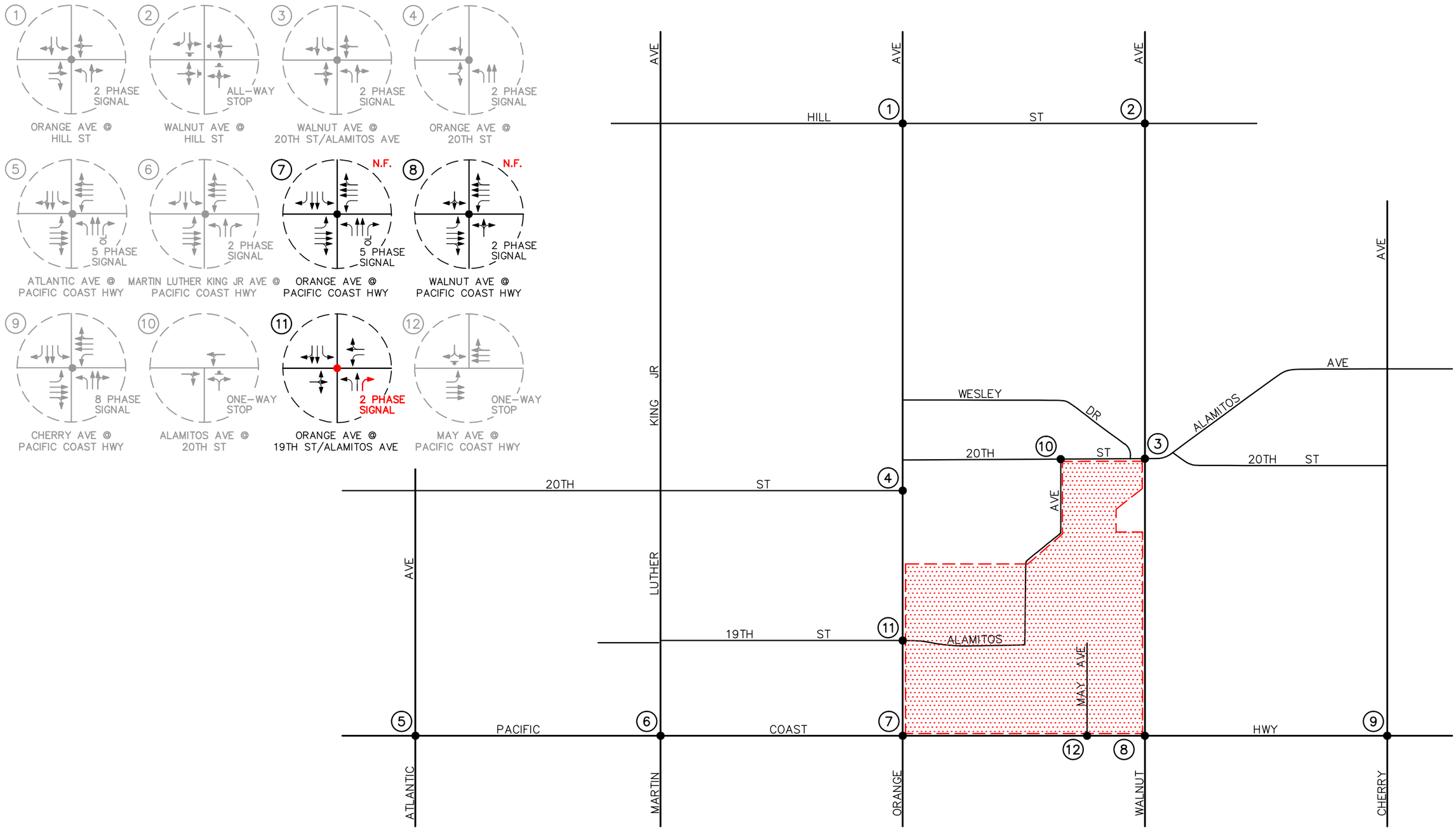

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION
= APPROACH LANE ASSIGNMENT
= RECOMMENDED IMPROVEMENTS
= PROJECT SITE
N.F. = NONE FEASIBLE

FIGURE 10-2

YEAR 2041 BUILDOUT PLUS PROJECT RECOMMENDED IMPROVEMENTS

LBCCD 2041 MASTER PLAN – PACIFIC COAST CAMPUS, LONG BEACH

11.0 SUMMARY OF FINDINGS AND CONCLUSIONS

- ***Project Description*** – The project site is bounded by the Mary Butler School and 20th Street to the north, Pacific Coast Highway to the south, Orange Avenue to the west and Walnut Avenue to the east in the City of Long Beach, California. The proposed Project will generally consist of the construction of new campus facilities and the renovation of existing campus facilities to meet the District's instructional needs and to accommodate growth in the student body over the planning horizon. In addition to the new and/or renovated instructional space, the proposed Project will also consist of a new parking structure to be located on the northwest corner of the intersection of Walnut Avenue and Pacific Coast Highway. All project components are expected to be completed by the Year 2041.

  The Pacific Coast Campus has a current baseline (Year 2017) student enrollment of 5,161 students. As stated above, the renovation of existing campus facilities and the construction of new campus facilities are required to meet the District's instructional needs and to accommodate growth in the student body. At completion of the Master Plan in the Year 2041, the Pacific Coast Campus is projected to accommodate a future student enrollment of 8,440 students, resulting in a net increase of 3,279 students over the existing student enrollment.

  Vehicular access to the campus would continue to be provided from 20th Street, Pacific Coast Highway, Orange Avenue and Walnut Avenue. 20th Street currently provides and will continue to provide access to the site via the unsignalized intersection of 20th Street/Alamitos Avenue (i.e. key study intersection #10). Pacific Coast Highway currently provides and will continue to provide access to the site via the unsignalized intersection of Pacific Coast Highway/May Avenue (i.e. key study intersection #12). Orange Avenue currently provides and will continue to provide access to the site via the unsignalized intersection of Orange Avenue/19th Street-Alamitos Avenue (i.e. key study intersection #11). Walnut Avenue currently provides and will continue to provide access to the site via various unsignalized access driveways.

- ***Study Scope*** – Twelve (12) key study locations were selected for detailed peak hour level of service analyses under Existing Traffic Conditions, Existing Plus Project Traffic Conditions and Year 2041 Traffic Conditions without and with the proposed Project.

  Key Study Locations

  1. Orange Avenue at Hill Street (City of Signal Hill)
  2. Walnut Avenue at Hill Street (City of Signal Hill)
  3. Walnut Avenue at 20th Street/Alamitos Avenue (City of Long Beach)
  4. Orange Avenue at 20th Street (City of Long Beach)
  5. Atlantic Avenue at Pacific Coast Highway (City of Long Beach/Caltrans)
  6. Martin Luther King Jr. Avenue at Pacific Coast Highway (City of Long Beach/Caltrans)
  7. Orange Avenue at Pacific Coast Highway (City of Long Beach/Caltrans)
  8. Walnut Avenue at Pacific Coast Highway (City of Long Beach/Caltrans)
  9. Cherry Avenue at Pacific Coast Highway (City of Long Beach/Caltrans)
  10. Alamitos Avenue at E. 20th Street (City of Long Beach)
  11. Orange Avenue at 19th Street/Alamitos Avenue (City of Long Beach)
  12. May Avenue at Pacific Coast Highway (City of Long Beach/Caltrans)

- ***Existing Traffic Conditions*** – Two (2) of the twelve (12) key study intersections currently operate at an unacceptable LOS during the AM and/or PM peak hours. The remaining ten (10) key study intersections currently operate at acceptable LOS D or better during the AM and/or PM peak hours. The intersections operating at an adverse level of service are:

	AM Peak Hour		PM Peak Hour	
Key Intersection	ICU/HCM	LOS	ICU/HCM	LOS
11. Orange Avenue at 19th Street/Alamitos Avenue	132.4 s/v	F	158.4 s/v	F
12. May Avenue at Pacific Coast Highway	65.9 s/v	F	---	---

- ***Project Trip Generation*** – The proposed Project (i.e. net increase of 3,279 students) is forecast to generate 3,771 daily trips, with 361 trips (292 inbound, 69 outbound) forecast during the AM peak hour and 361 trips (202 inbound and 159 outbound) forecast during the PM peak hour on a typical weekday.

- ***Cumulative Projects Traffic Characteristics –*** The thirty-seven (37) cumulative projects are forecast to generate a combined total of 37,871 daily trips, with 4,764 trips (1,812 inbound and 2,952 outbound) forecast during the AM peak hour and 5,116 trips (2,790 inbound and 2,326 outbound) forecast during the PM peak hour.

- ***Existing Plus Project Traffic Conditions*** – The proposed Project, when added to only existing traffic volumes, will significantly impact one (1) of the twelve (12) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. Although the intersection of May Avenue/Pacific Coast Highway is forecast to operate at unacceptable LOS F during the AM peak hour, this unsignalized intersection is not impacted per the significant impact criteria specified in this report; signalization of the intersection could provide a means for reducing the indicated delay, but the peak hour traffic signal warrant is not satisfied. The remaining ten (10) key study intersections currently operate and are forecast to continue to operate at an acceptable service level during the AM and PM peak hours with the addition of Project generated traffic to existing traffic. The intersection operating at an adverse level of service under existing plus project traffic conditions is as follows:

	AM Peak Hour		PM Peak Hour	
Key Intersection	ICU/HCM	LOS	ICU/HCM	LOS
11. Orange Avenue at 19th Street/Alamitos Avenue	359.1 s/v	F	356.4 s/v	F

  The implementation of improvements at this one (1) impacted key study intersection completely offsets the impact of project traffic and the intersection is forecast to operate at an acceptable LOS during the AM and PM peak hours.

- ***Year 2041 Buildout Plus Project Traffic Conditions*** – The added traffic associated with the proposed Project will significantly impact three (3) of the twelve (12) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. Although the intersection of Cherry Avenue/Pacific Coast Highway is forecast to operate at unacceptable LOS E during the AM and PM peak hours with the addition of project traffic, the

proposed Project is expected to add less than 0.020 to the ICU value, which results in a less than significant impact. Further, although the intersection of May Avenue/Pacific Coast Highway is forecast to operate at unacceptable LOS F during the AM and PM peak hours, this unsignalized intersection is not impacted per the significant impact criteria specified in this report; signalization of the intersection could provide a means for reducing the indicated delay, but the peak hour traffic signal warrant is not satisfied. The remaining seven (7) key study intersections are forecast to continue to operate at an acceptable LOS with the addition of project generated traffic in the Year 2041. The three (3) locations significantly impacted by the proposed Project in the Year 2041 are as follows:

	AM Peak Hour		PM Peak Hour	
Key Intersection	ICU/HCM	LOS	ICU/HCM	LOS
7. Orange Avenue at Pacific Coast Highway	0.956	E	0.953	E
8. Walnut Avenue at Pacific Coast Highway	0.939	E	---	---
11. Orange Avenue at 19th Street/Alamitos Avenue	522.8 s/v	F	905.9 s/v	F

The implementation of improvements at the impacted key study intersection of Orange Avenue/19th Street-Alamitos Avenue completely offsets the impact of project traffic and the key study intersection is forecast to operate at an acceptable LOS during the AM and PM peak hours. For the remaining two impacted key study intersections of Orange Avenue/Pacific Coast Highway and Walnut Avenue/Pacific Coast Highway, additional capacity-enhancing improvements at these two key study intersections do not appear feasible due to physical and right-of-way restrictions that prohibit any additional widening and/or restriping. Therefore, the impacts at these two locations will remain significant.

- ***Caltrans Methodology (Existing Plus Project Traffic Conditions)*** – The proposed Project ***will not*** significantly impact any of the five (5) signalized state-controlled study intersections, when compared to the LOS standards specified in this report. The five (5) signalized state-controlled study intersections are forecast to continue to operate at acceptable LOS C or better with the addition of Project generated traffic to existing traffic. As there are no significant impacts, no traffic mitigation measures are required or recommended for the five (5) signalized state-controlled study intersections.

- ***Caltrans Methodology (Year 2041 Buildout Plus Project Traffic Conditions)*** – The proposed Project ***will not*** significantly impact any of the five (5) signalized state-controlled study intersections, when compared to the LOS standards specified in this report. The five (5) signalized state-controlled study intersections are forecast to continue to operate at acceptable LOS D or better with the addition of project generated traffic in the Year 2041. As there are no significant impacts, no traffic mitigation measures are required or recommended for the five (5) signalized state-controlled study intersections.

- ***Recommended Existing Plus Project Improvements –*** The results of the intersection capacity analyses presented previously in *Tables 8-1* and *9-1* shows that the proposed Project will significantly impact one (1) of the twelve (12) key study intersections under the "Existing Plus Project" traffic scenario. The following are improvements recommended to mitigate the existing plus project traffic impacts:

  - **No. 11 – Orange Avenue at 19th Street/Alamitos Avenue:** Install a two-phase traffic signal. The installation of this improvement is subject to the approval of the City of Long Beach.

- ***Recommended Year 2041 Buildout Plus Project Improvements –*** The results of the intersection capacity analyses presented previously in *Tables 8-2* and *9-2* shows that the proposed Project will significantly impact three (3) of the twelve (12) key study intersections under the "Year 2041 Plus Project" traffic scenario. The following are improvements recommended to mitigate the Year 2041 plus project traffic impacts:

  - **No. 7 – Orange Avenue at Pacific Coast Highway:** No physical mitigation measures are feasible; any additional turn lanes will require widening and additional right-of-way. As such, the impact at this location is considered ***significant and unavoidable*** and a statement of overriding considerations will be required for this location.

    It should be noted that this location is only significantly impacted by the proposed Project under the City of Long Beach ICU methodology. This location does not have a significant impact based on the Caltrans HCM methodology.

  - **No. 8 – Walnut Avenue at Pacific Coast Highway:** No physical mitigation measures are feasible; any additional turn lanes will require widening and additional right-of-way. As such, the impact at this location is considered ***significant and unavoidable*** and a statement of overriding considerations will be required for this location.

    It should be noted that this location is only significantly impacted by the proposed Project under the City of Long Beach ICU methodology. This location does not have a significant impact based on the Caltrans HCM methodology.

  - **No. 11 – Orange Avenue at 19th Street/Alamitos Avenue:** Install a two-phase traffic signal. Restripe Orange Avenue to provide an exclusive northbound right-turn lane. The installation of these improvements is subject to the approval of the City of Long Beach.

APPENDIX E– 2041 FACILITIES MASTER PLAN

LONG BEACH COMMUNITY COLLEGE DISTRICT

2041 FACILITIES MASTER PLAN || MAY 2016

ACKNOWLEDGEMENTS

Eloy Ortiz Oakley	Superintendent-president

FACILITIES ADVISORY COMMITTEE

Robert Maxell	Co-Chairperson
Ann-Marie Gabel	Co-Chairperson
Richard Estacio	Classified Staff
Kim Hatch	Faculty
Karen Kane	Faculty
Alicia Kruizenga	Management Team
Emmanuel Ndoumna	Adjunct Faculty
Tim Wootton	Facilities
Medhanie Ephrem	Facilities

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

This document was prepared by Facilities Planning & Program Services, Inc. ("FPPS") to provide the following information for each of the projects proposed to be a part of the LBCCD 2041 Facilities Master Plan:

- Project description for each of the projects
- Definition of activities/tasks that will be performed during each phase of project delivery
- Size and estimated cost of each project
- Funding sources for each project
- Timeframe for delivery of each project
- Estimated funding amounts that will be needed each year through 2041 (Estimated Cash Flow)

FPPS worked with LBCCD and its various representatives and consultants to derive an understanding of the projects envisioned for the Master Plan in order to generate a list of proposed projects. Based on information provided by LBCCD, the type and size of each project was established and a probable cost of each project was estimated. The estimated cost of each project was broken down to define what portion of the total cost should be allocated to construction, contingencies (i.e. construction, design, and project contingencies), soft costs, and escalation.

