Antelope Valley Community College District 2016 Facilities Master Plan

Draft Environmental Impact Report

SCH#2018051057

prepared by

Antelope Valley Community College District
3041 West Avenue K
Lancaster, California 93536-5426
Contact: Doug Jensen, Executive Director, Facilities Services

prepared with the assistance of

Rincon Consultants, Inc.
250 East 1st Street, Suite 301
Los Angeles, California 90012

August 2018

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Environmental Scientists Planners Engineers
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Table of Contents

Tables

Figures

Appendices

Executive Summary

This document is an Environmental Impact Report (EIR) analyzing the environmental effects of the proposed Antelope Valley Community College District (AVCCD, or District) 2016 Facilities Master Plan (2016 FMP). The 2016 FMP is a strategy for modifying the physical campus in Lancaster to accommodate growth and change over the next 30 years. This section summarizes the characteristics of the 2016 FMP, alternatives to the 2016 FMP, and the environmental impacts and mitigation measures associated with the 2016 FMP.

Project Synopsis

Project Applicant

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Project Description

This EIR has been prepared to examine the potential environmental effects of the 2016 FMP. The following is a summary of the full project description, which can be found in Section 2.0, *Project Description*.

The proposed project (2016 FMP) is an update of the Antelope Valley Community College District (AVCCD, or District) Facilities Master Plan (FMP), also known as the 2016 FMP. AVCCD's FMP (known as the 2020 FMP) was last updated in 2005. AVCCD certified an EIR for the 2020 FMP in September 2005.

The 2016 FMP is guide for the future development of the Lancaster campus of AVCCD, also known as Antelope Valley College (AVC), and hereinafter also referred to as the project site. AVCCD is one of 72 community college districts in California. AVCCD consists of AVC's Lancaster campus; and the AVC Palmdale Center, a leased facility in central Palmdale. According to the 2016 FMP, AVCCD supported 14,677 full-time equivalent students (FTES) in 2014 at both campuses, and is anticipated to accommodate 19,852 FTES by 2030. This is a total increase of 5,175 FTES (35.3%), which is an annual increase of approximately 323 FTES (2.2%) (AVCCD 2016). These FTES increases are based on estimates of future demand for AVCCD's services. The 2016 FMP would accommodate, not cause, these increases, which are projected to occur with or without implementation of the 2016 FMP.

The project site is the Lancaster campus of Antelope Valley College (AVC), which is located at 3041 West Avenue K in the City of Lancaster, Los Angeles County, in the block of land between West

Avenue K on the south, 35th Street West on the west, West Ave J8 on the north, and 30th Street West on the east. The project site is relatively flat with an area of approximately 135 acres, and the Assessor Parcel Numbers are 3153-019-913, 3153-019-908, 3153-019-909, 3153-019-904, 3153-019-905, 3153-019-910, and 3153-019-911. The site is zoned School, with a General Plan Land Use designation of Public School (P, S). The proposed project would not require amendments to the City's General Plan.

Project Characteristics

The proposed project would involve demolition, relocation, new construction, and renovations and changes of use, as summarized in Table ES 1.

Table ES 1 Project Characteristics

Demolition	Relocation	New Construction	Renovations/Change of Use
Student Services	T100	Academic Commons	Applied Arts
Student Center	T850	Arts Complex	Business Education
Fine Arts 1, 2, 3, 4	T851	Campus Security	Gymnasium
Learning Center		Community Center	Field House
Faculty Office 1, 2, and 3		CSUB + University Center	
Lecture Hall		CTE Instruction	
Liberal Studies 1, 2, and 3		Field House	
Math/Engineering		Instruction Building 1 (IB1)	
Technical Education 1 and 2		Instruction Building 2 (IB2)	
Learning Center		Instruction Building 3 (IB3)	
SOAR High School		SOAR High School	
CSUB		Student Center Student Services	
T503			
T504			
T800			

Source: AVCCD 2016

Parking and Site Access

The FMP does not include any increase in parking supply. FMP guidelines require one parking space per 5 enrolled students. According to the 2016 FMP, AVC will experience an increase in enrollment by nearly 3,000 students between 2018 and 2030, from 12,946 students to 15,908 students. The existing 3,794 spaces would still leave an excess capacity of 612 spaces when compared to this projected need.

The 2016 FMP includes construction of a new driveway at the intersection of 30th Street West and West Avenue J-12 and new pick-up and drop-off locations on the east and west side of the campus. Two of the existing driveways on 30th St. West would close.

Pedestrian access would be provided at the following intersections: 30th St. West and West Avenue.

Utilities

The City of Lancaster Utility Services Department provides the following utility services: sewer collection system and recycled water. Sunnyside Farms Mutual Water Company provides water, Southern California Edison and Lancaster Choice Energy supply electricity, and Southern California Gas Company provides natural gas.

Construction and Grading

Construction of the proposed project is expected to occur over approximately 30 years. Construction activities would be separated into four phases. Phase 1A would be complete by about 2021 and would include construction of three swing space areas, new tennis courts and campus security buildings. Phase 1B would be complete by about 2021 and would include the demolition or removal of T503, T504, T508, Lecture Hall, Office 1, Liberal Studies, Office 3, Security and the current tennis courts. Phase 1B would also include the relocation T850 and T851. CTE Instruction, 30th St. Entry, Student Services, Academic Commons, Adaptive PE Pool + Sand Volleyball, and Field House (partial) would all be built during this phase.

Phase 2 would be complete in about 2023 and would include the removal of TE1 and TE2, Math-Engineering, Office 2, Learning Center, Student Services, CSUB, All swing spaces. T100 would relocate. The Gymnasium would be renovated. Instructional Building 1, Student Center, Instructional Building 2, Field House (finish), SOAR High School, and CSUB & University Center would get built.

Phase 3 would include the removal and relocation of the Student Center to the New Student Center and the SOAR High School to the New High School as well as the building of the Arts Complex.

Phase 4 would include the removal and relocation of the Fine Arts to the Arts Complex. Instructional Building 3 would be built. Applied Arts and Business Education would be renovated.

Applicant Proposed Project Design Features (PDFs)

Planning and design decisions in the 2016 FMP are based on two themes:

- To respect and honor the history of the original Antelope Valley College campus
- To approach design of the overall campus in an authentic way which ties the campus to its specific place

The Campus Development Guidelines in the 2016 FMP provide a framework for the future design of site and facilities projects. They are intended to ensure the development of AVC as a cohesive campus while supporting creative expression and innovative design solutions for individual projects. The Development Guidelines include the following elements:

CAMPUS GUIDELINES

The campus guidelines recommend a new landscape pattern using existing grid system of the campus and surrounding community and overlaying it with a secondary system inspired by the natural curvilinear patterns seen within river washes inherent to the Antelope Valley floor in which Lancaster is located. The existing linear north-south and east-west grid of campus walks forms the backbone of the proposed pedestrian circulation system, while the more organic secondary system

(nicknamed the garden ribbon) meanders through the grid, helping to create and define the edges of exterior gathering and learning areas.

LANDSCAPE GUIDELINES

The landscape guidelines recommend that the existing campus grid of walkways be designed with a linear planting of shade trees, pedestrian lightings, and a variety of seating opportunities; while the secondary pedestrian system along the garden ribbon is envisioned as a more passive system than the utilitarian pedestrian spines. The landscape guidelines include different landscape typologies for the project site, including pedestrian spines and walks, landscape field, courtyards, garden ribbon, student plaza, historic commons, community corner, and community engagement walks.

BUILDING GUIDELINES

The primary purpose of the building guidelines is to define a set of general design criteria for all future buildings on the project site, including new construction, additions and renovations. The ultimate goal is to create a well-defined, consistent physical campus environment that strengthens the AVC identity, fosters intellectual and social exchange, and inspires the entire campus and surrounding community. These guidelines focus on these primary elements:

- Transform the AVC campus identity
- Create a strong sense of place for AVC
- Enhance AVC's students' pride
- Respect and enhance the AVC legacy through authentic design

The building guidelines provide guidance for place-making, form, massing, wayfinding, façade articulation, materiality, color palette, and sustainability.

Project Objectives

- Strengthen Institutional Effectiveness measures and practices
- Increase efficient and effective use of all resources, including technology, facilities, human resources, and business services
- Focus on utilizing proven instructional strategies that will foster transferrable intellectual skills
- Advance more students to college-level coursework by developing and implementing effective placements tools
- Align instructional programs to the skills identified by the labor market

Alternatives

As required by the California Environmental Quality Act (CEQA), this EIR examines alternatives to the proposed project. Studied alternatives include the following three alternatives. Based on the alternatives analysis, Alternative 2 was determined to be the environmentally superior alternative.

- Alternative 1: No Project
- Alternative 2: Re-Use of Existing Facilities
- Alternative 3: Preservation of Campus Core/Existing Paved Surface Development

Alternative 1 (No Project Alternative). The No Project Alternative assumes that none of the new construction projects included in the 2016 FMP would be carried out. This would mean that none of the new facilities, demolitions, renovations, and changes of use of specific buildings would occur. All of the existing facilities on the project site, consisting of, but not limited to, classrooms, social service buildings, stadiums, parking lots, etc., would remain in their current configuration under this alternative. Since no development, construction, or operational changes would occur, the No Project Alternative would not allow for AVC to accommodate projected FTES increases, and would not fulfill one of the project objectives, which is to increase efficiency and effectively use all campus resources, including facilities.

Alternative 2 (Re-Use of Existing Facilities). Figures 2-3 and 2-4 in Section 2, *Project Description*, show the existing AVC campus map and the proposed 2016 FMP campus map, respectively. This alternative would involve re-use, renovation, and changing use of existing buildings, rather than demolition of existing structures and construction of new buildings. This alternative would retain the existing general layout of the project site and focus on internal changes to classrooms, buildings, and other facilities, to avoid demolition and ground disturbance that would be required by proposed activities under the proposed 2016 FMP.

This alternative would not result in many of the changes to building architecture, internal circulation, landscaping, classroom size/space, etc., included in the 2016 FMP, and therefore would not achieve the project objective of increasing efficiency and effectively using all campus resources, including facilities, to as great a degree as the 2016 FMP. It would, however, still achieve some of the other 2016 FMP project objectives by retaining the 2016 FMP's commitment to strengthening Institutional Effectiveness measures and practices, and allowing for the focus of utilizing proven instructional strategies that foster transferrable intellectual skills.

Alternative 3 (Preservation of Campus Core/Existing Paved Surface Development). Similar to Alternative 2, this alternative is designed to limit the overall amount of unpaved ground disturbance required to implement activities accommodated by the 2016 FMP. This alternative would involve a shifted focus from constructing new facilities and buildings on unpaved portions of campus, toward focusing development on areas of campus that have been previously paved. This alternative would allow for the construction of new facilities and would maintain proposed renovations to existing buildings; but new facilities would be placed on existing parking lot areas. The placement of new structures in these areas would reduce the overall amount of unpaved ground disturbance during construction, and would still achieve the majority of project objectives. Examples of newly constructed buildings that could be placed in existing paved areas include SOAR High School, Community Center, University Center, Student Center and Student Services. The exact location of these relocated buildings has not been presented with this alternative due to specific design considerations that are outside the scope of this environmental analysis; however, applicable areas for relocation include the parking lots along the northern boundary of campus, and the large parking lot east of Marauder Stadium. Although Alternative 3 would allow for new construction and accommodate the projected increases in FTES, this alternative would reduce the amount of parking available on-site.

Areas of Known Controversy

The EIR scoping process did not identify any areas of known controversy for the proposed project. Responses to the Notice of Preparation of a Draft EIR and input received at the EIR scoping meeting held by the City are summarized in Section 1.0, *Introduction*.

Required Approvals

The 2016 FMP would require approval of the AVCCD Board of Trustees.

Issues Not Studied in Detail in the EIR

Section 4.11 of this EIR summarizes issues from the environmental checklist that were addressed in the Initial Study (Appendix A). As indicated in the Initial Study, there is no substantial evidence that significant impacts would occur to the following issue areas: Agriculture and Forestry Resources, Geology and Soils, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Population and Housing, Public Services, and Recreation. Impacts to Aesthetics, Air Quality, Biological Resources, Cultural Resources, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Noise, Transportation and Traffic, Tribal Cultural Resources, and Utilities and Service Systems were found to be potentially significant and are addressed in this EIR.

Summary of Impacts and Mitigation Measures

Table ES-2 summarizes the environmental impacts of the proposed project, proposed mitigation measures, and residual impacts (the impact after application of mitigation, if required). Impacts are categorized as follows:

- **Significant and Unavoidable.** An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved per §15093 of the CEQA Guidelines.
- **Less than Significant with Mitigation Incorporated.** An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings under §15091 of the CEQA Guidelines.
- **Less than Significant.** An impact that may be adverse, but does not exceed the threshold levels and does not require mitigation measures. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.
- **No Impact:** The proposed project would have no effect on environmental conditions or would reduce existing environmental problems or hazards.

Table ES-2 Summary of Environmental Impacts, Mitigation Measures, and Residual Impacts

Impact	Mitigation Measure (s)	Residual Impact
Aesthetics		
Impact AES-1. The scale of development proposed in the 2016 FMP is designed to preserve and enhance existing view corridors. All development will take place within the existing campus footprint. Thus, implementation of the proposed 2016 FMP would not significantly block or impede views of scenic vistas, and impacts would be less than significant.	None required	Less than significant

Impact	Mitigation Measure (s)	Residual Impact
Impact AES-2. Development under the 2016 FMP would include physical changes to the project site, but these changes would not degrade its visual character and quality because future development carried out under the 2016 FMP would be required to adhere to the guiding principles laid out in the 2016 FMP. Impacts related to visual character and quality would be less than significant.	None required	Less than significant
Impact AES-3. Implementation of the 2016 FMP would lead to new construction that would create new sources of light and glare, but the project site is currently developed and already includes sources of light and glare. Any future development would be required to comply with 2016 FMP principles and standards specifically designed to reduce lighting impacts. Adherence to these policies and standards would reduce light and glare impacts to a less than significant level.	None required	Less than significant
Air Quality		
Impact AQ-1. Emissions of criteria pollutants resulting from construction and operation of development facilitated under the 2016 FMP would not exceed AVAQMD emissions thresholds. Furthermore, the 2016 FMP would not conflict with or obstruct implementation of the regional air quality management plan. Impacts would be less than significant.	None required	Less than significant
Impact AQ-2. Implementation of the 2016 FMP would not result in the exposure of sensitive receptors to substantial pollutant concentrations. This impact would be less than significant.	None required	Less than significant
Biological Resources		
Impact BIO-1. The likelihood that special status plant or animal species could be present on-site is low. Nevertheless, implementation of the 2016 FMP could potentially have an adverse effect on certain special-status animal and plant species. This impact would be less than significant with mitigation incorporated.	**BIO-1 Pre-Construction Nesting Bird Surveys.** To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to the project, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season (February 1 through August 31). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground	Impacts would be less than significant with mitigation since implementation of the required mitigation measure would ensure that active nests are

Impact	Mitigation Measure (s)	Residual Impact
	disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities. If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/ nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.	not disturbed.
Impact BIO-2. The project site is developed and the FMP would not impact any sensitive plant communities or natural habitats. There would be no impact.	None required	No Impact
Impact BIO-3. Implementation of the2016 FMP would not impact any established wildlife corridors but may interfere with the movement of some wildlife species. This impact would be less than significant with mitigation incorporated.	See Mitigation Measure BIO-1	Less than significant with mitigation
Cultural Resources		
Impact CR-1. Implementation of the 2016 FMP could cause a substantial adverse change in the significance of potentially historic resources on the project site through demolition, alteration of buildings and new construction. Impacts would be significant and unavoidable.	**CR-1(a) Historical Assessments of Potential Historic Resources.** Prior to any construction activities that may affect buildings over 50 years of age at the time of construction, a historical resources assessment shall be performed by an architectural historian or historian who meets the National Parks Service PQS in architectural history or history. The assessment shall include an intensive-level survey and archival research in accordance with the California Office of Historic Preservation guidelines to identify any previously unrecorded potential historical resources within the project site or vicinity that may be affected by the proposed project. California Department of Parks and Recreation (DPR) Forms shall be prepared for all surveyed properties. Pursuant to CEQA, potential historical resources shall be evaluated for their eligibility for listing in the CRHR under a developed historic context. The findings of the study shall be incorporated into a historical resource assessment report and submitted to the AVCCD for review and approval.	Significant and Unavoidable

Impact	Mitigation Measure (s)	Residual Impact
	CR-1(b) Secretary of the Interior's Standards for Relocation, Rehabilitation, or Alteration of Historic Resources. To ensure that construction activities requiring the relocation, rehabilitation, or alteration of a historical resource identified under Mitigation Measure CR-1(a) do not impair their significance, the Secretary of the Interior's Standards shall be used to the maximum extent possible. The application of the Standards shall be overseen by a qualified architectural historian or historic architect meeting the PQS. Prior to any construction activities that may affect the historical resource, a report identifying and specifying the treatment of character-defining features, the extent of adaptive reuse, and construction activities shall be provided to the AVCCD for review and approval. **CR-1(c) Documentation for Demolition or Significant Alteration of Historic Resources.** If proposed on-site construction would result in the demolition or significant alteration of a historical resource identified under Mitigation Measure CR-1(a), it cannot be mitigated to a less than significant level and impacts would be significant and unavoidable. However, recordation of the resource prior to construction activities will assist in reducing adverse impacts to the resource to the greatest extent possible. Recordation shall take the form of Historic American Buildings Survey, Historic American Engineering Record or Historic American Landscape Survey (HABS/HAER/HALS) documentation, and shall be performed by an architectural historian or historian who meets the PQS. Documentation shall include an architectural and historical narrative; medium- or large-format black and white photographs, negatives, and prints; and supplementary information such as building plans and elevations, and/or historic photographs. Documentation shall be reproduced on archival paper and copies of this documentation, photographs, and negatives, along with architectural and historical narrative shall be submitted to the AVCCD, City of Lancaster, the West Antelope Valley Historical Society and the Lancaster Museum of Art and History, and any other local, state, or federal institutions deemed appropriate. The documentation report(s) shall be submitted and approved by the AVCCD prior to issuance of demolition permits. **CR-1(d) Interpretive Plan for Demolition of Historic Resources.** If on-site construction would result in the demolition or significant alteration of a historical resource identified under Mitigation Measure CR-1(a), an interpretive plan shall be completed. A qualified architectural historian who meets the Secretary of the Interior's Professional Qualification Standards for History and/or Architectural History shall be selected by the lead agency to prepare an onsite interpretive plan, which shall consist of a public display, plaque, or other suitable interpretive approach, as approved by the lead agency. It shall focus on the significant historic themes associated with the historic properties to be demolished and shall	

Impact	Mitigation Measure (s)	Residual Impact
	include any collected research pertaining to the historic property, and images and details from the HABS/HAER/HALS documentation. The interpretive display shall be installed in an appropriate public location in the project site within one year of the date of completion of the proposed project. If no appropriate public location is available, an appropriate offsite public location for the display shall be identified. The interpretive display shall remain in public view for a minimum of five years, and if removed, appropriately archived.	
Impact CR-2. Implementation of the 2016 FMP could cause an adverse change in the significance of previously undiscovered archaeological resources. Impacts would be less than significant with mitigation incorporated.	**CR-2(a) Archaeological Resources Assessment.** As projects facilitated by the 2016 FMP are proposed, AVCCD shall determine the need for an updated archaeological resources study on a project by project basis. Situations where an archaeological resources study may not be required include, but are not limited to, project sites with zero ground visibility (site is completely developed), and projects in areas already heavily disturbed by past construction. When AVCCD determines an assessment to be warranted, the study shall be performed under the supervision of an archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards (PQS) in either prehistoric or historic archaeology. Assessments shall include a CHRIS records search from the South Central Coastal Information Center (SCCIC) no more than five years old, and of the Sacred Lands File (SLF) maintained by the Native American Heritage Commission (NAHC). The records searches will determine if the proposed project area was previously surveyed for archaeological resources, identify and characterize the results of previous cultural resource surveys, and disclose any cultural resources that have been recorded and/or evaluated. A Phase I pedestrian survey shall be undertaken in proposed project areas with exposed ground surface to locate any surface cultural materials. By performing a records search, consultation with the NAHC, and a Phase I survey, a qualified archaeologist will be able to classify the project area as having high, medium, or low sensitivity for archaeological resources. Should any resources be identified during future studies, additional cultural resources investigations such as a Phase II evaluation, and Phase III data recovery may be necessary if a resource cannot be avoided after discovery. **CR-2(b) Archaeological and/or Native American Monitoring.** If the cultural resources study(ies) required under MM CR-2(a) identify the presence of archaeological resources or archaeological sensitivity, archaeological monitoring shall be required. A qualified archaeologist shall monitor all ground-disturbing construction and pre-construction activities in areas within previously undisturbed soil. Native American monitoring may also be required. If the archaeological assessment identifies a project site as having medium sensitivity for archaeological resources, an archaeologist who meets the PQS shall be retained on an on-call basis rather than for	Less than significant with mitigation

Impact	Mitigation Measure (s)	Residual Impact
	full-time monitoring. The archaeologist shall inform all construction personnel prior to construction activities of the proper procedures in the event of an archaeological discovery. The training shall be held in conjunction with the project's initial onsite safety meeting and shall explain the importance and legal basis for the protection of significant archaeological resources. In the event that archaeological resources (artifacts or features) are exposed during ground-disturbing activities, MM CR-2(c) shall go into effect. **CR-2(c) Unanticipated Discovery of Archaeological Resources.** If archaeological resources are encountered during ground-disturbing activities, work in the immediate area should be halted and an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work, such as data recovery excavation, may be warranted to mitigate any significant impacts to historical resources. After a potentially significant resource is found, monitoring shall occur at the location for any future ground disturbance at the discretion of a qualified archaeologist.	
Impact CR-3. Implementation of the 2016 FMP would result in ground-disturbing activities, which could have the potential to destroy previously undiscovered significant paleontological resources. Impacts would be less than significant with mitigation.	**CR-3 Unanticipated Discovery of Paleontological Resources.** In the event an unanticipated fossil discovery is made during on-site grading or excavation, then in accordance with SVP (2010) guidelines, a qualified professional paleontologist shall be retained in order to examine the find and to determine if further paleontological resources investigation, such as salvage or paleontological monitoring, is warranted.	Less than significant with mitigation
Impact CR-4. Ground disturbing activities associated with development under the 2016 FMP could result in damage to or destruction of human remains but, with adherence to existing regulations, impacts would be less than significant.	None required	Less than significant
Greenhouse Gas Emissions		
Impact GHG-1. Construction and operation of development envisioned under the 2016 FMP would not result in GHG emissions exceeding AVAQMD thresholds. Impacts would be less than significant.	None required	Less than significant
Impact GHG-2. Implementation of the 2016 FMP would not conflict with applicable SCAG RTP/SCS GHG Reduction Strategies, and would be generally consistent with example	None required	Less than significant

Impact	Mitigation Measure (s)	Residual Impact
mitigation measures contained in the 2017 Scoping Plan. Implementation of the 2016 FMP would also not conflict with applicable potential GHG emission reduction strategies from the City of Lancaster's Draft CAP. Impacts would be less than significant.		
Hazardous Materials		
Impact HAZ-1. Based on the types of facilities proposed, and continuation of the routine transport, use, and disposal of hazardous materials, implementation of the 2016 FMP would create the potential for upset conditions involving the release of hazardous materials into the environment. However, compliance with Mitigation Measure HAZ-1, existing regulations, and on-campus programs would ensure potential impacts would be less than significant.	**HAZ-1 Lead-based Paint and Asbestos Containing Material Surveys.** Prior to the issuance of any demolition permits, a lead-based paint (LBP) and asbestos containing material (ACM) survey shall be completed by a Cal/OSHA certified professional, for all structures planned for renovation or demolition. ACM surveys shall follow the requirements listed in AVAPCD's Rule 1403 for demolition and renovation activities. LBP surveys shall follow United States EPA and Cal OSHA guidelines. Based on the results of the LBP and ACM surveys, abatement may be required prior to demolition or renovation. If abatement is required, all recommendations of the surveys shall be followed to properly dispose of identified hazardous materials.	Less than significant with mitigation
Impact HAZ-2. Implementation of the 2016 FMP would not 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. Compliance with existing regulations would reduce this impact to a less than significant level.	None required	Less than significant
Impact HAZ-3. Implementation of the 2016 FMP would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. Compliance with existing regulations would ensure potential impacts would be less than significant.	None required	Less than significant
Impact HAZ-4. Implementation of the FMP would not locate new development near hazardous materials sites. Therefore, future development as envisioned in the 2016 FMP would not create a hazard to the public and the environment and there would be no impact.	None required	No impact
Impact Haz-5. Implementation of the 2016 FMP would not impair implementation of or physically interfere with an adopted emergency	None Required	Less than significant