In addition to the cost analysis described above, six phases of project delivery were defined for each project. The six phases include Planning, Design, DSA Review & Approval, Bid & Award, Construction, and Project Closeout. FPPS then calculated an estimated cost and an appropriate schedule duration for each phase of every project.

Based on all of the preceding, the Master Plan Schedule was generated to graphically display the timeframes in which the six phases of each project are expected to occur for the entire duration of the Master Plan through 2041. This step was followed by the allocation of estimated costs to each of the activities (i.e. each of the six phases) displayed in the Master Plan Schedule.

Knowing the duration of each activity for every project, together with the cost of each such activity, enabled FPPS to then calculate the amount of funds that will be needed during each increment of time throughout the entire duration of the Master Plan through 2041. The amount and timing of funds needed are displayed in the Estimated Cash Flow that is included at the end of this report.

PROJECT LIST

The Project List spreadsheet that follows is a summary overview of the 2041 Facilities Master Plan projects to be completed over the next 25 years. The projects are listed in order of construction but only if isolated by project site, such as the LAC, PCC or District Wide designations.

The information contained in some of the columns may not be fully evident, therefore, explanations and definitions are provided as follows:

ASSIGNABLE SQUARE FEET (ASF): The sum of all areas on all floors of a building that are available for assignment, such as classrooms, labs, offices, etc.

GROSS SQUARE FEET (GSF): The sum of all areas on all floors of a building included within the outside faces of the exterior walls.

CONSTRUCTION COST: The cost is determined by multiplying the GSF times a unit cost per square foot. The unit costs vary by type of building and are based upon standards from the California Community Colleges or professional cost estimates.

TOTAL COST: The cost is determined by multiplying the Construction Cost by a factor of 1.4 to 1.8, depending upon project type. The factor varies due to type of construction, size of the project and complexity of the project. This factor covers such "soft" costs as architectural/engineering services, plan check approval, legal fees, testing/inspection, construction management, furniture, technology and equipment. The Total Cost estimated at this time for all projects is $785,878,836.

TOTAL COST INCLUDING ESCALATION: Due to ongoing increases for both construction and "soft" costs, this column adds a 3% cost-of-living factor which is compounded annually to the year that construction commences. The Total Cost Including Escalation is estimated at $1,008,451,288.

POTENTIAL STATE FUNDING: This column shows potential sources of State revenue due to the fact that the project may qualify for capital outlay funding. The State revenues reduce the dollars noted in the Total Cost Including Escalation column. At this time, the estimated State match for potential projects is $78,666,290. If State funding does not come to fruition, the Long Term Renovation Contingency will be used in its place.

MEASURE E 2008 AVAILABLE FUNDS: Reflects dollars that are available from the District's 2008 bond that will be utilized to reduce the dollars noted in the Total Cost Including Escalation column. The amount available at this time is $162,578,701.

EXECUTIVE SUMMARY

LBCCD 2041 FACILITIES MASTER PLAN - PROJECT LIST

Purple font is data from IPP / FPP

Green font is data from Facility Inventory

4/7/16

Location	Construction Type	Proposed Bond Projects List	Cost Estimate Details (as of 2/10/16)			Total Cost	Construction Dates		Total Cost Including Escalation	Potential State Funding Amounts	Measure E 2008 Available Funds	Amts Required After Deducting State & Measure E Funding
			Assignable Sq. Ft. (ASF)	Gross Sq. Ft. (GSF)	Construction Cost (GSF x Unit Cost)	25 Year Plan (Constrn Cost x 1.6) Unless Othrws Noted)	Start	Finish				
PCC	Reno/New	Buildings QQ/RR - Electrical Program / Dyer Hall / Lifetime Learning	NA	NA	NA	20,302,962	2015/16	2016/17	20,302,962		20,302,962	0
LAC	Renovation	Building D - Science	NA	NA	NA	11,930,197	2016/17	2017/18	12,288,103		12,288,103	0
LAC/PCC	New	District Wide Security Monitoring Systems (Cameras)	-	-	-	10,000,000	2016/17	2016/17	10,000,000		5,691,257	4,308,743
LAC	Renovation	Building P - Language Arts	NA	NA	NA	8,418,168	2016/17	2017/18	8,670,713		8,670,713	0
LAC	Renovation	Building J - Auditorium	NA	NA	NA	23,215,711	2017/18	2018/19	24,629,548		24,629,548	0
LAC	Renovation	Outdoor Kinesiology Labs	NA	NA	9,375,000	15,000,000	2018/19	2019/20	16,390,500		4,206,980	12,183,520
LAC	New	Building W - Aquatic Center	NA	NA	15,625,000	25,000,000	2019/20	2020/21	28,137,500		350,000	27,787,500
PCC	Renovation	Building MM - Construction Trades Ph1	13,033	17,819	9,524,000	15,238,400	2020/21	2021/22	17,665,877	6,858,000	7,798,722	3,009,155
PCC	New	Building P2 - Parking Structure	NA	NA	12,857,143	18,000,000	2021/22	2022/23	21,493,800			21,493,800
PCC	Renovation	Building MM - Construction Trades Ph2	10,514	15,749	7,546,079	12,073,726	2021/22	2022/23	14,417,237	9,706,535	2,367,191	2,343,511
PCC	New	Building OO - Classroom	105,000	150,000	60,000,000	96,000,000	2021/22	2024/25	118,070,400	20,000,000		98,070,400
LAC	Renovation	Building E - College Center	33,858	50,276	18,853,500	30,165,600	2022/23	2023/24	37,100,671		18,168,765	18,931,906
PCC	Demolition	Building FF - Demolish Fine Arts / Senior Center	7,988	10,640	1,250,000	2,000,000	2023/24	2024/25	2,533,600		1,105,190	1,428,410
LAC	New	Building M - Liberal Arts	57,379	81,970	33,576,409	53,722,254	2024/25	2026/27	70,096,798	20,601,755	32,942,452	16,552,591
LAC	Renovation	Building O2 - Economic & Workforce Development / Foundation	37,015	51,302	16,673,150	26,677,040	2024/25	2026/27	34,808,202			34,808,202

EXECUTIVE SUMMARY

LBCCD 2041 FACILITIES MASTER PLAN - PROJECT LIST

Purple font is data from IPP / FPP

Green font is data from Facility Inventory

4/7/16

Location	Construction Type	Proposed Bond Projects List	Cost Estimate Details (as of 2/10/16) Assignable Sq. Ft. (ASF)	Gross Sq. Ft. (GSF)	Construction Cost (GSF x Unit Cost)	Total Cost 25 Year Plan (Constrn Cost x 1.6) Unless Othrws Noted)	Construction Dates Start	Finish	Total Cost Including Escalation	Potential State Funding Amounts	Measure E 2008 Available Funds	Amts Required After Deducting State & Measure E Funding
LAC	New	Building G - Performing Arts	30,000	42,857	21,696,429	**34,714,286**	2026/27	2028/29	**49,495,629**	15,000,000	**12,531,982**	**21,963,647**
LAC	Renovation	Building K - Art	23,419	29,479	10,317,650	**16,508,240**	2029/30	2030/31	**25,719,838**		**1,691,210**	**24,028,628**
LAC	Renovation	Building R - Primary Gymnasium	51,988	78,024	23,407,200	**37,451,520**	2030/31	2032/33	**60,098,454**		**165,367**	**59,933,087**
LAC	Renovation	Building Q - Secondary Gymnasium	27,254	30,270	9,081,000	**14,529,600**	2033/34	2034/35	**24,735,191**		**308,241**	**24,426,950**
LAC	Renovation	Building B - Classroom	29,528	44,357	13,307,100	**21,291,360**	2034/35	2036/37	**37,334,400**	6,500,000		**30,834,400**
LAC	Demolition	Building F - Demolish Family / Consumer Education	10,496	15,387	1,250,000	**2,000,000**	2037/38	2037/38	**3,720,600**		**1,000,000**	**2,720,600**
LAC	Renovation	Building O1 - IITS / Warehouse	17,370	26,560	8,632,000	**13,811,200**	2037/38	2038/39	**26,463,640**			**26,463,640**
LAC	Renovation	Building S - Stadium	NA	NA	32,142,857	**45,000,000**	2037/38	2039/40	**88,812,000**		**3,060,341**	**85,751,659**
LAC	New	Building CDC - Child Development Center	12,000	17,143	6,857,143	**10,971,429**	2038/39	2039/40	**21,022,354**			**21,022,354**
PCC	Renovation	PCC Walkways & Wayfinding	NA	NA	1,632,653	**2,285,714**	2017/18	2040/41	**2,572,571**		**332,958**	**2,239,613**
TBD	New	Joint Use Facility	30,000	42,857	15,625,000	**25,000,000**	2019/20	2020/21	**27,317,500**			**27,317,500**
LAC	Renovation	LAC Walkways & Wayfinding	NA	NA	3,265,306	**4,571,429**	2018/19	2040/41	**4,995,200**		**1,301,370**	**3,693,830**
LAC/PCC		Technology Refresh / Replacement	-	-	-	**60,000,000**	2016/17	2040/41	**69,558,000**			**69,558,000**
LAC/PCC		Enterprise Wide Computer System	-	-	-	**20,000,000**	2016/17	2040/41	**20,000,000**			**20,000,000**
LAC/PCC		Landscaping	-	-	-	**20,000,000**	2016/17	2040/41	**20,000,000**		**2,359,166**	**17,640,834**

EXECUTIVE SUMMARY

LBCCD 2041 FACILITIES MASTER PLAN - PROJECT LIST

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Green font is data from Facility Inventory

4/7/16

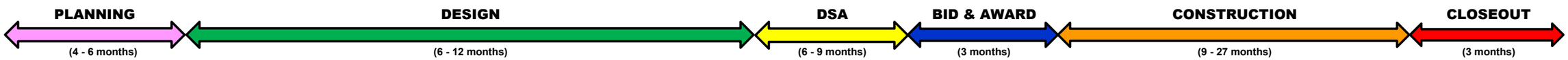
Location	Construction Type	Proposed Bond Projects List	Cost Estimate Details (as of 2/10/16) Assignable Sq. Ft. (ASF)	Gross Sq. Ft. (GSF)	Construction Cost (GSF x Unit Cost)	Total Cost 25 Year Plan (Constrn Cost x 1.6) Unless Othrws Noted)	Construction Dates Start	Finish	Total Cost Including Escalation	Potential State Funding Amounts	Measure E 2008 Available Funds	Amts Required After Deducting State & Measure E Funding
LAC/PCC		Infrastructure Projects	-	-	-	25,000,000	2016/17	2040/41	25,000,000			25,000,000
LAC/PCC		Energy / Water Conservation Projects	-	-	-	25,000,000	2015/16	2040/41	25,000,000			25,000,000
LAC/PCC		Minor Campus Improvements	-	-	-	30,000,000	2016/17	2040/41	30,000,000		760,493	29,239,507
LAC/PCC		Surface Parking Improvements	-	-	-	10,000,000	2016/17	2040/41	10,000,000		545,690	9,454,310
					TOTAL:	785,878,836			1,008,451,288	78,666,290	162,578,701	767,206,297
											Long Term Renovation Contingency:	82,793,703
											GRAND TOTAL:	850,000,000

PROJECT PHASES

The exhibit below documents the various phases associated with the construction of a building from the earliest planning stages through construction and project closeout. Specifically, it indicates the six (6) stages of project development as follows: Planning, Design, DSA Review, Bid and Award, Construction and Closeout.

The purpose of this exhibit is to convey the specific tasks under each phase and provide a better understanding of the construction process and the multitude of procedural steps that are necessary to implement a facility project. It is not uncommon for a project to take 31-60 months from conception (Planning) to move-in (Closeout).

PROJECT PHASES EXHIBIT (4-7-16)



PLANNING & PROGRAMMING	SCHEMATIC DESIGN	DESIGN DEVELOPMENT	CONSTRUCTION DOCUMENTS	DSA REVIEW	BID & AWARD	CONSTRUCTION	OCCUPANCY	CLOSEOUT
Establish goals	Site relationship	Dimensioned Floor plans	Drawings	Presubmittal meeting	RFQ / RFP	Update BIM Doc's (if applicable)	Move Management Services	As-Builts
Collect facts	Bubble or block diagrams (adjacencies)	Building sections	Specifications	DSA submittal package	RFP response(s)	A/E Construction Administration Services	Moving Company Services	M&O Manuals
Test concepts	Circulation & access diagrams	Exterior elevations	Contract forms and conditions	Bin time	Evaluate RFP response(s)	Submittal Review & Approval	User Punchlists	Warranties
Determine needs	Preliminary floor plans	Typical details	General requirements	DSA review	Interview(s)	RFI's / ASI's		Final BIM Doc's (if applicable)
Define the problem	Building Massing	Selection of finishes	General conditions	DSA review meetings	Selection / recommendation	Change Orders		Reconcile all financial matters
Function	Design concepts / system selections	Outline specifications	Bidding requirements	DSA comments	Contract negotiations	Pay Application Certification		Settlement of disputes
Form	Architectural	Foundation system definition	Bid forms	Response to DSA comments	Preparation of Board Docket	Field Observations		Final lien releases
Budget	Civil	Framing system definition	Constructability reviews	DSA Backcheck	Recommendation to Board	Punch List / Final Inspections		Consent of Surety
Schedule	Structural	Exterior envelope definition	Value engineering reviews	DSA Stampout	Board approval to award	Commissioning		Final payments
Describe space requirements	Mechanical	Engineering systems definition	Budget Update		Execution of contract	Owner Rep / Project Manager Services		Notice of Completion
Use / type of space	Electrical	Major equipment selections	Schedule Update		Notice to proceed	IOR Services		DSA Certification
Ancillary / support space	Budget Update	Budget Update	BIM Studies (if applicable)			Material Testing & Engineering Services		
Adjacency requirements	Schedule Update	Schedule Update	District/College review & approval			M & O Training		
Amount of area	District/College review & approval	District/College review & approval						
Number of people								
Furnishings & equipment								
District/College review & approval								


LONG BEACH
CITY COLLEGE
LIBERAL ARTS CAMPUS

02

LIBERAL ARTS CAMPUS

2041 FACILITIES MASTER PLAN

The 2041 Facilities Master Plan for the Liberal Arts Campus has been developed to support the Long Beach Community College District vision, mission and values.

The graphic plan on the following page highlights a series of recommendations for the long term development of the campus.

The Building Key to the right pertains to the buildings shown on the following page.

BUILDING KEY

EXISTING FACILITIES

- (A) STUDENT SERVICES
- (C) NURSING
- (I) BOOKSTORE
- (L) LIBRARY / LEARNING RESOURCE CENTER
- (P1) PARKING
- (T) MULTI-DISCIPLINARY ACADEMIC / ADMINISTRATION
- (V) MATH / CULINARY ARTS
- (X) CAMPUS POLICE / CENTRAL PLANT
- (Z) FACILITIES

RENOVATIONS

- (B) CLASSROOM
- (D) SCIENCE
- (E) COLLEGE CENTER
- (J) AUDITORIUM
- (K) ART
- (P) LANGUAGE ARTS
- (Q) SECONDARY GYMNASIUM
- (R) PRIMARY GYMNASIUM
- (S) STADIUM
- (O1) IITS / WAREHOUSE
- (O2) ECONOMIC & WORKFORCE DEVELOPMENT / FOUNDATION

DEMOLITION

- (f) FAMILY & CONSUMER STUDY
- (g) MUSIC RADIO / TV
- (h) THEATRE ARTS
- (q2) ATHLETICS
- (u) FACILITIES WAREHOUSE
- (y) FACILITIES WAREHOUSE
  FIELD HOUSE

NEW CONSTRUCTION

- (G) PERFORMING ARTS
- (M) LIBERAL ARTS
- (W) AQUATIC CENTER
- (CDC) CHILD DEVELOPMENT CENTER


CDC
4630 Clark Ave
Clark Ave
E Carson St
E Lew Davis St
E Conant St
Faculty Ave
PARKING
P1
VERIZON BUILDING
BASEBALL DIAMOND
PRACTICE FIELD
FOOTBALL FIELD
TENNIS COURTS
SOCCER FIELD
(field house)
SOCCER FIELD
SOFTBALL FIELD
G
(f)
E
D
C
B
V
(g)
(h)
J
A
K
L
M
P
I
T
Q
R
W
X
Z
O1
O2
S
(u)
(q2)
(y)
2041 FACILITIES MASTER PLAN
PROPERTY LINE
DEMOLITION
EXISTING FACILITIES
RENOVATIONS
NEW CONSTRUCTION
0 FEET
125
250
500

LBCCD 2041 FACILITIES MASTER PLAN - PROPOSED LOCAL BUDGET / FUNDING SOURCES / PROJECT DESCRIPTIONS

4/7/16

PROPOSED PROJECTS			Estimated Total Project Cost (includes escalation)	Construction Cost	Contingencies (Construction, Design & Proj Contingencies)	All Other	Proposed Local Budget	Potential State Funding	Measure E 2008 Bond Fund	PROJECT DESCRIPTIONS
LAC	1	Building D - Science	12,288,103	7,680,064	1,626,367	2,981,672	0		12,288,103	Building D was constructed in 1973 and requires a major renovation for improved technology and academic functionality. Work includes improving 16,000 square feet of various science and allied health learning environments with modern technology, relocation of electrical systems for improved maintenance access, and upgrading of elevators for ADA compliance.
LAC	2	Building P - Language Arts	8,670,713	5,419,196	1,147,594	2,103,923	0		8,670,713	Constructed in 1935, Building P requires a comprehensive renovation to upgrade electrical power systems, update HVAC equipment, address plumbing/storm drainage issues, modernize classrooms and enlarge some classrooms.
LAC	3	Building J - Auditorium	24,629,548	15,393,468	3,259,793	5,976,287	0		24,629,548	The college auditorium was constructed in 1956 and requires a renovation of basic building systems, aesthetic improvements, expansion of instructional space, ADA compliance, and installation of a fire suppression system and HVAC for this high occupancy facility.
LAC	4	Outdoor Kinesiology Labs	16,390,500	10,244,063	2,169,331	3,977,106	12,183,520		4,206,980	This project is a renovation of outdoor playing fields and support areas to include the installation of artificial turf on some fields, new scoreboards and bleachers, use of water saving irrigation systems and upgrading of storage facilities.
LAC	5	LAC Walkways & Wayfinding	4,995,200	3,122,000	661,129	1,212,071	3,693,830		1,301,370	In order to improve wayfinding and facility identification, this project provides for a uniform signage program and improved pedestrian walkways for better circulation.
LAC	6	Building W - Aquatic Center	28,137,500	17,585,938	3,724,081	6,827,481	27,787,500		350,000	This project is the construction of a new 50 meter x 25 yard pool as well as a 12,000 sq. ft. (approx.) shower/locker facility in a location near the existing pool. The existing pool has extensive maintenance and repair problems that cannot be cost effectively addressed, thereby requiring this project.
LAC	7	Building E - College Center	37,100,671	23,187,919	4,910,383	9,002,369	18,931,906		18,168,765	Constructed in 1968, the College Center Building is overdue for this major renovation. Scope of work includes updating the operational building systems, correction of deficiencies in the HVAC system, replacement and upgrading of the electrical system, changes for ADA and structural compliance and aesthetic improvements to modernize the facility.
LAC	8	Building M - Liberal Arts	70,096,798	43,810,499	9,277,517	17,008,782	16,552,591	20,601,755	32,942,452	This project involves replacing both of the outdated M & N Buildings (constructed in 1935) with a new 81,970 square foot state-of-the-art facility to meet academic needs and instructional objectives in the liberal arts.
LAC	9	Building O2 - Economic & Workforce Development / Foundation	34,808,202	21,755,126	4,606,968	8,446,108	34,808,202			This building was purchased by the District after it was originally constructed by a private developer. Since the building was not constructed in accordance with Division of State Architect (DSA) requirements, the District wishes to make structural improvements to the facility to ensure compliance with codes related to use of the facility as a California community college building.
LAC	10	Building G - Performing Arts	49,495,629	27,497,572	7,764,020	14,234,037	21,963,647	15,000,000	12,531,982	Construction of this new Performing Arts Building replaces the existing Buildings G and H. These two buildings are outdated and no longer provide adequate instructional support for music and theatre arts. The new building addresses facility needs associated with these programs by providing modern instructional classrooms, private music practice rooms and performance areas.
LAC	11	Building K - Art	25,719,838	16,074,899	3,404,096	6,240,843	24,028,628		1,691,210	The Art Building was constructed in 1952, and except for some minor renovation work, has never undergone a major remodel. This project represents a complete renovation and modernization of the facility, including building systems, ADA compliance and general refurbishment of the existing structure.
LAC	12	Building R - Primary Gymnasium	60,098,454	37,561,534	7,954,207	14,582,713	59,933,087		165,367	The Building R Primary Gymnasium was constructed in 1952 and requires a significant renovation to address structural/seismic code compliance, ADA access, new HVAC systems and a general modernization of the facility.

LBCCD 2041 FACILITIES MASTER PLAN - PROPOSED LOCAL BUDGET / FUNDING SOURCES / PROJECT DESCRIPTIONS

4/7/16

PROPOSED PROJECTS			Estimated Total Project Cost (includes escalation)	Construction Cost	Contingencies (Construction, Design & Proj Contingencies)	All Other	Proposed Local Budget	Potential State Funding	Measure E 2008 Bond Fund	PROJECT DESCRIPTIONS
LAC	13	Building Q - Secondary Gymnasium	24,735,191	15,459,494	3,273,775	6,001,922	24,426,950		308,241	The Building Q Secondary Gymnasium was constructed in 1952 and requires a significant renovation to address instructional space and training needs, structural/seismic code compliance, ADA access, fire-life safety improvements, HVAC upgrades and aesthetic improvements to modernize the facility.
LAC	14	Building B - Classroom	37,334,400	23,334,000	4,941,318	9,059,082	30,834,400	6,500,000		This project represents a comprehensive renovation of the existing Building B, which was constructed in 1971. Scope of work includes creation of large lecture halls, electrical power upgrades, improved lighting, conversion of some general classrooms into lab functions and an overall modernization of the facility.
LAC	15	Building F - Demolish Family/Consumer Education	3,720,600	2,325,375	492,432	902,793	2,720,600		1,000,000	Building F was constructed in 1953 and it is not cost effective to renovate this facility to meet today's educational standards. In addition, future construction of the adjacent Performing Arts Building and/or College Center requires removal to meet current fire codes.
LAC	16	Building O1 - IITS / Warehouse	26,463,640	16,539,775	3,502,541	6,421,324	26,463,640			This building was originally constructed by a private developer and subsequently purchased by the District. However, it does not comply with requirements noted in the California Education Code for comprehensive use as a community college facility. As a result, this project shall make structural improvements to obtain DSA certification for seismic safety.
LAC	17	Building S - Stadium	88,812,000	63,437,143	8,955,832	16,419,025	85,751,659		3,060,341	The stadium at LAC is an asset of both the college as well as the community. The overall condition of this aging facility requires a number of improvements to ensure disabled person access, correct mechanical system deficiencies, and an engineering analysis of the structure to evaluate the potential need for structural/seismic upgrades.
LAC	18	Building CDC - Child Development Center	21,022,354	13,138,971	2,782,370	5,101,013	21,022,354			This project is the new construction of a replacement Child Development Center facility for this off-campus program. The new facility is about 25% larger than the existing facility and provides a modern facility to support the college's Child Development Program and meet the needs for training of teachers and child development professionals.
		Total:	**574,519,341**	**363,567,036**	**74,453,754**	**136,498,551**	**411,102,514**	**42,101,755**	**121,315,072**	

BUILDING D - SCIENCE

The LAC Science Building (Bldg. D) is an 81,132 gross square foot, 3 story facility. It was constructed in 1973 and due to age and the need for improved technology and academic functionality, portions of the building require renovation. This project renovates 16,000 square feet of the facility with a scope of work as follows: 1. Improve classroom learning environments for anatomy, allied health, diagnostic medical imaging, medical assisting, and physiology with modern technology and functionality; 2. Relocate electrical systems to the ground floor for improved maintenance abilities; 3. Provide new fiber data backbone into the building; 4. Upgrade both elevators to be ADA compliant; and 5. Enhance interior building signage.

SIGNIFICANCE: Renovation of Building D makes major improvements to the facility to better meet the academic needs associated with changes in technology and instructional methodologies of the science curriculum. These changes are imperative to meet educational objectives and better prepare students in the sciences.

PROJECT TYPE: Renovation.

ESTIMATED COST (includes escalation): $12,288,103

SCHEDULE: The approximate construction schedule for this project is noted on item 1 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING P – LANGUAGE ARTS

Project involves the comprehensive renovation of this 16,016 gross square foot facility that was constructed in 1935. The primary objective of this project is to upgrade Building P's functional building systems. Scope of work includes upgrading and/or replacement of the electrical power systems, HVAC, plumbing, storm drainage, fire alarm and telecommunication systems.

The renovation will also include changes to enhance and improve the academic teaching spaces to include enlargement and modernization of classrooms as well as updating the interior building finishes.

SIGNIFICANCE: Renovation of this building provides a significantly improved learning environment and building functionality to better serve the English and Journalism Departments.

PROJECT TYPE: Renovation.

ESTIMATED COST (includes escalation): $8,670,713

SCHEDULE: The approximate construction schedule for this project is noted on item 2 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING J - AUDITORIUM

The scope of work for this project involves the complete renovation of this 37,878 gross square foot auditorium building that was built in 1956. The project will include adding 14,119 gross square feet in the North West corner as a second floor addition to accommodate, dance, theater classes, storage and offices. In addition, the project will include the installation of air conditioning systems as well as general refurbishment of the facility to improve electrical power systems, address plumbing issues, provide enhanced telecommunication capability, upgrade lighting and make aesthetic improvements to this aging facility. ADA compliance items to be updated will include a new elevator for access to the basement area and second floor. In addition, the auditorium and lobby space will have a fire suppression system installed along with a voice annunciated fire alarm system.

SIGNIFICANCE: The improvements and renovation of this building shall accommodate the future needs of such programs as dance, music and drama for both instruction as well as performance. Besides facility changes to meet academic programmatic needs, the renovation addresses major building system upgrades and fire, life-safety issues related to such high occupancy areas as the 900 seat auditorium.

PROJECT TYPE: Renovation.

ESTIMATED COST (includes escalation): $24,629,548

SCHEDULE: The approximate construction schedule for this project is noted on item 3 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

OUTDOOR KINESIOLOGY LABS

This project is a renovation of the physical education outdoor playing fields to better accommodate instructional needs as well as intercollegiate athletics. The renovation is also necessary due to age deterioration of the fields. Scope of work may include the installation of artificial turf on some fields, upgrading of storage facilities, improved field lights, ADA compliance, scoreboards, bleachers and installation of water saving irrigation systems.

SIGNIFICANCE: Renovation and upgrading of the outdoor fields will provide enhanced and modernized labs to meet the long terms needs of the physical education programs.

PROJECT TYPE: Renovation.

ESTIMATED COST (includes escalation): $16,390,500

SCHEDULE: The approximate construction schedule for this project is noted on item 4 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

WALKWAYS AND WAYFINDING

The scope of work associated with this project includes a number of elements associated with improvements to the LAC campus as follows: 1. New and revised walkways throughout the campus to allow for better pedestrian access and circulation; and 2. Development and installation of a uniform signage program to allow for more efficient wayfinding and facility identification.

SIGNIFICANCE: This project represents an effort to allow students, staff and visitors to circulate freely and efficiently throughout the campus and provides for easy identification of buildings and services. The walkway and wayfinding program will comply with ADA requirements.

PROJECT TYPE: Renovation.

ESTIMATED COST (including escalation): $4,995,200

SCHEDULE: The approximate construction schedule for this project is noted on item 5 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: The specific location of this project is not depicted on the 2041 Facilities Master Plan site map since the work will occur throughout the campus.

BUILDING W- AQUATIC CENTER

Due to its age, the existing swimming pool has significant and extensive repair issues that cannot be cost effectively addressed. The Aquatic Center project involves construction of a new 50 meter x 25 yd. pool. Scope of work also includes construction of a support building of approximately 12,000 square feet to provide showers, locker rooms, storage, pool equipment and office space. The new pool will be constructed along Carson Street to better accommodate its increased space needs.

SIGNIFICANCE: The Aquatic Center project addresses the major and costly repair problems associated with the existing pool and shall provide a modern, state- of- the - art complex to meet the needs of the instructional Kinesiology program as well as intercollegiate athletics. This project also provides much needed shower and locker room facilities when the existing gyms are closed for renovation at a later phase of the 2041 Master Plan Schedule.

PROJECT TYPE: New Construction.

ESTIMATED COST (includes escalation): $28,137,500

SCHEDULE: The approximate construction schedule for this project is noted on item 6 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING E - COLLEGE CENTER

The College Center is a two story, 50,276 gross square foot building that was constructed in 1968. The facility houses the campus food service, kitchen, dining area, and offices. The offices house several support programs such as student government offices, veteran's center, international students and a reading/writing success center. Other than a minor cosmetic renovation in 1991, the building is overdue for a major renovation. This project represents a comprehensive effort to update the operational building systems and make minor interior improvements for more efficient use of the facility.

More specific scope of work includes a comprehensive renovation, replacement or upgrade of building operational systems including: electrical distribution along with replacement of the original oil control switch, plumbing and fixtures, HVAC system, fire alarm and overhead sprinkler system, and lighting. Any upgrades related to ADA compliance and structural safety shall also be addressed as well as aesthetic improvements to modernize the facility.

SIGNIFICANCE: The significance of this project is that it completely renovates a primary campus building thereby bringing it up to date in terms of applicable safety codes and building systems. The renovated building allows the diverse functions that utilize this facility to more efficiently serve students in a modernized up-to-date environment.

PROJECT TYPE: Renovation.

ESTIMATED COST (includes escalation): $37,100,671

SCHEDULE: The approximate construction schedule for this project is noted on item 7 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING M- LIBERAL ARTS

This project will replace two buildings (Buildings M &N) constructed in 1935. The current facilities are aging and in need of significant repair. The heating and cooling systems are outdated and the electrical systems are insufficient to meet current demands for technology and those teaching methodologies supported by these new technologies. ADA compliant access has also been a problem with Building M that requires attention.

The proposed project is construction of an 81,970 gross square foot building to provide new classrooms, laboratory facilities, a modern technology center for the Computer Information Systems and Business Technology Departments, faculty offices, and support areas for general education instruction. Included within the new building will be meeting/conference areas as well as some larger classrooms to support educational objectives.

A Final Project Proposal (FPP) has been submitted and approved by the California Community Colleges Board of Governors, for this project. Assuming a statewide higher education bond is approved by California voters, State funding of nearly $21 million may be provided to help offset the construction cost of this project.

SIGNIFICANCE: This project replaces the existing M & N Buildings at LAC, which were constructed in 1935 and can no longer meet the college's educational and facility master plans. The new Liberal Arts Building provides for a state-of-the-art educational facility that will address instructional plans and objectives well into the 21st century for such academic disciplines as Language Arts, Foreign Languages, Speech Communications, Consumer Education, Computer Information Systems and Business Technology.

PROJECT TYPE: New Construction.

ESTIMATED COST (includes escalation): $70,096,798

SCHEDULE: The approximate construction schedule for this project is noted on item 8 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING O2- ECONOMIC & WORK FORCE DEVELOPMENT/FOUNDATION

The O2 Building at the LAC was constructed in 2001 by a private developer under the California Uniform Building Code. In 2010, the District purchased the building as well as the property upon which it was constructed. As a result, the 51,302 gross square foot building became part of the LAC site. Since the acquisition, the facility has been utilized for non-instructional support services such as Economic & Work Force Development and the Foundation.