Impact	Mitigation Measure (s)	Residual Impact
response plan or emergency evacuation plan since the 2016 FMP would not interfere with designated evacuation routes in the vicinity of the project site and applicable emergency responders/services would continue to provide oversight in case of emergency. Therefore, this impact would be less than significant.		
Noise		
Impact N-1. Construction of individual projects accommodated by the 2016 FMP would intermittently generate temporary construction noise at nearby noise-sensitive receptor locations. Because AVCCD is not subject to the City's Municipal Code, which limits construction to daytime hours, mitigation would be required to ensure that construction of projects carried out under the 2016 FMP would not have significant negative impacts on noise-sensitive receptors, such as producing excessive noise levels during normal sleeping hours. Mitigation Measure N-1 would require AVCCD to carry out construction during the same hours as required under the City's Municipal Code and contains other measures to reduce construction noise impacts. Implementation of this measure would reduce temporary noise impacts from construction of projects carried out under the 2016 FMP to a less than significant level.	▪ **N-1 Construction-Related Noise Reduction Measures.** The following measures shall be implemented during construction of all phases of the 2016 FMP: a. **Mufflers.** During all project site excavation and grading, all construction equipment, fixed or mobile, shall be operated with closed engine doors and shall be equipped with properly operating and maintained mufflers consistent with manufacturers' standards. b. **Mobile and Stationary Equipment.** All stationary construction equipment shall be placed so that emitted noise is directed away from the nearest sensitive receptors. All mobile and stationary internal-combustion-powered equipment and machinery shall also be equipped with suitable exhaust and air-intake silencers in proper working order. c. **Equipment Staging Areas.** Equipment staging shall be located in areas that will create the greatest distance feasible between construction-related noise sources and noise-sensitive receptors. d. **Construction Routes.** All construction-related traffic shall be routed away from residential areas, to the extent feasible. e. **Temporary Noise Barriers.** If construction activity takes place within 100 feet of any off-campus noise-sensitive receptors such as neighboring residences; or any on-campus noise-sensitive receptors such as classrooms, physical education facilities, performing arts facilities; a temporary barrier no less than 6 feet high made of wood or other similar materials shall be constructed to limit the amount of noise affecting the sensitive receptor. However, if the sensitive receptor is not in use during construction, no temporary barrier shall be required. f. Construction Timing. Per Section 8.24.040 of the LMC, construction shall be limited to the hours of 7:00 a.m. to 8:00 p.m., Monday through Saturday when construction occurs within 500 feet of an occupied dwelling, apartment, hotel, mobile home or other place of residence.	Less than significant with mitigation

Impact	Mitigation Measure (s)	Residual Impact
Impact N-2. Development accommodated by the 2016 FMP would generate intermittent vibration levels during individual construction activities. However, vibration levels would not exceed FTA standards during construction or operation of projects carried out under the proposed 2016 FMP. This impact is less than significant with incorporated mitigation.	▪ Implementation of Mitigation Measure N-1 (f) would reduce vibration-related impacts to less than significant levels by limiting construction hours outside of normal sleeping hours; additional mitigation is not required.	Less than significant with mitigation
Impact N-3. Development facilitated under the 2016 FMP would incrementally increase traffic along roadways in and around the project site, thus exposing existing land uses to increased noise. However, increases in traffic would not expose noise-sensitive receptors to noise levels exceeding applicable standards. Impacts related to operational traffic noise would be less than significant.	None required	Less than significant
Impact N-4. Development accommodated by the 2016 FMP would increase on-site operational noise levels in and around the project site, thus exposing existing and future land uses to increased noise. The operation of an increased number of AVC facilities, including the Student Center, Academic Commons, Instructor Buildings, and other stationary sources (E.G., HVAC equipment), would not generate excessive noise levels at residential receptors. Impacts would be less than significant.	None required	Less than significant
Transportation and Traffic		
Impact T-1. Under the existing plus enrollment increase conditions, all study intersections would operate at acceptable levels of service for motor vehicles. This impact would be less than significant.	None required	Less than significant
Impact T-2. The forecast enrollment increase at the college would not result in project-generated vehicle trips that exceed Los Angeles County Congestion Management thresholds for arterial streets, highways, or regional transit facilities. Since implementation of the 2016 FMP would not conflict with the applicable county congestion management program, this impact would be less	None required	Less than significant

Impact	Mitigation Measure (s)	Residual Impact
than significant.		
Impact T-3. Implementation of the 2016 FMP would not increase hazards due to proposed design features. This impact would be less than significant.	None required	Less than significant
Impact T-4. Implementation of the 2016 FMP would not result in inadequate emergency access. This impact would be less than significant.	None required	Less than significant
Impact T-5. Implementation of the 2016 FMP would not substantially decrease performance, safety, or effectiveness of the existing pedestrian, bicyclist, and transit network. This impact would be less than significant.	None required	Less than significant
Tribal Cultural Resources		
Impact TCR-1. Construction and use of the project may cause a substantial adverse change in the significance of an unknown tribal cultural resource. Impacts would be less than significant with mitigation.	**TRC-1 Unanticipated Discovery of Tribal Cultural Resources.** In the event that cultural resources of Native American origin are identified during construction, all earth disturbing work in the vicinity of the find shall be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find and an appropriate Native American representative, based on the nature of the find, is consulted. If AVCCD determines that the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with state guidelines and in consultation with Native American groups. The plan shall include avoidance of the resource or, if avoidance of the resource is infeasible, the plan would outline the appropriate treatment of the resource in coordination with the archaeologist and the appropriate Native American tribal representative.	Less than significant with mitigation
Utilities and Service Systems		
Impact UTL-1. The 2016 FMP would not result in a determination by the Regional Water Quality Control Board that it will exceed wastewater treatment requirements because it will be served by the Los Angeles County Sanitation District, which is in compliance with applicable RWQCB requirements; therefore, impacts would be less than significant.	None required	Less than significant
Impact UTL-2. Full implementation of the 2016 FMP would incrementally increase demand on potable water and wastewater facilities; however, the increase would not exceed the capacity or supplies of the Los Angeles County Waterworks District 40 and the Lancaster Reclamation	None required	Less than significant

Impact	Mitigation Measure (s)	Residual Impact
Plant. Therefore, the 2016 FMP would not require the construction of new water or wastewater treatment facilities, or require new or expanded water supply entitlements, and impacts to water and wastewater supplies and facilities would be less than significant.		
Impact UTL-3. Solid waste would be generated by construction activities and increased student enrollment. This solid waste would be disposed of at local landfills. However, projected waste generation would remain within the capacity of local landfills and impacts would be less than significant.	None required	Less than significant
Impact UTL-4. Antelope Valley College is within a jurisdiction that is already meeting per capita resident and employee solid waste requirements. The 2016 FMP would comply with all applicable statutes related to solid waste and impacts would be less than significant.	None required	Less than significant

1 Introduction

This document is an Environmental Impact Report (EIR) for a proposed update of the Antelope Valley Community College District (AVCCD, or District) Facilities Master Plan (FMP), also known as the 2016 FMP. The proposed 2016 FMP (hereafter referred to as the "proposed project" or "project") is a guide for the future development of the Lancaster campus of Antelope Valley College (AVC), located at 3041 West Avenue K in the City of Lancaster and hereinafter also referred to as the project site. According to the 2016 FMP, the District supported 14,677 full-time equivalent students (FTES) in 2014 at both the Lancaster campus and its Palmdale Center (11,730 at the Lancaster campus), and is anticipated to accommodate 19,852 FTES by 2030, a total increase of 5,175 FTES (35.3 percent) and an annual increase of approximately 323 FTES (2.2 percent) (AVCCD 2016). These FTES increases are based on estimates of future demand for AVCCD's services. The 2016 FMP would accommodate, not cause, these projected FTES increases.

This section discusses (1) the project and EIR background; (2) the legal basis for preparing an EIR; (3) the scope and content of the EIR; (4) issue areas found not to be significant by the Initial Study; (5) the lead, responsible, and trustee agencies; and (6) the environmental review process required under the California Environmental Quality Act (CEQA). The proposed project is described in detail in Section 2, *Project Description*.

1.1 Environmental Impact Report Background

The AVCCD distributed a Notice of Preparation (NOP) of the EIR for a 30-day agency and public review period starting on May 29, 2018 and ending on June 27, 2018. In addition, AVCCD held an EIR Scoping Meeting on June 11, 2018 at the AVCCD Palmdale Center at 2301 East Palmdale Boulevard in Palmdale. The purpose of the meeting was to provide information about the proposed project to members of public agencies, interested stakeholders, and residents/community members, and to take any public comments on the scope and content of the EIR. No comments were received at the Scoping Meeting, but AVCCD received letters from three agencies in response to the NOP during the public review period. The NOP is presented in Appendix A of this EIR, along with the Initial Study that was prepared for the project and the NOP responses received. Table 1-1 summarizes the content of the letters and where the issues raised are addressed in the EIR.

Table 1-1 NOP Scoping Comments and Where Addressed in EIR

Agency	Topic	Where Topic is Addressed in EIR
California Department of Transportation (Caltrans)	▪ Transportation Impact Analysis (VMT) ▪ Complete streets and bicycle/pedestrian safety ▪ Promote alternative transportation ▪ Cumulative traffic impacts	Section 4.8(e), *Regulatory Setting* Section 4.8, *Transportation and Traffic*
California Native American Heritage Commission (NAHC)	▪ Assembly Bill 52 and Senate Bill 18 requirements	Section 4.9, *Tribal Cultural Resources*
Antelope Valley Air Quality Management District (AVAQMD)	▪ AVAQMD and CARB Air Quality Regulatory Rules and Significance Thresholds	Section 4.6, *Hazards and Hazardous Materials* Section 4.2, *Air Quality*

Copies of the NOP comments are provided in Appendix A.

1.2 Purpose and Legal Authority

The proposed project requires the discretionary approval of the AVCCD Board of Trustees; therefore, the project is subject to the environmental review requirements of CEQA. In accordance with Section 15121 of the *CEQA Guidelines* (California Code of Regulations, Title 14), the purpose of this EIR is to serve as an informational document that:

> "...will inform public agency decision makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project."

This EIR is to serve as an informational document for the public and AVCCD decision makers. The process will include public hearings before the Board of Trustees to consider certification of the Final EIR and approval of the proposed project.

1.3 Scope and Content

This EIR addresses impacts identified by the Initial Study to be potentially significant. The following issues were found to include potentially significant impacts and have been studied in the EIR:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Noise
- Transportation and Traffic
- Tribal Cultural Resources
- Utilities and Service Systems

In preparing the EIR, use was made of pertinent District policies and guidelines, certified EIRs and adopted CEQA documents, and other background documents. A full reference list is contained in Section 7, *References and Preparers*.

The alternatives section of the EIR (Section 6) was prepared in accordance with Section 15126.6 of the *CEQA Guidelines* and focuses on alternatives that are capable of eliminating or reducing significant adverse effects associated with the project while feasibly attaining most of the basic project objectives. In addition, the alternatives section identifies the "environmentally superior" alternative among the alternatives assessed. The alternatives evaluated include the CEQA-required "No Project" alternative and two alternative development scenarios for the project site.