In order to meet requirements of the California Field Act and the State Education Code, it is necessary for the District to obtain certification of this building by the Division of State Architect. This process will require structural enhancements to obtain DSA approval.

In addition to the DSA certification, the scope of work for this project shall include the conversion of existing warehouse space into offices and related support space.

SIGNIFICANCE: The significance of this project is that it brings the facility into full DSA structural code compliance for California community colleges and allows the building to be utilized for any function, including instructional uses.

PROJECT TYPE: Renovation.

ESTIMATED COST (includes escalation): $34,808,202

SCHEDULE: The approximate construction schedule for this project is noted on item 9 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING G- PERFORMING ARTS

The new Performing Arts Building is a 42,857 gross square foot facility that replaces the existing and outmoded Music (Bldg. G) and Theatre Arts (Bldg. H) at the LAC. The scope of work for this project includes a building with instructional classrooms, specialized labs, private music practice rooms, faculty/staff offices, storage and support spaces. It also provides for smaller scale performance areas and the campus radio station.

SIGNIFICANCE: This project replaces older buildings that are unable to meet current educational needs. The new Performing Arts Building provides for a larger state-of-the-art facility that will meet the long term curricular requirements of the music and theatre departments.

PROJECT TYPE: New Construction.

ESTIMATED COST (includes escalation): $49,495,629

SCHEDULE: The approximate construction schedule for this project is noted on item 10 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING K- ART

The Art building was constructed in 1952 and is a 29,479 gross square foot, one story building. Except for some minor renovation work in 1995, the building has never undergone a major remodel. This project represents a complete renovation and modernization of the facility to include replacement of the HVAC systems, electrical power upgrades, improved data communication wiring, roof replacement, painting, ADA compliance and general refurbishment of the existing structure.

SIGNIFICANCE: In order to continue use of this facility and meet the needs of modern technologies and curriculum, the building requires a comprehensive renovation. Through the renovation process, the life of this building will be extended for many years and continue to serve the instructional needs of the campus and the students it serves.

PROJECT TYPE: Renovation.

ESTIMATED COST (includes escalation): $25,719,838

SCHEDULE: The approximate construction schedule for this project is noted on item 11 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING R - PRIMARY GYMNASIUM

Building R was constructed in 1952 and is a two story building consisting of 78,053 gross square feet. There was a relatively minor renovation of the facility in 1963 but it has never undergone a comprehensive remodel or major renovation. The building consists of a large gym, offices, and shower/locker facilities.

The renovation of this facility shall include structural/seismic code enhancements, changes to provide for ADA access, new HVAC systems, and various improvements to modernize the aesthetics of the building.

SIGNIFICANCE: Due to the age of this facility and the type of construction, the structural enhancements are essential to ensure the safety of persons utilizing the gymnasium as well as to ensure the buildings long term use in the event of potential seismic activity. In addition, by addressing the issues of access, the building will serve the needs of disabled persons and allow for full compliance with the Americans with Disabilities Act (ADA).

PROJECT TYPE: Renovation.

ESTIMATED COST (includes escalation): $60,098,454

SCHEDULE: The approximate construction schedule for this project is noted on item 12 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING Q - SECONDARY GYMNASIUM

Building Q is a one story building constructed in 1952 and consists of 30,270 gross square feet. Since construction, except for minor repairs and ongoing or scheduled maintenance, the building has never undergone a major renovation.

This project is very similar in scope to the proposed work for the primary Gymnasium (Building R). The work will include addressing issues related to instructional space needs, training areas, structural/seismic upgrades, ADA compliance, fire life-safety improvements, lighting, HVAC system upgrades and aesthetic improvements.

SIGNIFICANCE: This renovation project is essential in order to insure seismic safety of the facility as well as the safety of all persons utilizing the building. In addition, by completing various physical changes to the facility, full accessibility compliance will be realized.

PROJECT TYPE: Renovation.

ESTIMATED COST (includes escalation): $24,735,191

SCHEDULE: The approximate construction schedule for this project is noted on item 13 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING B- CLASSROOM

This project is a comprehensive renovation of the existing Building B. The building is a three story, 44,357 gross square foot facility that was constructed in 1971. Except for the usual scheduled maintenance projects including an HVAC upgrade in 2010, there has been no major upgrade of this facility. Because of the nature of the programs housed in this facility as well as its age, the building is definitely due for a significant renovation.

Scope of work shall include electrical power upgrades, data and communication improvements, conversion of some general classrooms to lab functions, creation of large lecture halls, better lighting and general modernization of the facility in terms of utility and aesthetics.

SIGNIFICANCE: The renovated building will better meet the educational objectives of programs planned for this facility including Anthropology, Family and Consumer Education as well as several others. In addition, master planned facilities such as the QQ and MM Buildings at PCC will allow the Electrical and Drafting/Auto Cad programs to be relocated from Building B to these new facilities.

PROJECT TYPE: Renovation.

ESTIMATED COST (includes escalation): $37,334,400

SCHEDULE: The approximate construction schedule for this project is noted on item 14 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING F- FAMILY/CONSUMER EDUCATION

This project will demolish the existing one story 15,387 gross square foot Family/ Consumer Education Building that was constructed in 1952. Because of the age of this facility it is outmoded in terms of meeting the long term program objectives of the Family and Consumer Education Department. It is simply not cost effective to renovate this facility to meet modern standards. In addition, future construction of the adjacent Performing Arts Building and/or the College Center will require removal of this building to meet current fire codes.

The Family and Consumer Education programs will be relocated to the newly renovated Building B- Classroom.

SIGNIFICANCE: This project not only eliminates an older building that has a very limited lifespan in terms of meeting educational objectives but it also provides a construction site for a new building that is scheduled in the District's 2041 Facilities Master Plan.

PROJECT TYPE: Demolition.

ESTIMATED COST (includes escalation): $3,720,600

SCHEDULE: The approximate construction schedule for this project is noted on item 15 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING O1 – IITS/WAREHOUSE

The O1 Building at the LAC was constructed in 2001 by a private developer under the California Uniform Building Code. In 2010, the District purchased the building as well as the property upon which it was constructed. As a result, the 26,560 gross square foot building became part of the LAC site. Since acquisition, the facility has been utilized for the Instructional and Information Technology Services (IITS) Department and the warehouse.

In order to meet requirements of the California Field Act and the State Education Code, it is necessary for the District to obtain certification of this building by the Division of State Architect (DSA). This process shall require structural enhancements in order to obtain DSA approval.

The scope of work shall also include minor construction work within the facility to improve space utilization.

SIGNIFICANCE: The significance of this project is that it brings the facility into full DSA structural compliance for California community colleges and allows the building to be utilized for any function, including instructional uses.

PROJECT TYPE: Renovation.

ESTIMATED COST (includes escalation): $26,463,640

SCHEDULE: The approximate construction schedule for this project is noted on item 16 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING S - STADIUM

This important community sports facility, which was constructed in 1949, requires major renovation to address issues related to ADA access, water intrusion and structural upgrading of the facility to meet Division of State Architect (DSA) seismic requirements.

Prior to commencement of the project, a comprehensive engineering analysis of the structure and mechanical systems shall be required.

SIGNIFICANCE: Due to the nature of this facility as a stadium it is often occupied by hundreds of spectators and participants. As the facility approaches 70 years of age it is imperative for life-safety that improvements be made to this aging stadium in order to address potential structural issues as well as disabled person access required under the ADA.

PROJECT TYPE: Renovation.

ESTIMATED COST (includes escalation): $88,812,000

SCHEDULE: The approximate construction schedule for this project is noted on item 17 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING CDC- CHILD DEVELOPMENT CENTER

The existing Child Development Center is located off-site but is part of the LAC. It consists of two (2) one story building of approximately 9,042 gross square feet. The facility was constructed in two phases, with the vast majority of the construction taking place in 1971.

This project is the new construction of a replacement for the existing Child Development Center. The new facility will not be constructed until approximately 2037, as noted in the 2041 Facilities Master Plan. New construction will be necessary at that time because the existing structures will be over 65 years old when construction commences.

The proposed new project is approximately 12,000 gross square feet, or roughly 25% larger than the existing facility. Elements of the new building will include children's classrooms, food preparation and service, staff and children's restrooms, offices and support/storage spaces. In addition, construction will include a comprehensive outdoor area for exercise and creative play.

SIGNIFICANCE: This project is an essential educational program because it is the "laboratory" setting for the college's Child Development Program. Construction of the new facility will ensure that future teachers and child development professionals are provided with an appropriate and modern learning environment.

PROJECT TYPE: Construction.

ESTIMATED COST (includes escalation): $21,022,354

SCHEDULE: The approximate construction schedule for this project is noted on item 18 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

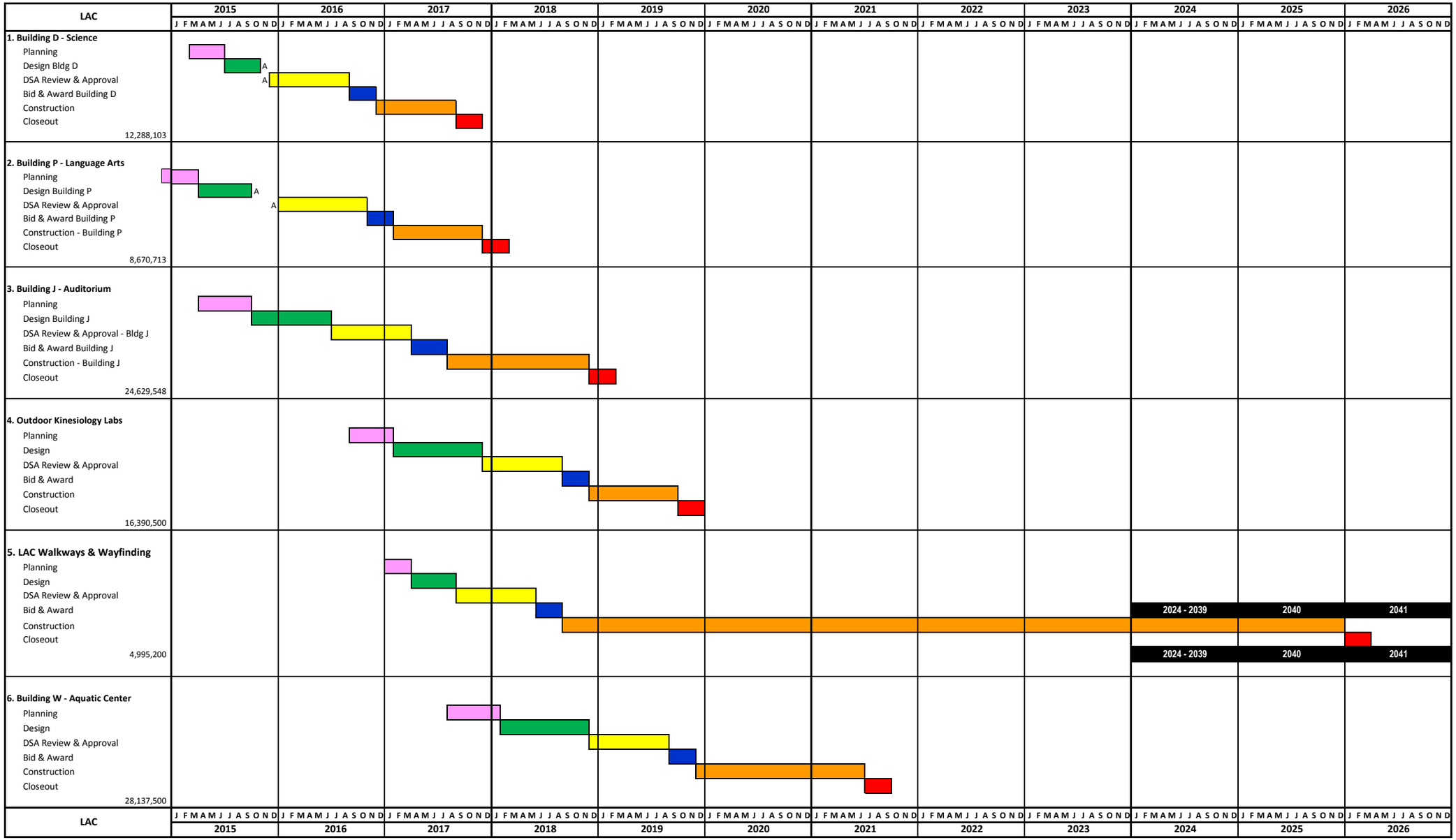
LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

LBCCD 2041 FACILITIES MASTER PLAN SCHEDULE

(WITH ESTIMATED $ VALUES INDICATED FOR EACH PROJECT)

FPPS FACILITIES PLANNING & PROGRAM SERVICES, INC. "Serving California Community Colleges"

4/7/16



LBCCD 2041 FACILITIES MASTER PLAN SCHEDULE

(WITH ESTIMATED $ VALUES INDICATED FOR EACH PROJECT)

FPPS FACILITIES PLANNING & PROGRAM SERVICES, INC. "Serving California Community Colleges"

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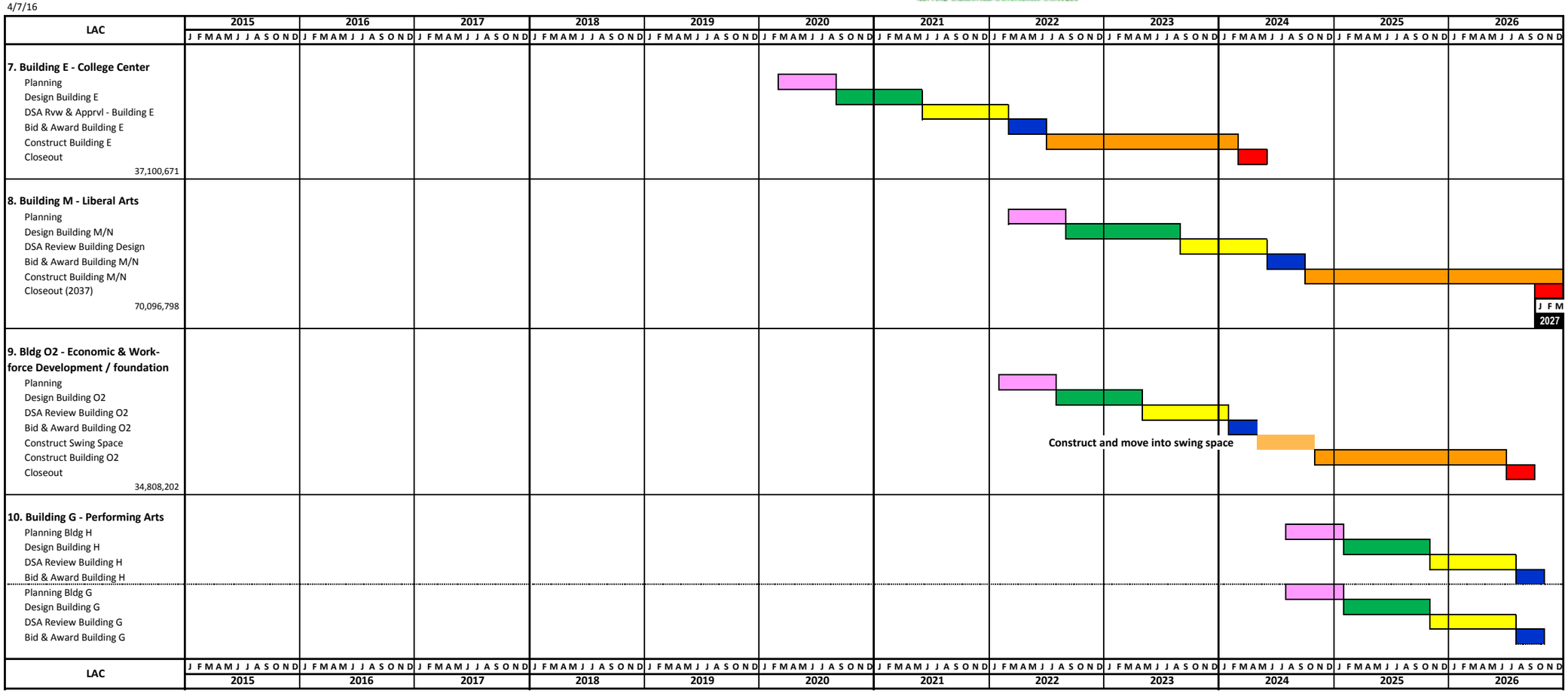
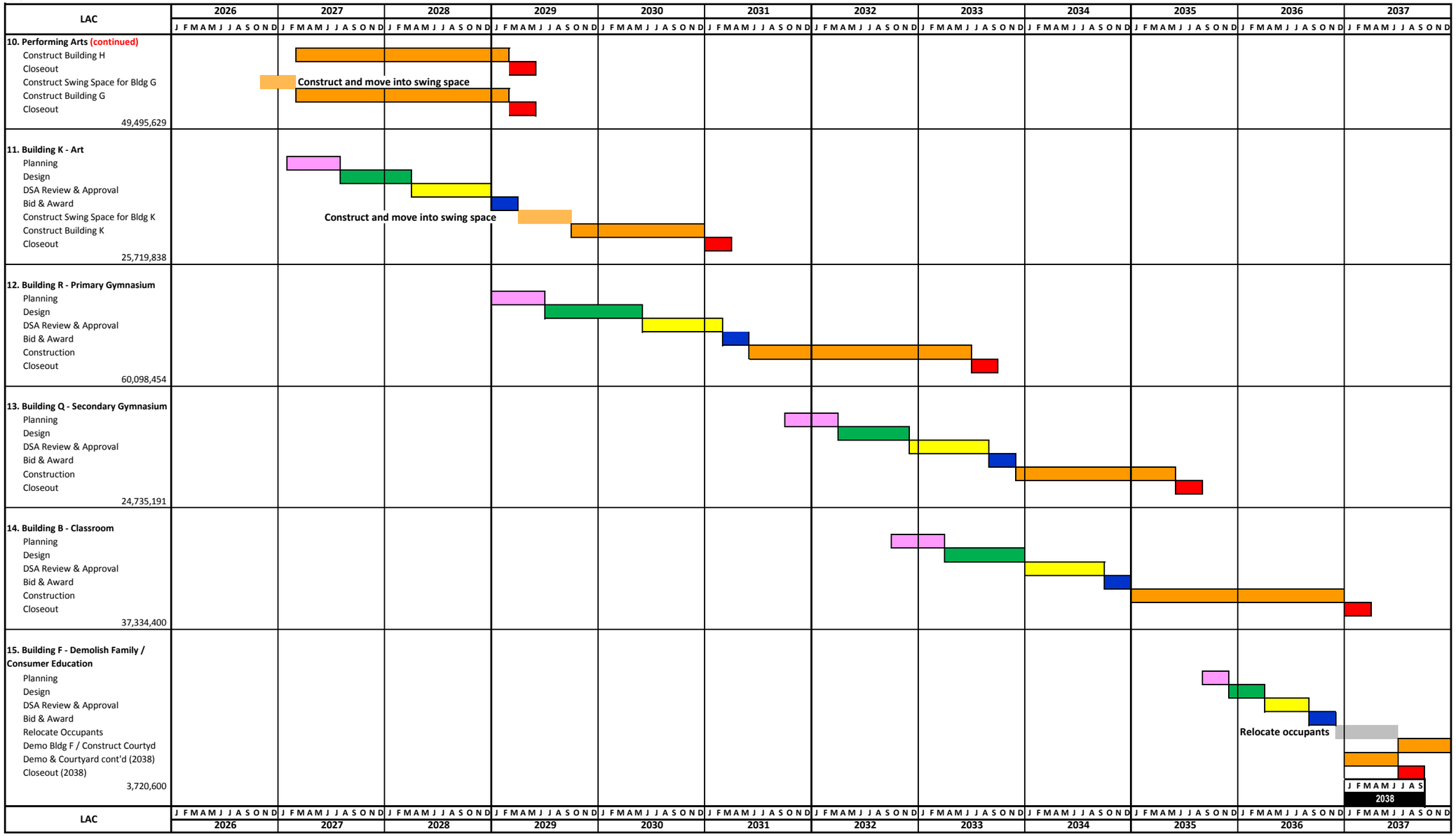


LBCCD 2041 FACILITIES MASTER PLAN SCHEDULE

(WITH ESTIMATED $ VALUES INDICATED FOR EACH PROJECT)

FPPS FACILITIES PLANNING & PROGRAM SERVICES, INC. "Serving California Community Colleges"

4/7/16

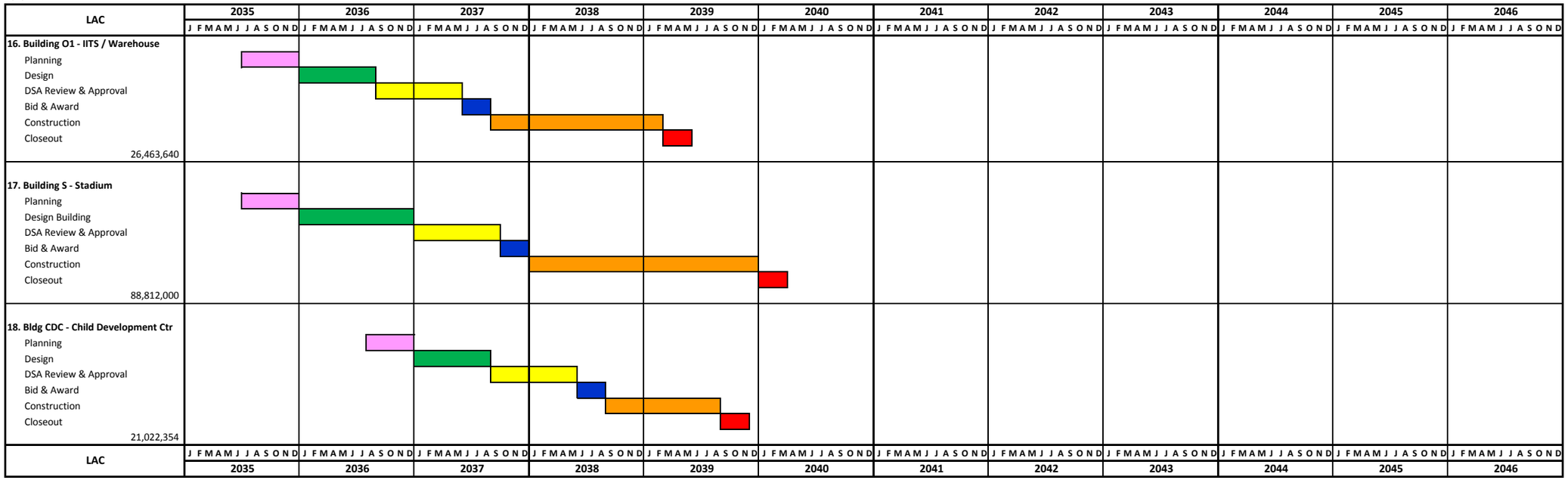


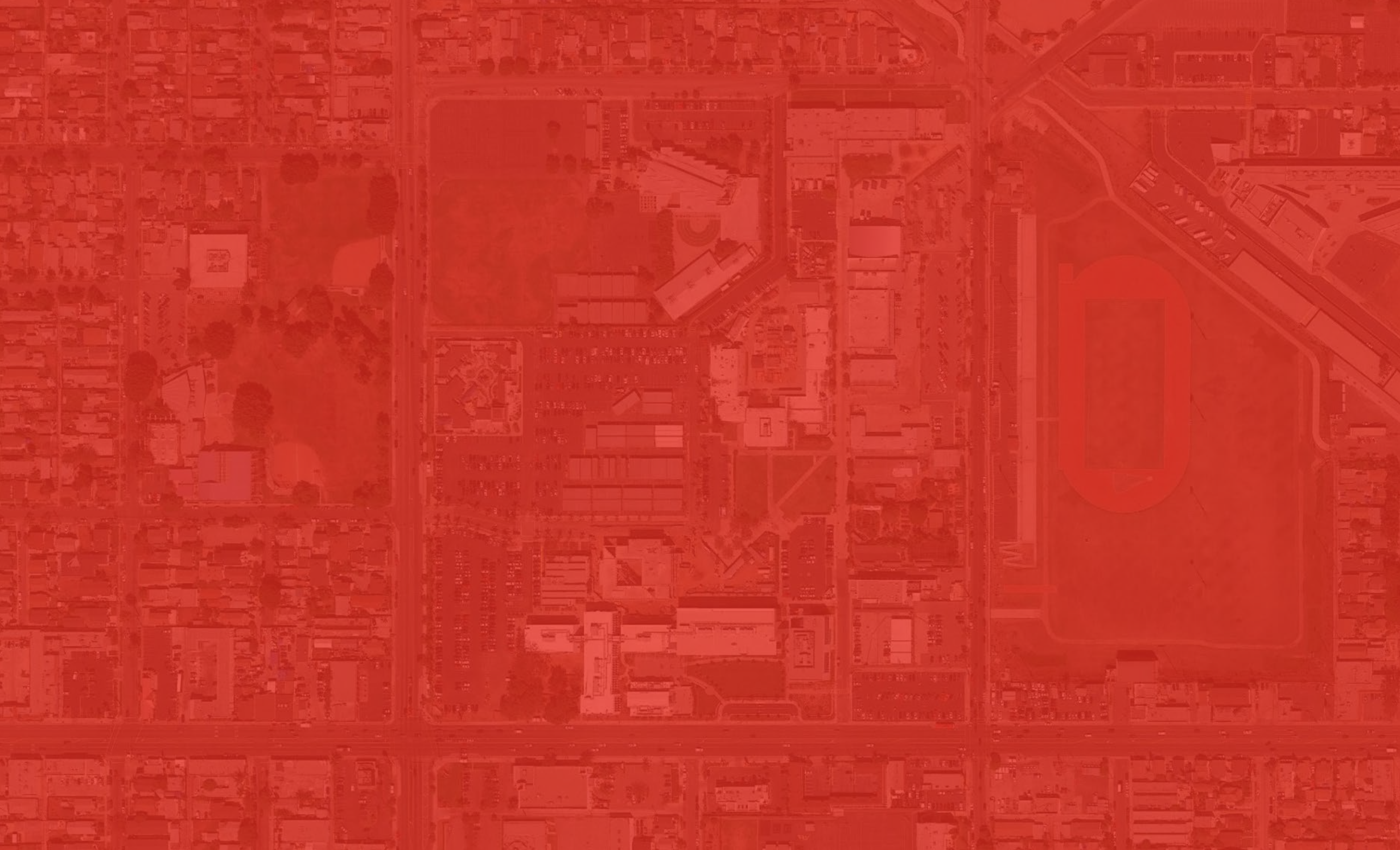
LBCCD 2041 FACILITIES MASTER PLAN SCHEDULE

(WITH ESTIMATED $ VALUES INDICATED FOR EACH PROJECT)

FPPS FACILITIES PLANNING & PROGRAM SERVICES, INC. "Serving California Community Colleges"

4/7/16





03

PACIFIC COAST CAMPUS

2041 FACILITIES MASTER PLAN

The 2041 Facilities Master Plan for the Pacific Coast Campus has been developed to support the Long Beach Community College District vision, mission and values.

The graphic plan on the following page highlights a series of recommendations for the long term development of the campus.

The Building Key to the right pertains to the buildings shown on the following page.

BUILDING KEY

EXISTING FACILITIES

- (AA) MULTIDISCIPLINARY / ADMINISTRATION
- (BB) MULTIDISCIPLINARY
- (CC) KINESIOLOGY
- (DD) MULTIDISCIPLINARY
- (EE) STUDENT CENTER / MULTIDISCIPLINARY
- (GG) STUDENT SUPPORT SERVICES / CAFETERIA
- (HH) CHILD DEVELOPMENT CENTER
- (II) SHEET METAL / WELDING
- (JJ) ADVANCED TRANSPORTATION / AUTOMOTIVE TECHNOLOGY
- (KK) GREENHOUSE
- (LL) LIBRARY / LEARNING RESOURCE CENTER
- (NN) HORTICULTURE
- (YY) FACILITIES / CENTRAL PLANT

RENOVATIONS

- (MM) CONSTRUCTION TRADES
- (RR) ELECTRICAL

DEMOLITION

- (ff) CLASSROOM / DYER HALL / SENIOR CENTER
- (uu) FOSTER KINSHIP CARE

NEW CONSTRUCTION

- (QQ) ELECTRICAL / DYER HALL / LIFETIME LEARNING
- (OO) CLASSROOM
- (P2) PARKING STRUCTURE


Walnut Ave
E 20th St
E 19th St
E Pacific Coast Hwy
Orange Ave
II
JJ
RR
QQ
KK
NN
YY
(uu)
P2
MM
LL
EE
OO
GG
DD
CC
AA
(ff)
BB
HH
2041 FACILITIES MASTER PLAN
PROPERTY LINE
DEMOLITION
EXISTING FACILITIES
RENOVATIONS
NEW CONSTRUCTION
0 FEET 62.5 125 250

LBCCD 2041 FACILITIES MASTER PLAN - PROPOSED LOCAL BUDGET / FUNDING SOURCES / PROJECT DESCRIPTIONS

4/7/16

PROPOSED PROJECTS			Estimated Total Project Cost (includes escalation)	Construction Cost	Contingencies (Construction, Design & Proj Contingencies)	All Other	Proposed Local Budget	Potential State Funding	Measure E 2008 Bond Fund	PROJECT DESCRIPTIONS
PCC	19	Buildings QQ/RR - Electrical / Dyer Hall / Lifetime Learning	20,302,962	12,689,351	2,687,157	4,926,454	0		20,302,962	This project involves a comprehensive renovation of the existing RR Building as well as construction of a new 24,839 square foot Building QQ. The new Building QQ will house the Lifetime Learning Center, Electrical Department and Dyer Hall. In addition, there is extensive site work development for utilization as a parking lot and work yard for solar panels.
PCC	20	Building MM - Construction Trades Phase 1	17,665,877	11,041,173	2,338,131	4,286,573	3,009,155	6,858,000	7,798,722	The scope of work associated with this project involves a major renovation of the existing 13,288 gross square foot facility (Bldg. MM), as well as construction of a new 4,531 gross square foot building addition. The California Community College Chancellor's Office has approved a Final Project Proposal for this project, providing approximately $6.8 million in State funding.
PCC	21	Building P2 - Parking Structure	21,493,800	15,352,714	2,167,442	3,973,644	21,493,800			Due to very limited surface parking options, this project constructs a new multi-story parking structure at PCC to meet student/staff parking demands. It is planned to accommodate 500-600 vehicles and have solar panels on top.
PCC	22	Building MM - Construction Trades Phase 2	14,417,237	9,010,773	1,908,164	3,498,300	2,343,511	9,706,535	2,367,191	The Construction Trades Phase 2 project is construction of a new 15,749 gross square foot addition to the MM Building. An Initial Project Proposal (IPP) has been submitted and approved by California Community College Chancellor's Office. However, the project is being reviewed by the District to determine the next step in the planned development of this project. This review is necessitated by educational programmatic needs as well as overall facility condition.
PCC	23	Building OO - Classroom	118,070,400	73,794,000	15,626,965	28,649,435	98,070,400	20,000,000		The Classroom Building project is a major instructional facility that involves the construction of a new 150,000 gross square foot building. The facility shall be multi-disciplinary in nature and will include a very large state-of-the-art computer lab, classroom facilities, lecture rooms, meeting areas as well as faculty offices and support space.
PCC	24	Building FF - Demolish Fine Arts / Senior Center	2,533,600	1,583,500	335,329	614,771	1,428,410		1,105,190	Building FF was constructed in 1936 and due to its age and overall condition, requires that it be demolished. The programs housed in this facility shall be relocated to the QQ Building which is being constructed earlier in the 2041 Facilities Master Plan. The site will be utilized for a revamped vehicle entry and drop-off point.
PCC	25	PCC Walkways & Wayfinding	2,572,571	1,607,857	340,487	624,227	2,239,613		332,958	The scope of work for this project provides for the construction and/or renovation of pedestrian walkways throughout the campus and development of a uniform signage program to allow for more efficient wayfinding, easier access and improved building identification.
		Total:	**197,056,447**	**125,079,368**	**25,403,675**	**46,573,404**	**128,584,889**	**36,564,535**	**31,907,023**	

BUILDINGS QQ/RR – ELECTRICAL/ DYER HALL/ LIFETIME LEARNING

The scope of work for this project consists of the following: 1. Construction of a new two story building of approximately 24,839 square feet that will house the Lifetime Learning Center, the Electrical Department and Dyer Hall (Building QQ); 2. Renovation of existing one story building of approximately 6,104 square feet (Building RR); and 3. Approximately 98,000 square feet of site work including new landscape and hardscape, a new parking lot, a new work yard and installation of new utilities.