The level of detail contained throughout this EIR is consistent with the requirements of CEQA and applicable court decisions. Section 15151 of the *CEQA Guidelines* provides the standard of adequacy on which this document is based. The *Guidelines* state:

> *"*An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of the proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection, but for adequacy, completeness, and a good faith effort at full disclosure."

1.4 Type of Environmental Impact Report

This EIR has been prepared as a Program EIR pursuant to Section 15168 of the CEQA Guidelines. As stated in the CEQA Guidelines:

A program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either:

1 Geographically

2 As logical parts in the chain on contemplated actions

3 In connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program

4 As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways

Individual developments implemented in accordance with the 2016 FMP may be able to rely on this EIR for CEQA compliance. However, due to the potential for specific impacts peculiar to a particular on-site development, and the long-term nature of its implementation, this EIR does not preclude the possibility that individual developments carried out under the 2016 FMP may need to undergo further environmental review under CEQA.

1.5 Issues Not Studied in Detail in the EIR

Section 4.11, *Impacts Found Not to be Significant*, summarizes issues from the environmental checklist that were addressed in the Initial Study (Appendix A). These include certain impacts in the issue areas of aesthetics (scenic resources), agricultural resources, air quality (odor), biological

resources (wetlands and habitat conservation plan conflict), geology and soils, hazards and hazardous materials (airport conflicts and wildland fires), hydrology and water quality, land use and planning, mineral resources, noise (airport noise), population and housing, public services, recreation, and transportation/traffic (air traffic patterns). As indicated in the Initial Study, there is no substantial evidence that significant impacts would occur in any of these issue areas.

1.6 Lead, Responsible, and Trustee Agencies

The *CEQA Guidelines* define lead, responsible and trustee agencies. AVCCD is the lead agency for the project because it holds principal responsibility for approving the project.

A responsible agency refers to a public agency other than the lead agency that has discretionary approval over the project. Responsible agencies include the Los Angeles Regional Water Quality Control Board (LARWQCB), which regulates water quality in the region, and the Antelope Valley Air Quality Management District (AVAQMD), which regulates air quality in the region. The AVAQMD submitted comments on the Initial Study, which is provided in Appendix A. Other agencies that are commonly responsible agencies include the California Department of Fish and Wildlife and California Department of Transportation. These agencies would not be responsible agencies for the 2016 FMP, but will have the opportunity to comment on this EIR.

A trustee agency refers to a state agency having jurisdiction by law over natural resources affected by a project. There are no trustee agencies for the proposed project.

1.7 Environmental Review Process

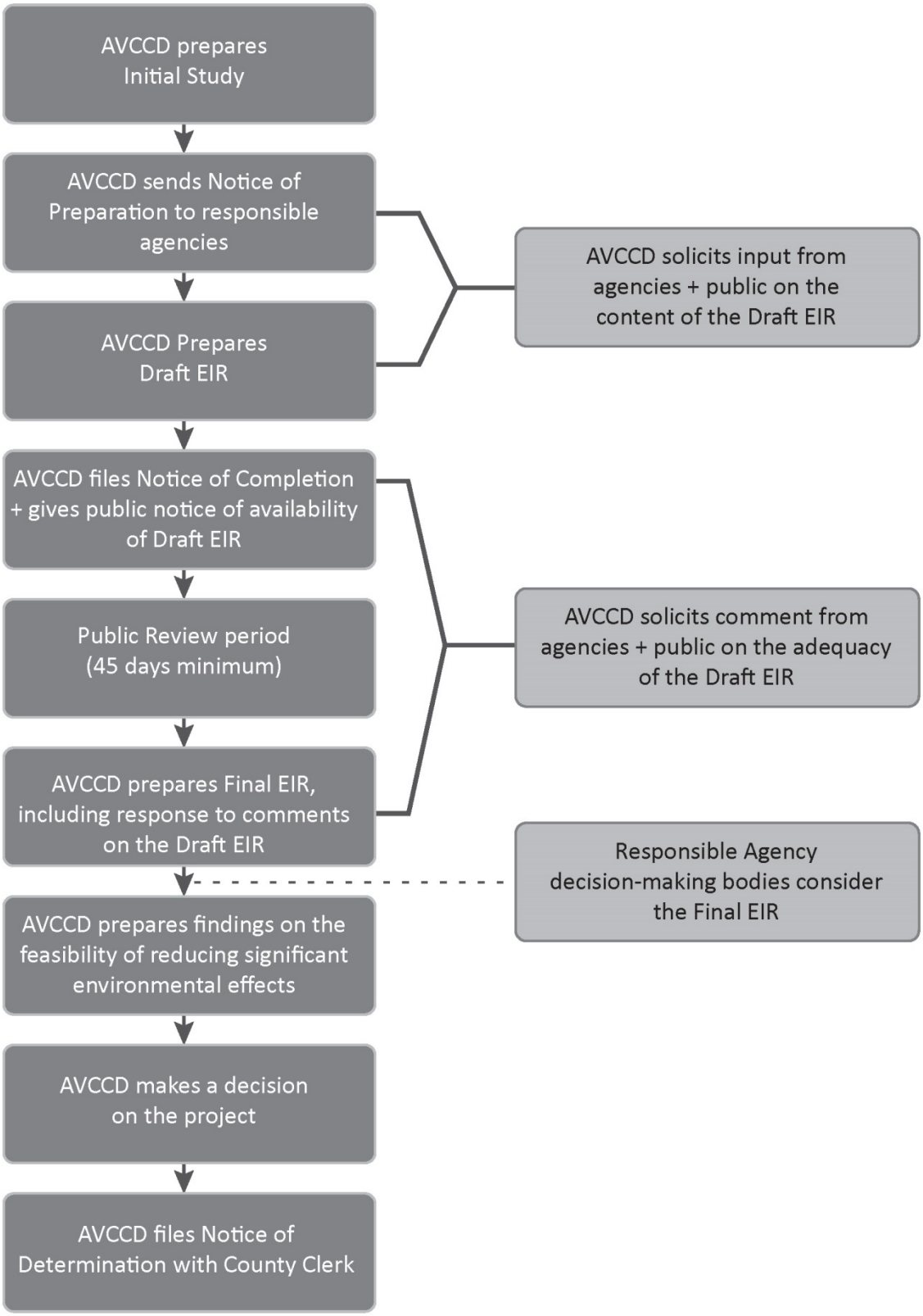
The environmental impact review process, as required under CEQA, is summarized below and illustrated in Figure 1-1. The steps are presented in sequential order.

1. **Notice of Preparation (NOP) and Initial Study**. After deciding that an EIR is required, the lead agency (AVCCD) must file a NOP soliciting input on the EIR scope to the State Clearinghouse, other concerned agencies, and parties previously requesting notice in writing (*CEQA Guidelines* Section 15082; Public Resources Code Section 21092.2). The NOP must be posted in the County Clerk's office for 30 days. The NOP may be accompanied by an Initial Study that identifies the issue areas for which the project could create significant environmental impacts.
2. **Draft EIR Prepared.** The Draft EIR must contain: a) table of contents or index; b) summary; c) project description; d) environmental setting; e) discussion of significant impacts (direct, indirect, cumulative, growth-inducing and unavoidable impacts); f) a discussion of alternatives; g) mitigation measures; and h) discussion of irreversible changes.
3. **Notice of Completion (NOC).** The lead agency must file a NOC with the State Clearinghouse when it completes a Draft EIR and prepare a Public Notice of Availability (NOA) of a Draft EIR. The lead agency must place the NOC in the County Clerk's office for 30 days (Public Resources Code Section 21092) and send a copy of the NOC to anyone requesting it (*CEQA Guidelines* Section 15087). Additionally, public notice of Draft EIR availability must be given through at least one of the following procedures: a) publication in a newspaper of general circulation; b) posting on and off the project site; and c) direct mailing to owners and occupants of contiguous properties. The lead agency must solicit input from other agencies and the public, and respond in writing to all comments received (Public Resources Code Sections 21104 and 21253). The minimum public review period for a Draft EIR is 30 days. When a Draft EIR is sent to the State

Clearinghouse for review, the public review period must be 45 days unless the State Clearinghouse approves a shorter period (Public Resources Code 21091).

4. **Final EIR.** A Final EIR must include: a) the Draft EIR; b) copies of comments received during public review; c) list of persons and entities commenting; and d) responses to comments.
5. **Certification of Final EIR.** Prior to making a decision on a proposed project, the lead agency must certify that: a) the Final EIR has been completed in compliance with CEQA; b) the Final EIR was presented to the decision-making body of the lead agency; and c) the decision making body reviewed and considered the information in the Final EIR prior to approving a project (*CEQA Guidelines* Section 15090).
6. **Lead Agency Project Decision.** The lead agency may a) disapprove the project because of its significant environmental effects; b) require changes to the project to reduce or avoid significant environmental effects; or c) approve the project despite its significant environmental effects, if the proper findings and statement of overriding considerations are adopted (*CEQA Guidelines* Sections 15042 and 15043).
7. **Findings/Statement of Overriding Considerations**. For each significant impact of the project identified in the EIR, the lead agency must find, based on substantial evidence, that either: a) the project has been changed to avoid or substantially reduce the magnitude of the impact; b) changes to the project are within another agency's jurisdiction and such changes have or should be adopted; or c) specific economic, social, or other considerations make the mitigation measures or project alternatives infeasible (*CEQA Guidelines* Section 15091). If an agency approves a project with unavoidable significant environmental effects, it must prepare a written Statement of Overriding Considerations that sets forth the specific social, economic, or other reasons supporting the agency's decision.
8. **Mitigation Monitoring Reporting Program.** When the lead agency makes findings on significant effects identified in the EIR, it must adopt a reporting or monitoring program for mitigation measures that were adopted or made conditions of project approval to mitigate significant effects.
9. **Notice of Determination (NOD).** The lead agency must file a NOD after deciding to approve a project for which an EIR is prepared (*CEQA Guidelines* Section 15094). A local agency must file the NOD with the County Clerk. The NOD must be posted for 30 days and sent to anyone previously requesting notice. Posting of the NOD starts a 30 day statute of limitations on CEQA legal challenges (Public Resources Code Section 21167[c]).

Figure 1-1 Environmental Review Process



2 Project Description

This section describes the proposed project, including the project applicant, the project site and surrounding land uses, major project characteristics, project objectives, and discretionary actions needed for approval.

2.1 Project Applicant

Antelope Valley Community College District
3041 West Avenue K
Lancaster, California 93536-5426

2.2 Lead Agency Contact Person

Antelope Valley Community College District
Doug Jensen, Executive Director, Facilities Services
(661) 722-6526

2.3 Project Location

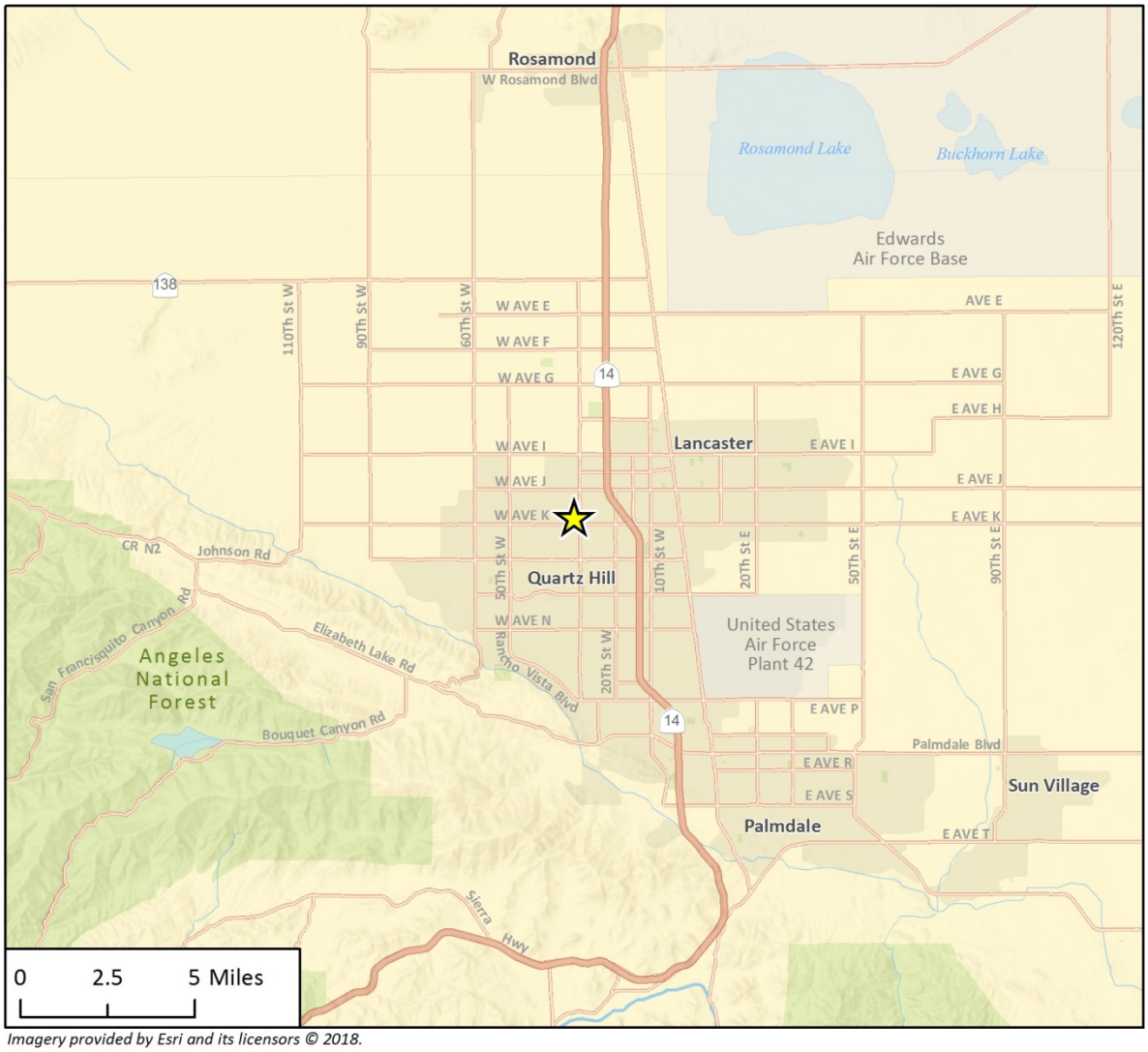
The project site is the Lancaster campus of Antelope Valley College (AVC), which is located at 3041 West Avenue K in the City of Lancaster, Los Angeles County, in the block of land between West Avenue K on the south, 35th Street West on the west, West Ave J8 on the north, and 30th Street West on the east. The project site is located about 2.5 miles southwest of downtown Lancaster, 7.5 miles northwest of downtown Palmdale, 12 miles east of the Antelope Valley Poppy Reserve, and 42 miles north of downtown Los Angeles. The project site encompasses approximately 135 acres. Figure 2-1 shows the location of the site in the region and Figure 2-2 shows the project site in its local context.

2.4 Project Characteristics

The proposed project is an update of the Antelope Valley Community College District (AVCCD, or District) Facilities Master Plan (FMP), also known as the 2016 FMP. AVCCD's FMP (known as the 2020 FMP) was last updated in 2005. AVCCD certified an EIR for the 2020 FMP in September 2005.

The 2016 FMP is guide for the future development of the Lancaster campus of AVCCD, also known as Antelope Valley College (AVC), and hereinafter also referred to as the project site. AVCCD is one of 72 community college districts in California. AVCCD consists of AVC's Lancaster campus; and the AVC Palmdale Center, a leased facility in central Palmdale. According to the 2016 FMP, AVCCD supported 14,677 full-time equivalent students (FTES) in 2014 at both campuses, and is anticipated to accommodate 19,852 FTES by 2030. This is a total increase of 5,175 FTES (35.3%), which is an annual increase of approximately 323 FTES (2.2%) (AVCCD 2016). These FTES increases are based on estimates of future demand for AVCCD's services. The 2016 FMP would accommodate, not cause,

Figure 2-1 Regional Location



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Project Site

N

Figure 2-2 Project Site Location

Imagery provided by Google and its licensors © 2018.

these projected FTES increases, which are projected to occur with or without implementation of the 2016 FMP. FTES by campus are shown in Table 2-1.

2.5 Existing Site Characteristics

2.5.1 Current Land Use Designation and Zoning

The project site is located in the western portion of the City of Lancaster, on the Lancaster campus of Antelope Valley College (AVC). The project site has a City of Lancaster General Plan land use designation of Public School (P, S) and a zoning designation of School (S).

2.5.2 Surrounding Land Uses

The project site is located in the western portion of Lancaster. As shown in Figure 2-2 and Figure 2-3, the project site is characterized by a central core of academic buildings set among areas landscaped with lawns and other ornamental vegetation, but with fewer lawn areas north of a line extending west from West Avenue J 12. This campus core is surrounded by perimeter parking lots fronting on the major streets that border the campus (except at the corner of West Avenue K and 30th Street West, which is occupied by the Administration Building and an area landscaped with lawn and trees), and athletic fields on the western edge of campus. Buildings on the project site are generally one to three stories in height, with some taller structures such as the Performing Arts Theater and athletic field lighting.

Areas surrounding the project site are mostly developed with residential subdivisions, although a considerable amount of undeveloped land also exists in this area. Other nearby uses include the following:

- Several elementary schools and a middle school are located within ½ mile of the project site
- The Seventh Day Adventist Church is located directly across 30th Street West from the project site, and the Church of Jesus Christ of Latter-Day Saints and the Bethel Baptist Church (including the Bethel Christian School) are located directly across West Avenue K from the project site
- The Prestige Assisted Living Center and the John P. Eliopolus Hellenic Center (an event center with banquet facilities) are located approximately 0.2 mile south of the southeastern corner of the project site on 30th Street West and West Avenue K 4
- Rawley Duntley Park is located directly across West Avenue K from the project site. It has a strip of open space running along its western edge, connecting to the Prime Desert Woodland Preserve located approximately ¼ mile to the south

Several parcels of land located on the south side of West Avenue K directly across from the project site on either side of 30th Street West are zoned for commercial uses, but these parcels are currently undeveloped.

Buildings associated with surrounding uses are generally one to two stories in height, with a few taller structures such as the church steeple/tower at the Church of Jesus Christ of Latter-Day Saints.

Table 2-1 Enrollment Patterns by Location

Location	2014	2020	2025	2030	% Change	Annual % Change
Palmdale Center	902	1,099	1,293	1,428	58.3%	3.6%
Lancaster Campus	11,730	13,220	14,768	15,908	35.6%	2.2%
Both	2,045	2,136	2,279	2,516	23.0%	1.4%
Total	14,677	16,454	18,140	19,852	35.3%	2.2%

Source: AVCCD 2016

In addition, according to the Traffic Impact Analysis (TIA) conducted by Fehr & Peers (2018), the Lancaster campus currently has 12,946 FTES as of February 2018. Therefore, implementation of the 2016 FMP would result in a net increase in FTES by 2,962 people from 2018 to 2030, representing an approximately 23 percent increase through 2030.

The 2016 FMP is a strategy for modifying the physical campus in Lancaster to accommodate growth and change over the next 30 years. A separate FMP for the Palmdale Center is presently being developed to support proposed expansion plans of the center and will be incorporated into the District Facilities Master Plan at a later date. The 2016 FMP is based on findings from the AVCCD's Educational Master Plan. It provides a guide for long-term land and building use, and serves as a guide for near-term decisions on program planning and implementation, resource allocation, setting priorities and other College administrative matters which influence the student educational experience at AVC (AVC 2018a).

The 2016 FMP presents an overall picture of the future developed campus and includes recommendations for new construction, building renovations, change of use, and site development projects. It recommends the demolition and replacement of a number of the oldest buildings on the campus. Functions currently housed in these facilities will be relocated to new or existing facilities and will be designed to support the new campus zoning diagram and address projected instructional program needs. Although the 2016 FMP does not specify an exact amount of new square footage that would be added to the AVC campus upon full implementation of the FMP, it identifies the need for additional assignable square feet (ASF) on campus (see page 22 of the FMP). ASF is the assignable or usable space within a building (AVCCD 2016).

A map of AVC's current campus is shown in Figure 2-3. Projects included in the 2016 FMP are listed in Table 2-2 and shown in Figure 2-4.

Figure 2-3 Existing AVC Campus Map

Source: AVCCD, 2016

Figure 2-4 2016 Facilities Master Plan Map

Source: AVCCD, 2016

Table 2-2 2016 FMP Projects

Demolition	Relocation	New Construction	Renovations/Change of Use
Student Services	T100	Academic Commons	Applied Arts
Student Center	T850	Arts Complex	Business Education
Fine Arts 1, 2, 3, 4	T851	Campus Security	Gymnasium
Learning Center		Community Center	Field House
Faculty Office 1, 2, and 3		CSUB + University Center	
Lecture Hall		CTE Instruction	
Liberal Studies 1, 2, and 3		Field House	
Math/Engineering		Instruction Building 1 (IB1)	
Technical Education 1 and 2		Instruction Building 2 (IB2)	
Learning Center		Instruction Building 3 (IB3)	
SOAR High School		SOAR High School	
CSUB		Student Center Student Services	
T503			
T504			
T800			

Source: AVCCD 2016

2.5.3 Planning and Design

Planning and design decisions in the 2016 FMP are based on two themes:

- To respect and honor the history of the original Antelope Valley College campus
- To approach design of the overall campus in an authentic way which ties the campus to its specific place

The Campus Development Guidelines in the 2016 FMP provide a framework for the future design of site and facilities projects. They are intended to ensure the development of AVC as a cohesive campus while supporting creative expression and innovative design solutions for individual projects. The Development Guidelines include the following elements:

Campus Guidelines

The campus guidelines recommend a new landscape pattern using existing grid system of the campus and surrounding community and overlaying it with a secondary system inspired by the natural curvilinear patterns seen within river washes inherent to the Antelope Valley floor in which Lancaster is located. The existing linear north-south and east-west grid of campus walks forms the backbone of the proposed pedestrian circulation system, while the more organic secondary system (nicknamed the garden ribbon) meanders through the grid, helping to create and define the edges of exterior gathering and learning areas.

Landscape Guidelines

The landscape guidelines recommend that the existing campus grid of walkways be designed with a linear planting of shade trees, pedestrian lightings, and a variety of seating opportunities; while the secondary pedestrian system along the garden ribbon is envisioned as a more passive system than the utilitarian pedestrian spines. The landscape guidelines include different landscape typologies for the project site, including pedestrian spines and walks, landscape field, courtyards, garden ribbon, student plaza, historic commons, community corner, and community engagement walks.