SIGNIFICANCE: This project provides for an improved facility to house the Electrical Department, Lifetime Learning Center and Dyer Hall, thereby meeting the long term needs of these programs. More specifically, the project promotes collaboration between such fields as alternate fuels, electrical department and horticulture. It also provides dedicated space for robotics and automation equipment as well as a work yard for solar panels.

PROJECT TYPE: New Construction and Renovation.

ESTIMATED COST (includes escalation): $20,302,962

SCHEDULE: The approximate construction schedule for this project is noted on item 19 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING MM - CONSTRUCTION TRADES (PHASE 1)

This project involves a major renovation of the existing 13,288 gross square foot facility, which was constructed in 1957, as well as construction of a new 4,531 gross square foot addition to the building. A California Chancellor's Office Final Project Proposal (FPP) has been approved for this project. However, State funding is contingent upon voter approval of a Community College Construction Bond. Renovation includes upgrading of the facility including electrical systems, data communication systems, ADA access compliance, HVAC system replacement, lighting, plumbing, and aesthetic improvements.

SIGNIFICANCE: Renovation of the Construction Trades Building upgrades the facility and its operating systems. It adds significant life to this facility and corrects a number of deficiencies that will improve its use in the training of students in the areas of air conditioning, refrigeration and the construction trades.

PROJECT TYPE: Renovation and New Construction.

ESTIMATED COST (includes escalation): $17,665,877

SCHEDULE: The approximate construction schedule for this project is noted on item 20 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING P2- PARKING STRUCTURE

The intent of this project is to construct a new multi-story parking structure at PCC to serve approximately 500-600 vehicles. This is the only viable alternative to meeting vehicular parking demands due to limited land availability.

SIGNIFICANCE: The new parking structure shall address the long term student and staff parking needs associated with the construction of a number of new instructional buildings at PCC, and make progress towards better sustainability by installing solar panels on top of the structure.

PROJECT TYPE: New Construction.

ESTIMATED COST (includes escalation): $21,493,800

SCHEDULE: The approximate construction schedule for this project is noted on item 21 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING MM - CONSTRUCTION TRADES (PHASE 2)

This project involves the construction of a 15,749 gross square feet addition to the existing structure. The new construction will provide space for the Drafting and Architecture Programs.

An Initial Project Proposal (IPP) has been approved by the California Community College Chancellor's Office. The next step will be to submit a Final Project Proposal (FPP) for this project which, if approved, would make the project eligible for State capital outlay funding. However, the project is undergoing a review to determine eligibility for new construction. If it does not qualify, the facility will be renovated.

SIGNIFICANCE: Whether this project constructs a new facility or renovates the existing space, the result will be a modern up-to-date facility to meet the instructional requirements for drafting and Architectural Programs.

PROJECT TYPE: Renovation.

ESTIMATED COST (includes escalation): $14,417,237

SCHEDULE: The approximate construction schedule for this project is noted on item 22 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING OO - CLASSROOM

The Classroom Building project involves the new construction of a large 150,000 gross square foot instructional building. The building shall be multi-disciplinary in nature and will include classroom facilities, large lecture rooms, meeting areas, extensive state-of-the-art computer labs, as well as faculty offices and support space.

SIGNIFICANCE: This project represents an important academic component to the campus and provides long term instructional space and educational opportunities for the students at the Pacific Coast Campus. It also allows for a more comprehensive curriculum so that students at PCC can take the majority of their required classes at this single location.

PROJECT TYPE: New Construction.

ESTIMATED COST (includes escalation): $118,070,400

SCHEDULE: The approximate construction schedule for this project is noted on item 23 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

BUILDING FF - DEMO FINE ARTS/SENIOR CENTER

Building FF was constructed in 1936 and is 10,640 gross square feet in size. Due to the age of this facility and overall condition, it is not cost effective to renovate the building to meet future educational standards and program needs. Therefore, this project is demolition of the existing Building FF.

SIGNIFICANCE: The existing programs housed in this facility (Lifetime Learning Center and Dyer Hall) shall be relocated to the QQ Building which is being constructed earlier in the 2041 Facilities Master Plan. The former Building FF site shall be utilized for a new campus entry including a student drop-off area and vehicular turnabout.

PROJECT TYPE: Demolition.

ESTIMATED COST (includes escalation): $2,533,600

SCHEDULE: The approximate construction schedule for this project is noted on item 24 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location is indicated on the 2041 Facilities Master Plan site map.

WALKWAYS AND WAYFINDING

The scope of work associated with this project includes a number of elements associated with improvements to the PCC campus as follows: 1. New and revised walkways throughout the campus to allow for better pedestrian access and circulation; and 2. Development and installation of a uniform signage program to allow for more efficient wayfinding and facility identification.

SIGNIFICANCE: This project represents an effort to allow students, staff and visitors to circulate freely and efficiently throughout the campus and provides for easy identification of buildings and services. The walkway and wayfinding program will comply with ADA requirements to insure access by disabled persons.

PROJECT TYPE: Renovation.

ESTIMATED COST (includes escalation): $2,572,571

SCHEDULE: The approximate construction schedule for this project is noted on item 25 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

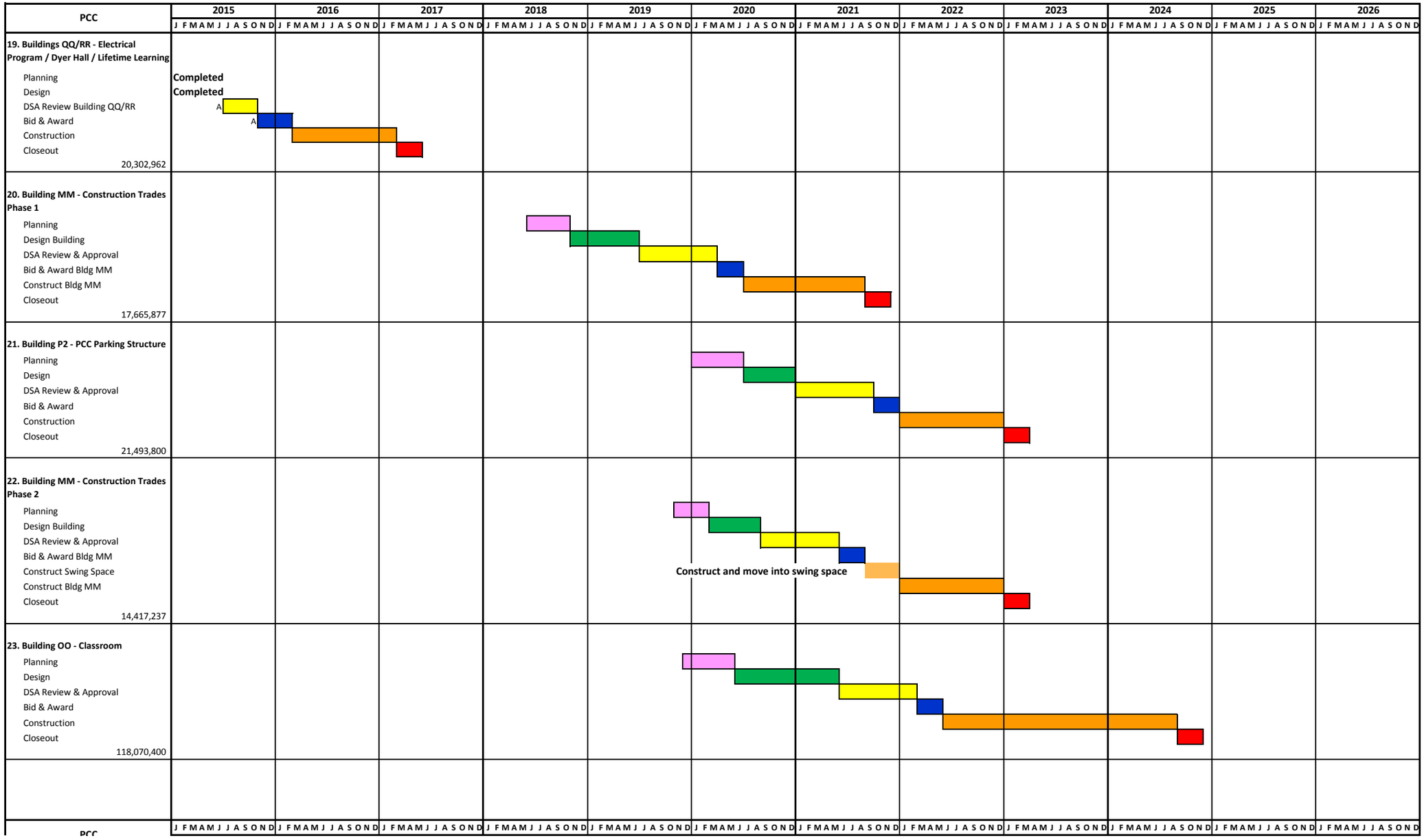
LOCATION: The specific location of this project is not depicted on the 2041 Facilities Master Plan site map since the work shall occur throughout the campus.

LBCCD 2041 FACILITIES MASTER PLAN SCHEDULE

(WITH ESTIMATED $ VALUES INDICATED FOR EACH PROJECT)

FPPS FACILITIES PLANNING & PROGRAM SERVICES, INC. "Serving California Community Colleges"

4/7/16



LBCCD 2041 FACILITIES MASTER PLAN SCHEDULE

(WITH ESTIMATED $ VALUES INDICATED FOR EACH PROJECT)

FPPS FACILITIES PLANNING & PROGRAM SERVICES, INC. "Serving California Community Colleges"

4/7/16

PCC	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D
24. Building FF - Demolish Fine Arts / Senior Center												
Planning												
Design												
DSA Review & Approval												
Bid & Award												
Construction												
Closeout												
2,533,600												
25. PCC Walkways & Wayfinding												
Planning												
Design												
DSA Review & Approval												
Bid & Award										2024 - 2039	2040	2041
Construction												
Closeout												
2,572,571										2024 - 2039	2040	2041
PCC	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026

04

DISTRICT WIDE SERVICES

LBCCD 2041 FACILITIES MASTER PLAN - PROPOSED LOCAL BUDGET / FUNDING SOURCES / PROJECT DESCRIPTIONS

4/7/16

PROPOSED PROJECTS			Estimated Total Project Cost (includes escalation)	Construction Cost	Contingencies (Construction, Design & Proj Contingencies)	All Other	Proposed Local Budget	Potential State Funding	Measure E 2008 Bond Fund	PROJECT DESCRIPTIONS
LAC PCC	26	District Wide Security Monitoring Systems	10,000,000	7,500,000	1,000,000	1,500,000	4,308,743		5,691,257	The Security Systems project installs surveillance cameras at all District facilities in order to improve safety and security for faculty, students, staff and the public. The cameras shall be located to provide coverage in such areas as parking lots, building entries/exits, and other locations for crime prevention and public safety.
LAC PCC	27	Joint Use Facility	27,317,500	17,073,438	3,615,551	6,628,511	27,317,500			This project provides for the construction of a new educational facility for collaborative programs with Long Beach Unified School District and Long Beach State University. The facility shall include classrooms, labs, large lecture spaces, meeting rooms, offices, flexible multi-purpose areas and support spaces. The specific location for this project has not been determined.
LAC PCC	28	Technology Refresh/Replacement	69,558,000	52,168,500	6,955,800	10,433,700	69,558,000			This project involves the long-term improvement, acquisition and replacement of technology driven hardware and equipment, throughout the District. It is essential in order to keep pace with ever changing technology and allow District students to be educated and trained on the most up-to-date equipment.
LAC PCC	29	Enterprise Wide Computer Systems	20,000,000	15,000,000	2,000,000	3,000,000	20,000,000			This project provides for the acquisition of new integrated software for the management of the District's financial resources, human resources and student records.
LAC PCC	30	Landscaping	20,000,000	14,286,000	2,016,000	3,698,000	17,640,834		2,359,166	This project is for the design and installation of landscaping elements at both the LAC and PCC campuses. The scope of work includes landscaping of new areas as well as the renovation of existing areas in order to refresh the plant palette and provide drought resistant plant material for conservation of irrigation water.
LAC PCC	31	Infrastructure Projects	25,000,000	15,625,000	3,310,000	6,065,000	25,000,000			A long term need exists for constantly updating the physical plant's infrastructure. This project shall provide funding during the life of the 2041 Facilities Master Plan for purposes of upgrading and/or replacing various infrastructure elements such as natural gas lines, chilled water lines, hot water lines, electrical distribution systems, and data/communication systems.
LAC PCC	32	Energy / Water Conservation Projects	25,000,000	17,857,500	2,520,000	4,622,500	25,000,000			Due to ever increasing energy rates as well as requirements to reduce water consumption, this project allows the District to take proactive steps to reduce the utilization of these utilities. Various projects shall be funded including such examples as the comprehensive use of reclaimed water, solar power, lighting retrofits, water saving sprinklers/timers and installation of new and developing technologies to conserve energy.
LAC PCC	33	Minor Campus Improvements	30,000,000	21,429,000	3,024,000	5,547,000	29,239,507		760,493	During the implementation of the 2041 Facilities Master Plan, the District will be faced with the need for completing a wide array of smaller projects that do not fall into the categories of capital outlay funding or do not meet the State funded parameters for scheduled maintenance. This project provides the funding vehicle for these smaller projects that may be needed to meet educational and program objectives during the life of the Master Plan.
LAC PCC	34	Surface Parking Improvements	10,000,000	7,143,000	1,008,000	1,849,000	9,454,310		545,690	The scope of work for this project is an ongoing program to maintain or improve the District's surface parking lots at all locations during implementation of the 2041 Facilities Master Plan. Over the next 25 years, all the District's parking lots shall require regular and ongoing maintenance ranging from slurry sealing to replacement. This project protects and also extends the life of the multitude of surface parking lots.
		Total:	**236,875,500**	**168,082,438**	**25,449,351**	**43,343,711**	**227,518,894**		**9,356,606**	

SECURITY SYSTEMS (CAMERAS)

In the interest of student and staff security and safety, this project installs surveillance cameras in parking lots, building entries and exits, and other locations necessary for crime prevention and public safety. The project includes installations at both the LAC and PCC campuses.

SIGNIFICANCE: This project represents a significant commitment to the safety and security of all students, staff, faculty and the public when utilizing District facilities.

PROJECT TYPE: New Equipment and Installation.

ESTIMATED COST (includes escalation): $10,000,000

SCHEDULE: The approximate construction schedule for this project is noted on item 26 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: The specific locations required for this project are not noted on the 2041 Facilities Master Plan site maps since the work is performed throughout each campus.

JOINT USE FACILITY

This project is the construction of an educational facility to provide opportunities for collaborative programs with Long Beach Unified School District and Long Beach State University. The facility shall include classrooms, labs, large lecture spaces, meeting rooms, offices, flexible multi-purpose areas and support spaces. The facility will be designed to address the needs of the District as well as the two collaborative partners.

SIGNIFICANCE: This unique facility will provide important educational opportunities for the students of the Long Beach area as the District creates a model partnership of collaboration between the Long Beach Unified School District (K-12) and Long Beach State University. These opportunities are endless and far reaching as lock step barriers of age and grade levels are replaced with program innovation, educational reform, and learning designed for the future.

PROJECT TYPE: New Construction.

ESTIMATED COST (includes escalation): $27,317,500

SCHEDULE: The approximate construction schedule for this project is noted on item 27 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Project location to be determined.

TECHNOLOGY REFRESH/REPLACEMENT

This project provides for the long term improvement, acquisition, and replacement of technology driven hardware and equipment throughout the District.

SIGNIFICANCE: The importance of this project is that it allows the District to keep pace with the growth, changes and replacement of technology driven products so that it remains on the cutting edge of student instruction and management efficiency. Only in so doing can the District be educating and training its students to be prepared for the workplace of tomorrow.

PROJECT TYPE: Not Applicable.

ESTIMATED COST (includes escalation): $69,558,000

SCHEDULE: Expenditures shall occur annually in order to maintain the needed refresh cycle for existing classrooms, labs and administrative technology. The approximate construction schedule for this project is noted on item 28 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: The project shall be implemented throughout the District. Therefore, it is not indicated on the 2014 Facilities Master Plan site maps.

ENTERPRISE WIDE COMPUTER SYSTEM

This project provides financial resources for the acquisition of new integrated software for the management of the District's financial, human resources and student records. The system would meet the District's needs with web enabled capabilities such as on-line registration, electronic paystubs, enrollment analytics, and enhanced communication tools that increase operational efficiency while minimizing costs.

SIGNIFICANCE: This project allows the District to not only manage its data better and more efficiently but it also provides a systems approach that will grow with the District to provide seamless sharing of core person data for students, faculty, staff and alumni. Such information is a critical requirement of institutions of higher learning and essential to the long term needs of Long Beach Community College District.

PROJECT TYPE: Not Applicable.

ESTIMATED COST (includes escalation): $20,000,000

SCHEDULE: The approximate construction schedule for this project is noted on item 29 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: This project will be implemented District wide to serve the needs of all locations, facilities and functions. Therefore, it is not shown on the 2041 Facilities Master Plan site maps.

LANDSCAPING

This project provides for the design and installation of landscaping elements at both the LAC and PCC campuses. Scope of work includes new areas to be landscaped as well as the renovation of certain existing areas due to plant material that requires replacement or is inappropriate for the application. One emphasis of the landscaping project will be the utilization of drought tolerant planting material to conserve the use of irrigation water.

SIGNIFICANCE: This project provides for the installation of landscape materials which are visually pleasing, provide aesthetic improvements to the site, and assist the District in accomplishing its goal of water use reduction.

PROJECT TYPE: Not Applicable.

ESTIMATED COST (including escalation): $20,000,000

SCHEDULE: The approximate construction schedule for this project is noted on item 30 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: This project shall be implemented in various locations at both the LAC and PCC. Therefore, it is not specifically depicted on the 2041 Facilities Master Plan site plans.

INFRASTRUCTURE PROJECTS

This project shall provide funding for various infrastructure projects at both of the District's campuses to support the 2041 Facilities Master Plan. There is no specific schedule or timeframe for implementation of this project but the work will occur as needed to support any changes, alterations, replacements or installations of the various infrastructure systems. Typically, this work may include gas lines, chilled water lines for building cooling, hot water lines, electrical distribution and wiring, and data/communication systems.

SIGNIFICANCE: The importance of this project is that it will provide a budget to meet the replacement and upgrading of various infrastructure systems to improve and maintain the operational backbone necessary to support the physical plant.

PROJECT TYPE: Not Applicable.

ESTIMATED COST (includes escalation): $25,000,000

SCHEDULE: The approximate construction schedule for this project is noted on item 31 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: No specific location has been determined for this project but the infrastructure work will be accomplished throughout the District's facilities. Therefore, it is not shown on the 2041 Facilities Master Plan site maps.

ENERGY/WATER CONSERVATION PROJECT(S)

Due to ever increasing energy rates as well as requirements to curtail water consumption, it is imperative that the District take proactive steps to reduce use of these utilities. This project utilizes technology and equipment to accomplish that objective via the use of lighting upgrades/retrofits, reclaimed water, solar power, water saving sprinklers/timers, artificial turf, specialized plant material that requires very little irrigation, and other energy saving measures.

SIGNIFICANCE: As noted above, this project assists the District to save energy and reduce the utilization of water. It represents a commitment that will provide dividends of budgetary savings as well as a reduction in the use of ever decreasing natural resources.

PROJECT TYPE: Not Applicable.

ESTIMATED COST (including escalation): $25,000,000

SCHEDULE: The approximate construction schedule for this project is noted on item 32 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: This project will occur at both the LAC and PCC campuses. Because of its wide ranging scope and locations throughout the campuses, it is not shown on the 2041 Facilities Master Plan site maps.

MINOR CAMPUS IMPROVEMENTS

This project is actually a myriad of smaller projects that may be required during implementation of the 2041 Facilities Master Plan. These projects are wide ranging and involve improvements to facilities that may be required to meet educational and program objectives. Just a few examples would be the renovation of a laboratory to serve the needs of a new program in that room or, rewiring a machine shop to accommodate a specialized milling tool. These are just a few examples, of the many projects that would be funded by this resource.

SIGNIFICANCE: The importance of this project is that it provides financial resources that can be utilized to make minor improvements to facilities that are not large enough for capital outlay funding or do not fall into the State funded parameters for scheduled maintenance.

PROJECT TYPE: Not Applicable.

ESTIMATED COST (including escalation): $30,000,000

SCHEDULE: The approximate construction schedule for this project is noted on item 33 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: Because this project will occur in different facilities on both campuses, it is not specifically shown on the 2041 Facilities Master Plan site maps.

SURFACE PARKING IMPROVEMENTS

The scope of work for this project is an ongoing program to improve the District's parking lots at both the LAC and PCC. In some cases it might involve only a new seal coat on the existing asphalt surfaces or in other cases it might require the demolition of the parking lot and installation of new base material and asphalt. Each surface parking lot will be evaluated to determine the required improvements.

SIGNIFICANCE: The District's parking lots are an important physical asset of the college campuses since students and staff utilize these lots heavily. This project will protect that asset and ensure commuter students have a safe and available area in which to park their vehicles and pursue their educational objectives.

PROJECT TYPE: Not Applicable.

ESTIMATED COST (including escalation): $10,000,000

SCHEDULE: The approximate construction schedule for this project is noted on item 34 of the spreadsheet entitled LBCCD 2041 Facilities Master Plan Schedule.

LOCATION: The parking lot improvements project shall occur at all vehicular parking lots throughout the District's campuses. Therefore, it is not depicted on the 2041 Facilities Master Plan site maps.

LBCCD 2041 FACILITIES MASTER PLAN SCHEDULE

(WITH ESTIMATED $ VALUES INDICATED FOR EACH PROJECT)

FPPS FACILITIES PLANNING & PROGRAM SERVICES, INC "Serving California Community Colleges"

4/7/16

DISTRICT WIDE	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D
26. District Wide Security Monitoring Systems (Cameras)												
Planning												
Design	A											
DSA Review & Approval												
Bid & Award												
Construction												
Closeout												
10,000,000												
27. Joint Use Facility												
Planning												
Design												
DSA Review & Approval												
Bid & Award												
Construction												
Closeout												
27,317,500										2024 - 2039	2040	2041
28. Technology Refresh/Replacement												
2016/17 - 2040/41 (approx 294 mos)										2040/41		
69,558,000												
29. Enterprise Wide Computer System												
2016/17 - 2040/41 (approx 294 mos)										2040/41		
20,000,000												
30. Landscaping												
2016/17 - 2040/41 (approx 294 mos)										2040/41		
20,000,000												
31. Infrastructure Projects												
2016/17 - 2040/41 (approx 294 mos)										2040/41		
25,000,000												
32. Energy/Water Conservatn Projects												
2015/16 - 2040/41 (approx 309 mos)										2040/41		
25,000,000												
33. Minor Campus Improvements												
2016/17 - 2040/41 (approx 294 mos)										2040/41		
30,000,000												
34. Surface Parking Improvements												
2016/17 - 2040/41 (approx 294 mos)										2040/41		
10,000,000												
236,875,500										2024 - 2039	2040	2041
	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026

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FUNDING PROJECTIONS

LBCCD 2041 FACILITIES MASTER PLAN - ESTIMATED CASH FLOW

4/7/16 REV

LAC	Project Value		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
	62.50%	C 7,680,064																											
1. Building D - Science	37.50%	NC 4,608,039																											
Planning	4.96%	609,887	609,887																										
Design Bldg D	7.72%	948,714	948,714																										
DSA Review & Approval	4.41%	542,122	60,236	481,886																									
Bid & Award Building D	3.31%	406,592		406,592																									
Construction	62.50%	7,680,064		853,340	6,826,724																								
Closeout	3.86%	474,357			474,357																								
12,288,103	13.24%	1,626,367	232,338	350,443	1,043,585																								
	62.50%	C 5,419,196																											
2. Building P - Language Arts	37.50%	NC 3,251,517																											
Planning	4.96%	430,348	430,348																										
Design Building P	7.72%	669,430	669,430																										
DSA Review & Approval	4.41%	382,531		382,531																									
Bid & Award Building P	3.31%	286,899		191,266	95,633																								
Construction - Building P	62.50%	5,419,196			5,419,196																								
Closeout	3.86%	334,715			111,572	223,143																							
8,670,713	13.24%	1,147,594	165,254	165,254	693,500	123,587																							
	62.50%	C 15,393,468																											
3. Building J - Auditorium	37.50%	NC 9,236,081																											
Planning	4.96%	1,222,422	1,222,422																										
Design Building J	7.72%	1,901,546	633,849	1,267,697																									
DSA Review & Approval - Bldg J	4.41%	1,086,598		724,398	362,199																								
Bid & Award Building J	3.31%	814,948			814,948																								
Construction - Building J	62.50%	15,393,468			4,810,459	10,583,009																							
Closeout	3.86%	950,773				316,924	633,849																						
24,629,548	13.24%	3,259,793	314,337	419,116	844,973	1,441,172	240,195																						
	62.50%	C 10,244,063																											
4. Outdoor Kinesiology Labs	37.50%	NC 6,146,438																											
Planning	4.96%	813,499		650,799	162,700																								
Design	7.72%	1,265,443			1,265,443																								
DSA Review & Approval	4.41%	723,110			80,346	642,765																							
Bid & Award	3.31%	542,333				542,333																							
Construction	62.50%	10,244,063				1,024,406	9,219,656																						
Closeout	3.86%	632,722					632,722																						
16,390,500	13.24%	2,169,331		96,415	289,244	381,951	1,401,721																						
	62.50%	C 3,122,000																											
5. LAC Walkways & Wayfinding	37.50%	NC 1,873,200																											
Planning	4.96%	247,924			247,924																								
Design	7.72%	385,659			385,659																								
DSA Review & Approval	4.41%	220,376			97,945	122,431																							
Bid & Award	3.31%	165,282				165,282																							
Construction	62.50%	3,122,000				46,597	139,791	139,791	139,791	139,791	139,791	139,791	139,791	139,791	139,791	139,791	139,791	139,791	139,791	139,791	139,791	139,791	139,791	139,791	139,791	139,791	139,791	139,791	
Closeout	3.86%	192,829																											192,829
4,995,200	13.24%	661,129			119,003	86,166	20,493	20,493	20,493	20,493	20,493	20,493	20,493	20,493	20,493	20,493	20,493	20,493	20,493	20,493	20,493	20,493	20,493	20,493	20,493	20,493	20,493	20,493	5,123
	62.50%	C 17,585,938																											
6. Building W - Aquatic Center	37.50%	NC 10,551,563																											
Planning	4.96%	1,396,530			1,163,775	232,755																							
Design	7.72%	2,172,381				2,172,381																							
DSA Review & Approval	4.41%	1,241,360				137,929	1,103,431																						
Bid & Award	3.31%	931,020					931,020																						
Construction	62.50%	17,585,938					925,576	11,106,908	5,553,454																				
Closeout	3.86%	1,086,190							1,086,190																				
28,137,500	13.24%	3,724,081			199,504	478,810	557,403	1,421,922	1,066,441																				
LAC	%	$																											
	Project Value		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041

LBCCD 2041 FACILITIES MASTER PLAN - ESTIMATED CASH FLOW

FPPS FACILITIES PLANNING & PROGRAM SERVICES, INC "Serving California Community Colleges"

4/7/16 REV

LAC	Project Value		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
	62.50%	C 23,187,919																											
7. Building E - College Center	37.50%	NC 13,912,752																											
Planning	4.96%	1,841,394						1,841,394																					
Design Building E	7.72%	2,864,390						1,273,062	1,591,328																				
DSA Rvw & Apprvl - Building E	4.41%	1,636,794							1,273,062	363,732																			
Bid & Award Building E	3.31%	1,227,596								1,227,596																			
Construct Building E	62.50%	23,187,919								6,956,376	13,912,752	2,318,792																	
Closeout	3.86%	1,432,195										1,432,195																	
37,100,671	13.24%	4,910,383						526,112	631,335	1,212,346	1,793,357	747,232																	
	62.50%	C 43,810,499																											
8. Building M - Liberal Arts	37.50%	NC 26,286,299																											
Planning	4.96%	3,479,069								3,479,069																			
Design Building M/N	7.72%	5,411,885								1,803,962	3,607,923																		
DSA Review Building Design	4.41%	3,092,506									1,374,447	1,718,059																	
Bid & Award Building M/N	3.31%	2,319,379										2,319,379																	
Construct Building M/N	62.50%	43,810,499										4,867,833	19,471,333	19,471,333															
Closeout (2037)	3.86%	2,705,943													2,705,943														
70,096,798	13.24%	9,277,517								897,824	1,077,389	1,457,468	2,597,705	2,597,705	649,426														
	62.50%	C 21,755,126																											
9. Building O2 - Economic & Workforce Development/Foundat'n	37.50%	NC 13,053,076																											
Planning	4.96%	1,727,613								1,727,613																			
Design Building O2	7.72%	2,687,398								1,492,999	1,194,399																		
DSA Review Building O2	4.41%	1,535,656									1,365,028	170,628																	
Bid & Award Building O2	3.31%	1,151,742										1,151,742																	
Construct Swing Space	incl below	incl below																											
Construct Building O2	62.50%	21,755,126										2,175,513	13,053,076	6,526,538															
Closeout	3.86%	1,343,699												1,343,699															
34,808,202	13.24%	4,606,968								460,697	502,578	699,239	1,682,545	1,261,909															
	55.56%	C 27,497,572																											
10. Building G - Performing Arts	44.44%	NC 21,998,057																											
Planning Bldg H	2.94%	1,455,754										1,213,128	242,626																
Design Building H	4.58%	2,264,506											2,264,506																
DSA Review Building H	2.61%	1,294,003											287,556	1,006,447															
Bid & Award Building H	1.96%	970,503												970,503															
Planning Bldg G	2.94%	1,455,754										1,213,128	242,626																
Design Building G	4.58%	2,264,506											2,264,506																
DSA Review Building G	2.61%	1,294,003											287,556	1,006,447															
Bid & Award Building G	1.96%	970,503												970,503															
Construct Building H	27.78%	13,748,786													5,728,661	6,874,393	1,145,732												
Closeout	2.29%	1,132,253															1,132,253												
Construct Swing Space for Bldg G	incl below	incl below																											
Construct Building G	27.78%	13,748,786													5,728,661	6,874,393	1,145,732												
Closeout	2.29%	1,132,253															1,132,253												
49,495,629	15.69%	7,764,020										375,678	901,628	901,628	2,163,165	2,415,473	1,006,447												
	62.50%	C 16,074,899																											
11. Building K - Art	37.50%	NC 9,644,939																											
Planning	4.96%	1,276,536		1,276,536																									
Design	7.72%	1,985,723		1,241,077	744,646																								
DSA Review & Approval	4.41%	1,134,699			1,134,699																								
Bid & Award	3.31%	851,024				851,024																							
Construct Swing Space for Bldg K	incl below	incl below																											
Construct Building K	62.50%	16,074,899				3,214,980	12,859,919																						
Closeout	3.86%	992,861						992,861																					
25,719,838	13.24%	3,404,096		351,047	382,961	684,365	1,588,578	397,145																					
LAC	%	$																											
	Project Value		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041