Building Guidelines

The primary purpose of the building guidelines is to define a set of general design criteria for all future buildings on the project site, including new construction, additions and renovations. The ultimate goal is to create a well-defined, consistent physical campus environment that strengthens the AVC identity, fosters intellectual and social exchange, and inspires the entire campus and surrounding community. These guidelines focus on these primary elements:

- Transform the AVC campus identity
- Create a strong sense of place for AVC
- Enhance AVC's students' pride
- Respect and enhance the AVC legacy through authentic design

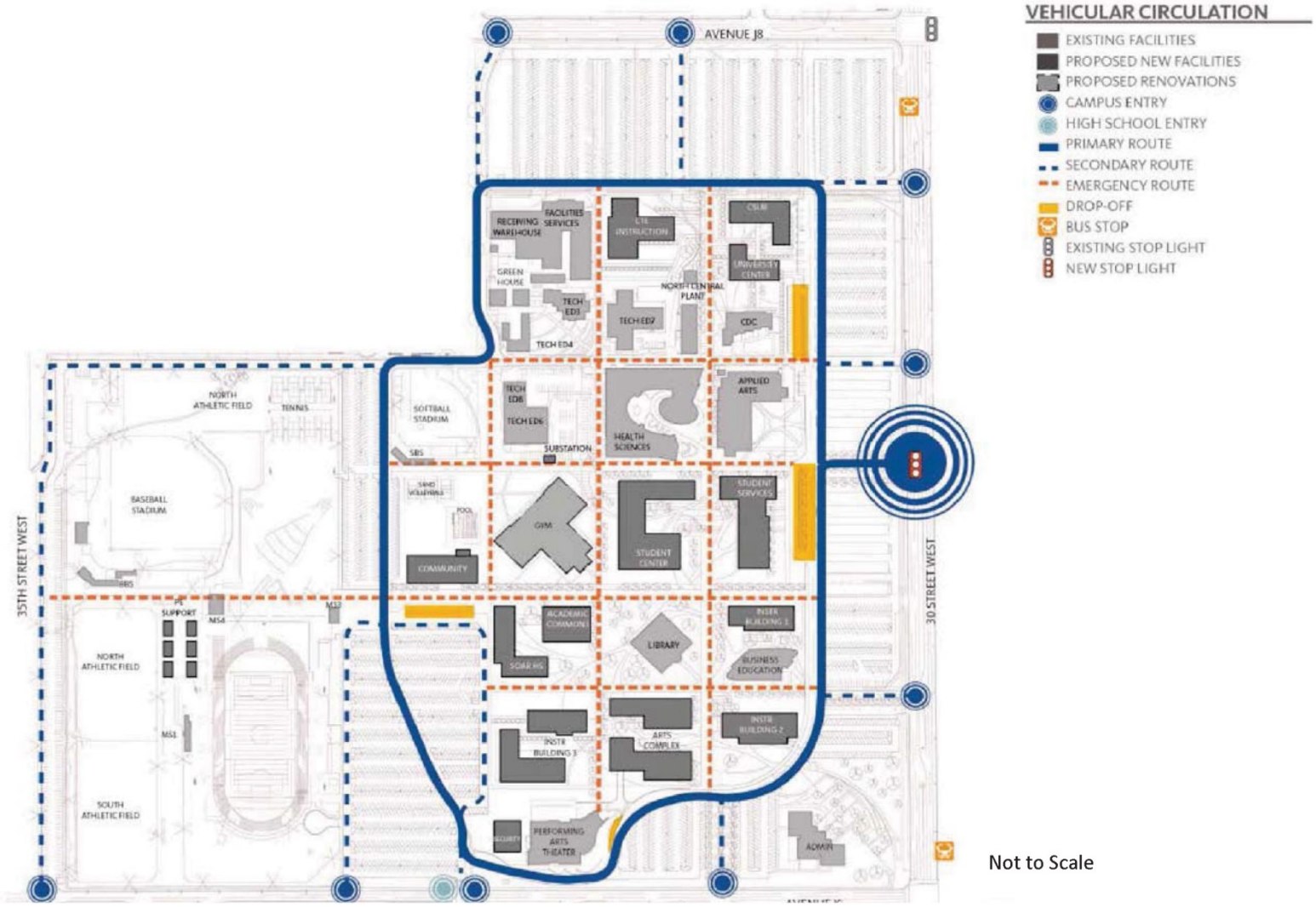
The building guidelines provide guidance for place-making, form, massing, wayfinding, façade articulation, materiality, color palette, and sustainability.

2.5.4 Parking and Site Access

The 2016 FMP includes guidelines for determining parking needs. Under the guideline of providing one space per five enrolled students, AVC's current parking need is 2,589 spaces for its current enrollment of 12,946 students. According to the 2016 FMP, AVC's current parking supply is 3,794 spaces, which exceeds its current parking need by 1,205 spaces. According to the 2016 FMP, AVC will experience an increase in enrollment by nearly 3,000 students between 2018 and 2030, from 12,946 students to 15,908 students. Under the same standard of one space per five enrolled students, these 15,908 students would require 3,182 spaces. The 2016 FMP does not include any increase in parking supply, but the existing 3,794 spaces would still leave an excess capacity of 612 spaces when compared to this projected need.

The 2016 FMP's site access and vehicular circulation plan is shown in Figure 2-5. The 2016 FMP includes construction of a new driveway at the intersection of 30th Street West and West Avenue J-12, and the closure of two existing driveways on 30th Street West, located immediately south of the new access point. Two new pick-up and drop-off locations are planned under the 2016 FMP: one on the east side of the AVC campus, near the new 30th Street West entry, and one on the west side of campus, between the new Community Center and SOAR High School. Internal circulation on campus is provided in a loop connecting parking lots on the north, east, and south ends of campus with campus buildings and adjacent neighborhood streets to the west and northwest.

Figure 2-5 Site Access and Vehicle Circulation



Source: Fehr & Peers 2018

The 2016 FMP will provide pedestrian access at the intersection of 30th Street West and West Avenue K and the intersection of 30th Street West and the northernmost driveway on the east side of the AVC campus. Primary, secondary, and tertiary paths will provide internal circulation for pedestrians, connecting bus stops along 30th Street West and parking lots on the perimeter of campus to buildings and areas of student gathering on campus.

2.5.5 Phased Development and Construction

The 2016 FMP is a strategy for modifying the physical campus in Lancaster to accommodate growth and change over the next 30 years. It presents an overall picture of the future developed campus and includes recommendations for new construction, building renovations, change of use, and site development projects. These activities would be carried out throughout the life of the FMP. Drawings of proposed facilities in the FMP are conceptual sketches that highlight the location and purpose of improvements. The final design of each site and facility project will take place as projects are funded and detailed programming and design occurs. Similarly, while the FMP contains proposed phasing for individual projects carried out under the FMP (see below, and the "phased development" section of the FMP), the exact timing and order of these projects may be adjusted over time as projects are funded and detailed programming and design occurs.

Construction Phase 1A

The following spaces or structures are planned to be built during Phase 1A, which is expected to be complete by about 2021:

- Swing space area (by the existing T100 building)
- Swing space area (by Fine Arts building)
- Swing space area (by CSUB)
- New tennis courts
- Campus security building

Construction Phase 1B

The following structures are planned to be removed, relocated, and/or built during Phase 1B, which is also expected to be complete by about 2021:

Vacate and Remove

- Lecture Hall (LH)
- Office 1 (OF1)
- Liberal Studies (LS1, LS2)
- Office 3 (OF3)
- Security (T800)
- Tennis Courts
- T503
- T504

Vacate and Relocate

- T850 and T851

Build

- CTE Instruction
- 30th Street Entry
- Student Services
- Academic Commons
- Adaptive PE Pool + Sand Volleyball
- Field House (partial)

Construction Phase 2

The following structures are planned to be removed, relocated, renovated, and/or built during Phase 2, which is expected to be complete by about 2023:

Vacate and Remove

- TE1 and TE2
- Math-Engineering (ME)
- Office 2 (OF2)
- Learning Center (LC)
- Student Services (SSV)
- CSUB
- All swing spaces

Vacate and Relocate

- T100

Renovate

- Gym

Build

- Instructional Building 1
- Student Center
- Instructional Building 2
- Field House (finish)
- SOAR High School
- CSUB & University Center

The timeframe for completion of projects in Phase 3 and Phase 4 is currently undetermined, but is expected to occur after Phase 1 and Phase 2.

Construction Phase 3

The following structures are planned to be removed or built during Phase 3:

Vacate and Remove

- Student Center to New Student Center

- SOAR High School to New SOAR High School

Build

- Arts Complex

Construction Phase 4

The following structures are planned to be removed, built, or renovated during Phase 4:

Relocate and Remove

- Fine Arts to the Arts Complex

Build

- Instructional Building 3

Renovate/Change of Use

- Applied Arts
- Business Education

The only construction associated with the 2016 FMP that would have an off-site component would be the new campus entry at the intersection of 30th Street West and West Avenue J-12. Some of this construction would occur within the right-of-way of 30th Street West, which borders, but is not actually on, the project site. Some of this work may require temporary lane closures on 30th Street West during construction, but should not require any full road closures. During construction, AVCCD will follow its own standard best practices relating to construction traffic:

- Construction vehicles and trucks will use City of Lancaster designated truck routes when travelling to and from individual construction sites
- A flag person will be employed as needed to direct traffic when heavy construction vehicles enter the campus from the surrounding streets
- Construction-related truck traffic will be scheduled to avoid peak travel times on the I-14 Freeway, as feasible
- If major pedestrian routes on campus are temporarily blocked by construction activities, alternate routes around construction areas will be provided. These alternate routes will be posted on campus for the duration of construction

2.6 Project Objectives

The 2016 FMP is an extension of the 2016 Educational Master Plan (EMP) prepared for AVCCD. As such, the objectives of the proposed project mimic the goals contained in the 2016 EMP. AVCCD's Strategic Planning Committee held six workshops in the spring of 2016 to consider goals for the institution over the next several years. The Strategic Planning Committee elaborated on each goal, and associated sub-goals, by identifying a responsible office, completion dates, resources needed, and measures of success. Collectively, these elements form a three-year strategic plan for 2016-2019. The project objectives are the following:

- Strengthen Institutional Effectiveness measures and practices
- Increase efficient and effective use of all resources, including technology, facilities, human resources, and business services
- Focus on utilizing proven instructional strategies that will foster transferrable intellectual skills
- Advance more students to college-level coursework by developing and implementing effective placements tools
- Align instructional programs to the skills identified by the labor market

2.7 Required Approvals

The following entitlements are required for the proposed project:

- Approval of the 2016 FMP by the AVCCD Board of Trustees

3 Environmental Setting

This section provides a general overview of the environmental setting for the proposed project. More detailed descriptions of the environmental setting for each environmental issue area can be found in Section 4, *Environmental Impact Analysis*.

3.1 Regional Setting

The project site is located in the City of Lancaster, approximately 2.5 miles southwest of downtown Lancaster, and approximately 7.5 miles northwest of downtown Palmdale. It is located at 3041 West Avenue K, bounded by West Avenue K to the south, 35th Street West to the west, West Avenue J8 to the north, and 30th Street West to the east. The approximately 135-acre site is currently occupied by the Lancaster campus of Antelope Valley College (AVC). Figure 2-1 in Section 2.0, *Project Description*, shows the location of the project site in the region. Figure 2-2 shows the location of the project site in relation to the surrounding neighborhood.

A grid system of east-west and north-south roadways, including major, secondary, and collector streets, provides vehicular access throughout the City. The major roadways include Avenue H, Avenue I, Avenue J, and Avenue K, as well as 30th Street West, 20th Street West, 15th Street West, 10th Street West, and Sierra Highway. The closest highways are the State Route 14 (SR 14) freeway, and State Route 138 (SR 138). SR 14 is located approximately 1.4 miles east of the project site. It runs in a north-south direction through Lancaster, continuing south to its junction with Interstate 5 near Santa Clarita and north to its junction with US Highway 395 near Inyokern. SR 138 is located approximately 6.5 miles north of the project site. SR 138 runs in an east-west direction from its junction with Interstate 5 near Gorman to its junction with SR 14 approximately 6.7 miles northeast of the project site. It then runs south as a freeway, east of the project site, towards the City of Palmdale, where it again diverges from SR 14, heading east through Palmdale as Palmdale Boulevard.

The desert climate of the region produces high temperatures in the summer months with cooler temperatures in the winter months. Rainfall is limited to approximately 7 inches per year. Lancaster is located in the Mojave Desert Air Basin, which is currently designated as nonattainment for both State 24-hour and annual average PM_{10} standards. Lancaster is located approximately 64 miles inland from the coastline of the Pacific Ocean.

3.2 Project Site Setting

As shown in Figure 2-2 in Section 2, *Project Description,* the project site is bordered by residential development to the north, south, east, and west, interspersed with several churches, schools, and parks/open space. There is a strip of open space immediately to the west of the project site; a church to the east across 39th Street West; and two churches, a school, and a park south of the project site, across West Avenue K.

The project site is currently occupied by the Lancaster campus of AVC, and has a City of Lancaster General Plan land use designation of Public School (P, S). The site is zoned S (School), as defined by

the City's Zoning Ordinance and the Plan for Physical Development Section of the General Plan. Uses permitted in the S designation include elementary, middle, and high-schools; and colleges and associated uses and activities including day care facilities and dormitories.