LBCCD 2041 FACILITIES MASTER PLAN - ESTIMATED CASH FLOW

4/7/16 REV

LAC	Project Value		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
	62.50%	C 37,561,534																											
12. Building R - Primary Gymnasium	37.50%	NC 22,536,920																											
Planning	4.96%	2,982,828				2,982,828																							
Design	7.72%	4,639,954				2,530,884	2,109,070																						
DSA Review & Approval	4.41%	2,651,402					2,062,202	589,201																					
Bid & Award	3.31%	1,988,552						1,988,552																					
Construction	62.50%	37,561,534						10,517,229	18,029,536	9,014,768																			
Closeout	3.86%	2,319,977								2,319,977																			
60,098,454	13.24%	7,954,207				987,419	987,419	1,803,411	2,386,262	1,789,697																			
	62.50%	C 15,459,494																											
13. Building Q - Secondary Gymnasium	37.50%	NC 9,275,697																											
Planning	4.96%	1,227,666						613,833	613,833																				
Design	7.72%	1,909,702							1,909,702																				
DSA Review & Approval	4.41%	1,091,258							121,251	970,007																			
Bid & Award	3.31%	818,444								818,444																			
Construction	62.50%	15,459,494								858,861	10,306,330	4,294,304																	
Closeout	3.86%	954,851										954,851																	
24,735,191	13.24%	3,273,775						113,323	453,292	524,643	1,309,510	873,007																	
	62.50%	C 23,334,000																											
14. Building B - Classroom	37.50%	NC 14,000,400																											
Planning	4.96%	1,852,994							926,497	926,497																			
Design	7.72%	2,882,435								2,882,435																			
DSA Review & Approval	4.41%	1,647,106									1,647,106																		
Bid & Award	3.31%	1,235,329									1,235,329																		
Construction	62.50%	23,334,000										11,667,000	11,667,000																
Closeout	3.86%	1,441,218												1,441,218															
37,334,400	13.24%	4,941,318							164,711	658,842	658,842	1,537,299	1,537,299	384,325															
	62.50%	C 2,325,375																											
15. Building F - Demolish Family / Consumer Education	37.50%	NC 1,395,225																											
Planning	4.96%	184,662																					184,662						
Design	7.72%	287,252																					71,813	215,439					
DSA Review & Approval	4.41%	164,144																						164,144					
Bid & Award	3.31%	123,108																						123,108					
Relocate Occupants	-	-																											
Demo Bldg F / Construct Courtyd	62.50%	2,325,375																							1,162,688	1,162,688			
Closeout (2038)	3.86%	143,626																								143,626			
3,720,600	13.24%	492,432																					26,860	80,580	178,171	206,822			
	62.50%	C 16,539,775																											
16. Building O1 - IITS / Warehouse	37.50%	NC 9,923,865																											
Planning	4.96%	1,313,453																					1,313,453						
Design	7.72%	2,043,149																						2,043,149					
DSA Review & Approval	4.41%	1,167,514																						518,895	648,619				
Bid & Award	3.31%	875,635																							875,635				
Construction	62.50%	16,539,775																							3,675,506	11,026,517	1,837,753		
Closeout	3.86%	1,021,574																									1,021,574		
26,463,640	13.24%	3,502,541																					242,484	484,967	790,317	1,401,016	583,757		
	71.43%	C 63,437,143																											
17. Building S - Stadium	28.57%	NC 25,374,857																											
Planning	3.78%	3,358,437																					3,358,437						
Design Building	5.88%	5,224,235																						5,224,235					
DSA Review & Approval	3.36%	2,985,277																							2,985,277				
Bid & Award	2.52%	2,238,958																							2,238,958				
Construction	71.43%	63,437,143																								31,718,571	31,718,571		
Closeout	2.94%	2,612,118																										2,612,118	
88,812,000	10.08%	8,955,832																					537,350	1,074,700	1,074,700	2,786,259	2,786,259	696,565	
LAC	%	$	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
	Project Value																												

LBCCD 2041 FACILITIES MASTER PLAN - ESTIMATED CASH FLOW

4/7/16 REV

LAC	Project Value		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
	62.50%	C 13,138,971																											
18. Building CDC - Child Development Center	37.50%	NC 7,883,383																											
Planning	4.96%	1,043,389																						1,043,389					
Design	7.72%	1,623,049																							1,623,049				
DSA Review & Approval	4.41%	927,457																							412,203	515,254			
Bid & Award	3.31%	695,593																								695,593			
Construction	62.50%	13,138,971																								4,379,657	8,759,314		
Closeout	3.86%	811,525																									811,525		
21,022,354	13.24%	2,782,370																						166,942	400,661	786,483	1,428,283		
Sub Total:		**574,519,341**	**5,286,815**	**8,858,399**	**27,770,994**	**29,973,141**	**35,413,045**	**33,345,236**	**35,967,178**	**40,546,669**	**40,145,274**	**41,346,760**	**56,660,244**	**38,042,536**	**17,136,139**	**16,324,542**	**5,722,701**	**160,284**	**160,284**	**160,284**	**160,284**	**160,284**	**5,895,342**	**11,299,832**	**16,226,067**	**54,982,769**	**49,107,320**	**3,468,966**	**197,953**
LAC	**%**	**$**																											
	Project Value		**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**

LBCCD 2041 FACILITIES MASTER PLAN - ESTIMATED CASH FLOW

4/7/16 REV

PCC	Project Value		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
	62.50%	C 12,689,351																											
19. Building QQ/RR - Electrical Program / Dyer Hall / Lifetime Learning	37.50%	NC 7,613,611																											
Planning	4.96%	1,007,684	1,007,684																										
Design	7.72%	1,567,508	1,567,508																										
DSA Review Building QQ/RR	4.41%	895,719	895,719																										
Bid & Award	3.31%	671,789	335,895	335,895																									
Construction	62.50%	12,689,351		10,574,459	2,114,892																								
Closeout	3.86%	783,754			783,754																								
20,302,962	13.24%	2,687,157	690,983	1,369,170	627,003																								
	62.50%	C 11,041,173																											
20. Building MM - Construction Trades Phase 1	37.50%	NC 6,624,704																											
Planning	4.96%	876,799				876,799																							
Design Building	7.72%	1,363,910				340,977	1,022,932																						
DSA Review & Approval	4.41%	779,377					519,585	259,792																					
Bid & Award Bldg MM	3.31%	584,533						584,533																					
Construct Bldg MM	62.50%	11,041,173						4,731,931	6,309,242																				
Closeout	3.86%	681,955							681,955																				
17,665,877	13.24%	2,338,131				196,403	336,691	746,001	1,059,036																				
	71.43%	C 15,352,714																											
21. Building P2 - Parking Structure	28.57%	NC 6,141,086																											
Planning	3.78%	812,791						812,791																					
Design	5.88%	1,264,341						1,264,341																					
DSA Review & Approval	3.36%	722,481							722,481																				
Bid & Award	2.52%	541,861							541,861																				
Construction	71.43%	15,352,714								15,352,714																			
Closeout	2.94%	632,171									632,171																		
21,493,800	10.08%	2,167,442						325,116	325,116	1,213,768	303,442																		
	62.50%	C 9,010,773																											
22. Building MM - Construction Trades Phase 2	37.50%	NC 5,406,464																											
Planning	4.96%	715,561					357,781	357,781																					
Design Building	7.72%	1,113,096						1,113,096																					
DSA Review & Approval	4.41%	636,055						282,691	353,364																				
Bid & Award Bldg MM	3.31%	477,041							477,041																				
Construct Swing Space	incl below	incl below																											
Construct Bldg MM	62.50%	9,010,773								9,010,773																			
Closeout	3.86%	556,548									556,548																		
14,417,237	13.24%	1,908,164					44,035	264,207	264,207	1,068,572	267,143																		
	62.50%	C 73,794,000																											
23. Building OO - Classroom	37.50%	NC 44,276,400																											
Planning	4.96%	5,860,112					976,685	4,883,426																					
Design	7.72%	9,115,729						5,317,509	3,798,221																				
DSA Review & Approval	4.41%	5,208,988							4,051,435	1,157,553																			
Bid & Award	3.31%	3,906,741								3,906,741																			
Construction	62.50%	73,794,000								19,131,778	32,797,333	21,864,889																	
Closeout	3.86%	4,557,865										4,557,865																	
118,070,400	13.24%	15,626,965					156,270	1,875,236	1,875,236	3,333,752	4,375,550	4,010,921																	
	62.50%	C 1,583,500																											
24. Building FF - Demolish Fine Arts / Senior Center	37.50%	NC 950,100																											
Planning	4.96%	125,749								125,749																			
Design	7.72%	195,609								78,244	117,365																		
DSA Review & Approval	4.41%	111,776									111,776																		
Bid & Award	3.31%	83,832										83,832																	
Construction	62.50%	1,583,500										1,583,500																	
Closeout	3.86%	97,804										97,804																	
2,533,600	13.24%	335,329								28,743	57,485	249,102																	
PCC	%	$																											
	Project Value		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041

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PCC	Project Value		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
	62.50%	C 1,607,857																											
25. PCC Walkways & Wayfinding	37.50%	NC 964,714																											
Planning	4.96%	127,683		127,683																									
Design	7.72%	198,618			198,618																								
DSA Review & Approval	4.41%	113,496			88,274	25,221																							
Bid & Award	3.31%	85,122				85,122																							
Construction	62.50%	1,607,857				41,531	71,197	71,197	71,197	71,197	71,197	71,197	71,197	71,197	71,197	71,197	71,197	71,197	71,197	71,197	71,197	71,197	71,197	71,197	71,197	71,197	71,197	71,197	
Closeout	3.86%	99,309																											99,309
2,572,571	13.24%	340,487		15,322	61,288	31,626	10,438	10,438	10,438	10,438	10,438	10,438	10,438	10,438	10,438	10,438	10,438	10,438	10,438	10,438	10,438	10,438	10,438	10,438	10,438	10,438	10,438	10,438	2,610
Sub Total:		**197,056,447**	**4,497,789**	**12,422,529**	**3,873,829**	**1,597,679**	**3,495,613**	**22,900,086**	**20,540,828**	**54,490,020**	**39,300,448**	**32,529,548**	**81,635**	**81,635**	**81,635**	**81,635**	**81,635**	**81,635**	**81,635**	**81,635**	**81,635**	**81,635**	**81,635**	**81,635**	**81,635**	**81,635**	**81,635**	**81,635**	**101,918**
PCC	**%**	**$**																											
	Project Value		**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**

LBCCD 2041 FACILITIES MASTER PLAN - ESTIMATED CASH FLOW

4/7/16 REV

DISTRICT WIDE	Project Value		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
	75.00%	C 7,500,000																											
26. District Wide Security Monitoring Systems (Cameras)	25.00%	NC 2,500,000																											
Planning	3.00%	300,000	300,000																										
Design	5.50%	550,000	330,000	220,000																									
DSA Review & Approval	2.50%	250,000		250,000																									
Bid & Award	2.00%	200,000		200,000																									
Construction	75.00%	7,500,000		4,687,500	2,812,500																								
Closeout	2.00%	200,000			200,000																								
10,000,000	10.00%	1,000,000	150,000	468,182	381,818																								
	62.50%	C 17,073,438																											
27. Joint Use Facility	37.50%	NC 10,244,063																											
Planning	4.96%	1,355,832			1,355,832																								
Design	7.72%	2,109,072			527,268	1,581,804																							
DSA Review & Approval	4.41%	1,205,184				803,456	401,728																						
Bid & Award	3.31%	903,888					903,888																						
Construction	62.50%	17,073,438					6,402,539	10,670,898																					
Closeout	3.86%	1,054,536						703,024	351,512																				
27,317,500	13.24%	3,615,551			333,743	500,615	1,049,535	1,598,454	133,205																				
28. Technology Refresh/Replacement																													
2016/17 - 2040/41 (approx 294 mos)		69,558,000			2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	2,839,102	1,419,551
69,558,000																													
29. Enterprise Wide Computer Systm																													
2016/17 - 2040/41 (approx 294 mos)		20,000,000			816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	408,163
20,000,000																													
30. Landscaping																													
2016/17 - 2040/41 (approx 294 mos)		20,000,000			816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	816,327	408,163
20,000,000																													
31. Infrastructure Project(s)																													
2016/17 - 2040/41 (approx 294 mos)		25,000,000			1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	1,020,408	510,204
25,000,000																													
32. Energy/Water Conservation Proj(s)																													
2015/16 - 2040/41 (approx 309 mos)		25,000,000	242,718	970,874	970,874	970,874	970,874	970,874	970,874	970,874	970,874	970,874	970,874	970,874	970,874	970,874	970,874	970,874	970,874	970,874	970,874	970,874	970,874	970,874	970,874	970,874	970,874	970,874	485,437
25,000,000																													
33. Minor Campus Improvements																													
2016/17 - 2040/41 (approx 294 mos)		30,000,000			1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	1,224,490	612,245
34. Surface Parking Improvements																													
2016/17 - 2040/41 (approx 294 mos)		10,000,000			408,163	408,163	408,163	408,163	408,163	408,163	408,163	408,163	408,163	408,163	408,163	408,163	408,163	408,163	408,163	408,163	408,163	408,163	408,163	408,163	408,163	408,163	408,163	408,163	204,082
10,000,000																													
Sub Total:		**236,875,500**	1,022,718	6,796,556	13,706,851	10,981,565	16,853,380	21,068,067	8,580,407	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	4,047,845
DISTRICT WIDE	**%**	**$**																											
	Project Value		**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**

SUMMARY

LAC:	574,519,341	5,286,815	8,858,399	27,770,994	29,973,141	35,413,045	33,345,236	35,967,178	40,546,669	40,145,274	41,346,760	56,660,244	38,042,536	17,136,139	16,324,542	5,722,701	160,284	160,284	160,284	160,284	160,284	5,895,342	11,299,832	16,226,067	54,982,769	49,107,320	3,468,966	197,953
PCC:	197,056,447	4,497,789	12,422,529	3,873,829	1,597,679	3,495,613	22,900,086	20,540,828	54,490,020	39,300,448	32,529,548	81,635	81,635	81,635	81,635	81,635	81,635	81,635	81,635	81,635	81,635	81,635	81,635	81,635	81,635	81,635	81,635	101,918
DISTRICT WIDE:	236,875,500	1,022,718	6,796,556	13,706,851	10,981,565	16,853,380	21,068,067	8,580,407	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	8,095,690	4,047,845
GRAND TOTAL:	1,008,451,288	10,807,322	28,077,483	45,351,674	42,552,385	55,762,037	77,313,389	65,088,413	103,132,380	87,541,413	81,971,998	64,837,569	46,219,861	25,313,464	24,501,867	13,900,026	8,337,609	8,337,609	8,337,609	8,337,609	8,337,609	14,072,667	19,477,157	24,403,392	63,160,094	57,284,645	11,646,291	4,347,716

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