3.3 Cumulative Development

In addition to the specific impacts of individual projects, CEQA requires EIRs to consider potential cumulative impacts of the proposed project. CEQA defines "cumulative impacts" as two or more individual impacts that, when considered together, are substantial or will compound other environmental impacts. Cumulative impacts are the combined changes in the environment that result from the incremental impact of development of the proposed project and other nearby projects. For example, traffic impacts of two nearby projects may be less than significant when analyzed separately, but could have a significant impact when analyzed together. Cumulative impact analysis allows the EIR to provide a reasonable forecast of future environmental conditions and can more accurately gauge the effects of a series of projects.

The proposed project is a master plan. By its nature, a master plan considers cumulative impacts insofar as it considers future, cumulative development that could occur within the project area. Therefore, cumulative impacts are treated somewhat differently than they would be for a project-specific development, since future growth at the Lancaster campus of AVC is accounted for by the proposed project and the project would accommodate, not cause, demand for community college services created by local and regional population growth and development.

Analyses of each impact area's cumulative impacts are addressed in each issue area discussion in Section 4 of this EIR. The geographic scope of some of these cumulative impact analyses are local and include localized impacts, while others are regional or global in nature. For example, the analyses of air quality and greenhouse gases impacts are generally cumulative in nature, since thresholds of significance for these impacts are generally designed to mitigate regional or even global impacts. The analysis of cumulative traffic and related impacts (i.e., traffic noise) considers the effects of regional traffic growth, based on existing and future traffic volumes from the current City of Lancaster Traffic Model, which in turn takes into account regional forecasts such as Regional Transportation Plan (RTP) of the Southern California Association of Governments (SCAG).

As stated in Section 15130 of the state CEQA Guidelines, the following elements are necessary to an adequate discussion of significant cumulative impacts:

(A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or

(B) A summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the lead agency.

This information is provided below.

Expected population growth in Lancaster and Los Angeles County are summarized in Table 3-1.

Table 3-1 Existing and Future Population Estimates for the City of Lancaster and Los Angeles County

Location	Population Estimates				Average Annual Percent Growth (2018 – Applicable Date)[1]
	2018	2030	2035	2040	
City of Lancaster (General Plan Forecast)	161,485	259,696	–	–	5.1 (2030)
City of Lancaster (SCAG Forecast)	161,485[2]	–	–	209,900	1.4 (2040)
Los Angeles County	10,283,729	–	11,353,000	11,541,800	0.6 (2035)

[1] Rounded to the nearest tenth percent

[2] Assumes same population estimates from Department of Finance (DOF) 2018

Source: DOF 2018a, City of Lancaster 2009b, County of Los Angeles 2015, SCAG 2016a

As shown in Table 3-1, the Lancaster General Plan forecasts that the City's population will grow at an average annual rate of 5.1 percent between 2018 and 2030, while SCAG forecasts that the City will grow at average annual rate of 1.4 percent between 2018 and 2040. The Los Angeles County General Plan forecasts that annual percent growth for the entire County from 2018 to 2035 will be 0.6 percent, showing that local growth is expected to exceed that of the County as a whole. The 2016 FMP anticipates a 2.2 percent annual percent enrollment growth rate for AVC between 2014 and 2030, which is consistent with estimates for future local growth (falling between the City's forecast and SCAG's forecast), but exceeding growth estimates for the County as a whole. These estimates are consistent with the fact that the project would accommodate, not cause, local and regional population growth and development.

Currently planned and pending projects in Lancaster as of April 2016, obtained from the City's Development Services Department's website, are shown in Figure 3-1 and listed in Table 3-2. The City of Lancaster was contacted to update this list, and identified three additional active[1] residential developments within a half mile of the project site. These developments (tentative tract map (TTM) projects 61681, 60430, and 60664) are also included in Table 3-2 and shown in Figure 3-2.

[1] "Active" means that the tentative tract map has not expired, but has not yet been recorded.

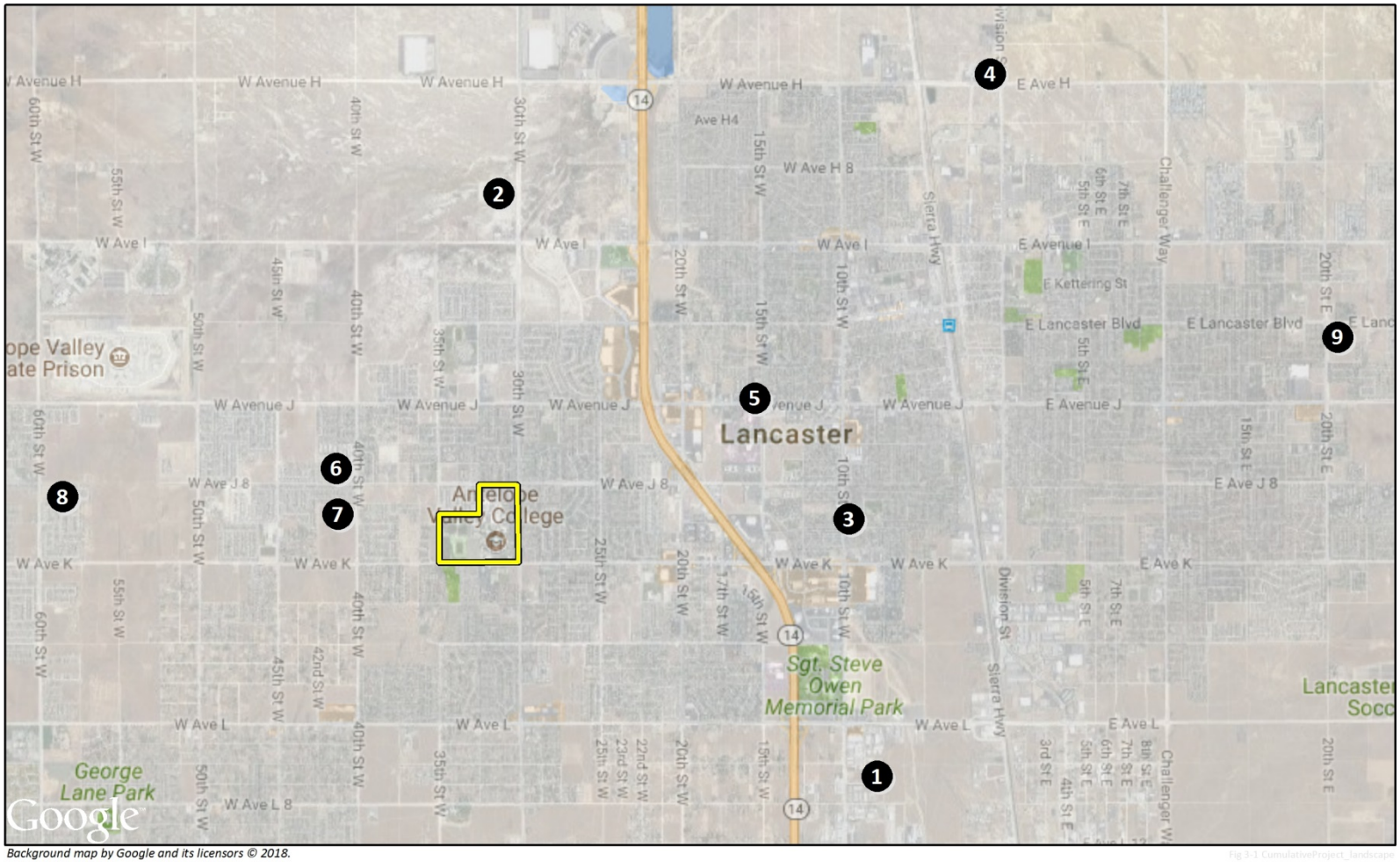
Table 3-2 Cumulative Projects List

Project No.	Project Description	Project Location
City of Lancaster		
1	Department of Motor Vehicles	Between W Avenue L and W Avenue L 8 on 8th Street W
2	Copper Square Apartments (204 units)	Northwest of the intersection of W Avenue I and 30th Street W
3	Premiere Rehabilitation Center	Between W Avenue J 8 and W Avenue J 12 on 10th Street W
4	Pacific Auto Recycling Center	Northwest of the intersection of E Avenue H and Division Street
5	Medical office – Dr. Satey	Between 17th Street W and 16th Street W on W Avenue J
6	TR 60428: American Premiere – Independence	Northwest of the intersection of W Avenue J 8 and 40th Street W
7	TR 53102: Pacific Communities – Larkspur	Southwest of the intersection of W Avenue J 8 and 40th Street W
8	TR 60034: Harris Homes	Near the corner of W Avenue J 8 and 60th Street W
9	TR 54025: GJH Dev. – Liberty Crossing	Southeast corner of the intersection of E Lancaster Boulevard and 20th Street E
10	TTM 61681: Subdivision for 38 single family lots	Northeast corner of 36th Street West and Avenue J-12
11	TTM 60430: Subdivision for 82 single family lots	Between 36th Street West and 37th Street West on Avenue J-11
12	TTM 60664: Subdivision for 39 single family lots	Between Avenue K and Avenue K-4 west of Alep Street

Notes: TR = Tract, TTM = tentative tract map

Source: Cumulative project details were sourced from the City of Lancaster Development Services Department (City of Lancaster 2016a, Cervantes 2018)

Figure 3-1 Major Developments Under Construction in the City of Lancaster (April 2016)



Background map by Google and its licensors © 2018.
Cumulative Projects from the City of Lancaster, 2016.

1 Cumulative Projects

Project Site

0 0.5 1 Miles

N

Cumulative Projects

1 - Department of Movtor Vehicles (DMV)
2 - Copper Square Apartment (204 units)
3 - Premiere Rehabilitation Center
4 - Pacific Auto Recycling Center
5 - Medical office - Dr. Satey
6 - American Premier - Independence (TR 60428)
7 - Pacific Communities - Larkspur (TR 53102)
8 - Harris Homes (TR 60034)
9 - GJH Dev - Liberty Crossing (TR 54025)

Figure 3-2 City of Lancaster Active Projects within One-half Mile of the Project Site

Background map by Google and its licensors © 2018.
Active Projects from Cervantes, 2018.

1 Active Projects

Project Site

0 500 1,000 Feet

N

Active Projects
1 - 10 TTM 61681
2 - 11 TTM 60430
3 - 12 TTM 60664

4 Environmental Impact Analysis

This section discusses the possible environmental effects of the AVCCD 2016 FMP Project for the specific issue areas that were identified through the scoping process as having the potential to experience significant effects. "Significant effect" is defined by the *CEQA Guidelines* §15382 as:

> "…a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment, but may be considered in determining whether the physical change is significant."

The assessment of each issue area begins with a discussion of the environmental setting related to the issue, which is followed by the impact analysis. In the impact analysis, the first subsection identifies the methodologies used and the "significance thresholds," which are those criteria adopted by the lead agency (in this case the Antelope Valley Community College District) and other agencies, universally recognized, or developed specifically for this analysis to determine whether potential effects are significant. The next subsection describes each impact of the proposed project, mitigation measures for significant impacts, and the level of significance after mitigation. Each effect under consideration for an issue area is separately listed in bold text, followed by the discussion of the effect and its significance. Each bolded impact statement also contains a statement of the significance determination for the environmental impact as follows:

- **Significant and Unavoidable**. An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved per §15093 of the CEQA Guidelines.
- **Less than Significant with Mitigation Incorporated**. An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings under §15091 of the CEQA Guidelines.
- **Less than Significant**. An impact that may be adverse, but does not exceed the threshold levels and does not require mitigation measures. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.
- **No Impact.** The proposed project would have no effect on environmental conditions or would reduce existing environmental problems or hazards.

Following each environmental impact discussion is a list of mitigation measures (if required) and the residual effects or level of significance remaining after implementation of the measure(s). In cases where the mitigation measure for an impact could have a significant environmental impact in another issue area, this impact is discussed and evaluated as a secondary impact. The impact analysis concludes with a discussion of cumulative effects, which evaluates the impacts associated with the proposed project in conjunction with other planned and pending developments in the area listed in Section 3.0, *Environmental Setting*. The *Executive Summary* of this EIR summarizes all impacts and mitigation measures that apply to the proposed project.

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4.1 Aesthetics

This section evaluates the proposed project's potential impacts related to aesthetics, including potential impacts on scenic vistas, visual character and quality, and impacts from light and glare. Scenic resources are evaluated in the Initial Study (Appendix A).

4.1.1 Setting

a. Regional Setting

The 135-acre Antelope Valley College campus (the project site) is located in the City of Lancaster, approximately 2.5 miles southwest of downtown Lancaster. It is located at 3041 West Avenue K, bounded by West Avenue K to the south, 35th Street West to the west, West Avenue J8 to the north, and 30th Street West to the east.

The City of Lancaster is characterized by a pattern of low-density land uses. Most developed areas of the City lie in the area between 40th Street East on the east, 70th Street West on the west, West Avenue H on the north, and West Avenue L on the south. Areas of rural residential development and undeveloped land extend beyond this main urban development area to 107th Street in the east, 110th Street in the west, West Avenue E on the north, and Avenue N on the south. A central core along Highway 14 and Sierra Highway consists of a mix of land uses, including commercial, office and civic uses, and old and new single and multi-family residential. The Central Business District is located along West Lancaster Boulevard between Sierra Highway and 10th Street West (City of Lancaster 2009a).

b. Campus Setting

The campus is dominated by large-scale academic buildings and facilities, including lecture halls, residence halls, dining halls, recreational fields, sidewalks, pathways, parking lots, and supporting infrastructure (including lighting). The campus is primarily surrounded by developed properties, including existing residential neighborhoods, mature tree-lined streets, and two churches, but a considerable amount of undeveloped land also exists in the area. Other nearby uses include the following:

- Several elementary schools and a middle school exist within ½ mile of the project site
- The Seventh Day Adventist Church is located directly across 30th Street West from the project site, and the Church of Jesus Christ of Latter-Day Saints and the Bethel Baptist Church (including the Bethel Christian School) are located directly across West Avenue K from the project site
- The Prestige Assisted Living Center and the John P. Eliopolus Hellenic Center (an event center with banquet facilities) are located approximately 0.2 miles south of the southeastern corner of the project site on 30th Street West and West Avenue K 4
- Rawley Duntley Park is located directly across West Avenue K from the project site, with a strip of open space running along its western edge connecting to the Prime Desert Woodland Preserve located approximately ¼ mile to the south

Buildings associated with these surrounding uses are generally one to two stories in height, with a few taller structures such as the church steeple/tower at the Church of Jesus Christ of Latter-day Saints.

The existing campus is generally flat and consists of 205 permanent and temporary buildings spread across the central portion of the site. Buildings range in size from 24 square feet to 105,085 square feet and one to three stories in height. Athletic fields, a baseball stadium and Marauder Stadium occupy the western edge of the campus, while the northern, southern and eastern edges are occupied by surface parking lots, except at the corner of West Avenue K and 30th Street West, which is occupied by the Administration Building and an area landscaped with lawn and trees; and approximately 500 feet west of the Administration Building, where the Performing Arts Theater Building and an internal campus road front on West Avenue K. The 20 parking lots located on the campus are minimally landscaped and contain a total of 3,794 parking spaces. Parking lots 10 and 11, located along 30th Street West, contain solar panels that generate electricity utilized by the school.

Photographs of the project site and its surroundings are provided in Figure 4.1-1 through Figure 4.1-5.

Visibility of the Project Site

The project site is visible from surrounding streets. The surrounding streets such as W Avenue K, 30th Street W, W Avenue J 8, and 35th Street W provide the most direct views of the project site. Additional streets, such as 32nd Street W, Fine Street, W Avenue J 9, and W Avenue J 12 provide direct views of the campus when traveling directly towards the campus. Some parts of the campus can be seen from bordering residential areas. With the exception of a residential neighborhood located south of the campus, views are mainly of parking lots and solar panel structures located in the eastern parking lot, with distant views of buildings. Some residences located off 32nd Street W and West Avenue K have a direct view of the southern part of the campus, including the Performing Arts Theatre Building and Marauder Stadium. The project site and its surroundings are located on land that is generally flat, a condition which does not provide any prominent vantage points from which to observe larger areas of the campus.

Scenic Vistas

Scenic views of the desert and local mountains are the predominant scenic vistas in Lancaster. Desert views are primarily available along the edges of the City, particularly in the undeveloped eastern portions. Distant views of the San Gabriel Mountains (located approximately 60 miles to the southeast), Sierra Pelonas Mountains (located approximately 10 miles to the southwest and west), and Tehachapi Mountains (located approximately 30 miles to the northwest) are available across the project site. Because of existing urban development and extensive mature landscaping, views within and immediately bordering the project site of the San Gabriel Mountains, Sierra Pelonas Mountains, and Tehachapi Mountains are available from a limited number of locations. The best views of the mountains are from large areas of unobstructed open space, such as the athletic fields in the southwestern part of campus. In other areas, views of the mountains are fully to partially obstructed by existing trees and buildings. Photographs of distant mountain views from the campus are provided in Figure 4.1-5.

There are no officially designated scenic routes or highways in the City of Lancaster. Portions of five roadways have been identified in the Master Environmental Assessment for the 2030 General Plan as roadways which could potentially serve as scenic routes. These roadways include portions of the Antelope Valley Freeway, Avenue K, Avenue M, 60th Street West, and 90th Street West. None of these roadways are located near the Antelope Valley College campus. Although Avenue K borders

Figure 4.1-1 Photo Location Key

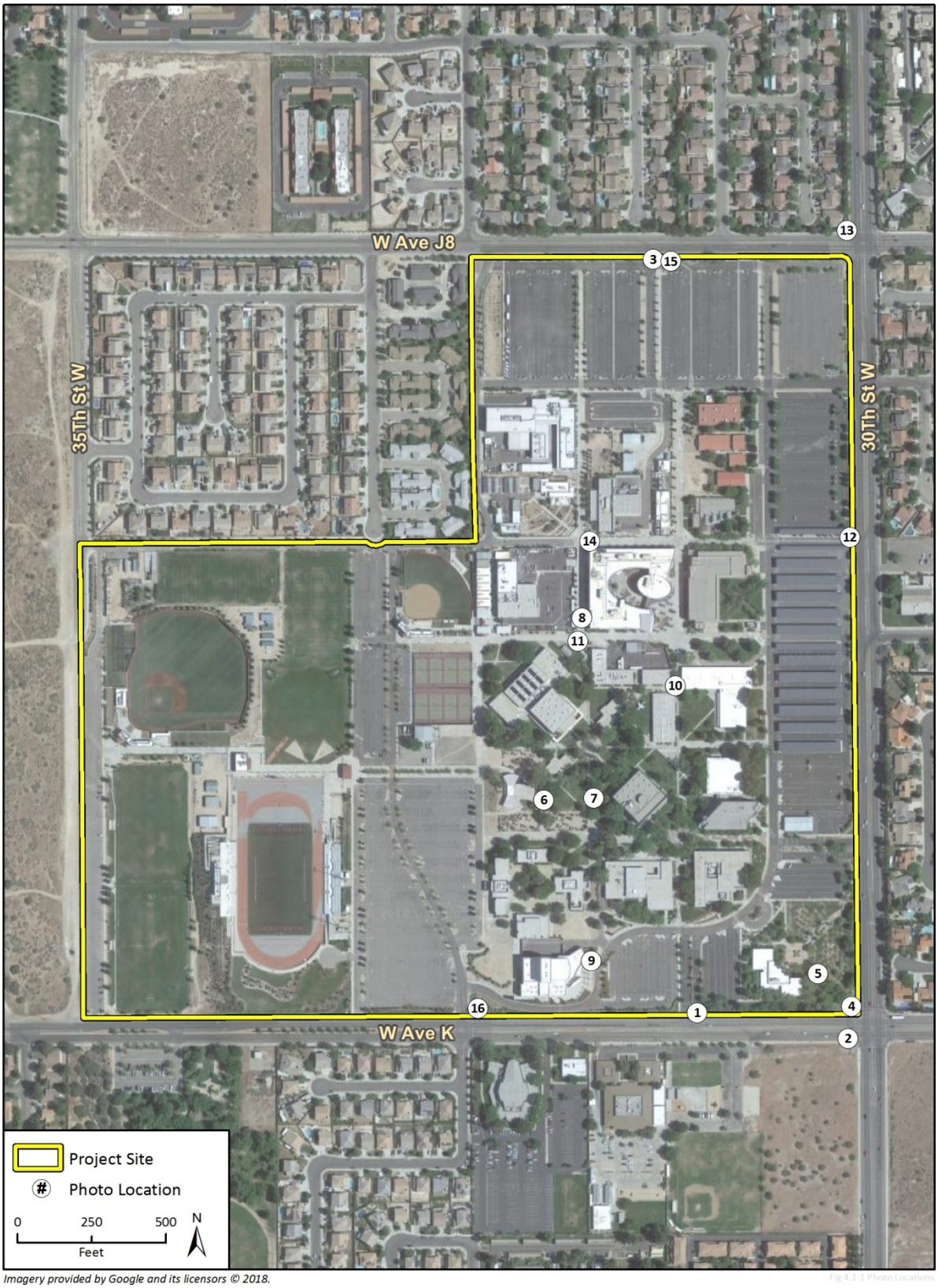

Figure 4.1-2 Photographs of Antelope Valley Community College Campus

Photograph 1: Academic Way Entry

Photograph 2: Looking towards school from W Avenue K

Photograph 3: AVC K Entrance on W Ave J

Photograph 4: Avenue K/30th Street Entrance

Figure 4.1-3 Photographs of Antelope Valley Community College Campus

Photograph 5: Administrative courtyard and buildings

Photograph 6: Lecture Hall 1

Photograph 7: Courtyard adjacent to Library

Photograph 8: Health Sciences 1

Figure 4.1-4 Photographs of Antelope Valley Community College Campus

Photograph 9: Performing Arts Courtyard

Photograph 10: Tech Engineering 2

Photograph 11: Auto Shop

Photograph 12: 30th Avenue Entrance/Parking Lot

Figure 4.1-5 Mountain Views from Antelope Valley Community College Campus

Photograph 13: Southerly view from W J Avenue and 30th Street

Photograph 14: Western view from Automotive Center

Photograph 15: Southerly view from W J Avenue entrance

Photograph 16: Northwesterly view from 32nd Street entrance

the campus to the south, the portion of the roadway identified as a potential scenic route is not adjacent to the campus.

Light and Glare

The project site and immediately surrounding areas have a variety of lighting conditions, from well-lit parking lots, pedestrian pathways, campus facilities and roadways to residential neighborhoods with limited street lighting. The project site and immediately surrounding areas also have various sources of glare, which is a type of light created by direct or reflected visual exposure to the light source. During the day, sunlight reflecting from structures, roadways, and cars are the primary sources of glare, while nighttime light and glare can be divided into both stationary and mobile sources. Stationary sources of nighttime light include exterior structure illumination, interior lighting, lighting for sports fields and courts, decorative landscape lighting, and streetlights. Near roadways, driveways, and parking lots, the principal mobile source of nighttime light and glare is vehicle headlights. In general, nighttime lighting levels on and adjacent to the campus are moderate due to the intensity of development in the area. However, nighttime lighting levels on more heavily-travelled roadways such as W Avenue K, 30th Street W, and W Avenue J 8 can be higher. Nighttime lighting levels are also higher during athletic events at lighted outdoor athletic facilities at the athletic fields, baseball field, or Marauder Stadium, all of which are located on the west side of the project site. Nighttime lighting from these sources may be particularly visible from residences located to the north in the area between W Avenue J 8, Technology Drive, Champions Way, and 35th Street W; to the south along W Avenue K; and to the west along 35th Street W, 37th Street W, and associated side streets.

c. Regulatory Setting

City of Lancaster General Plan

The General Plan 2030 (adopted in 2009) is the primary means for guiding future change in the City of Lancaster and is a compilation of community values, ideals and aspirations pertaining to the natural and man-made environments.

Plan for the Natural Environment

The Plan for the Natural Environment establishes a vision for the City's built environment by establishing goals and policies for the maintenance and protection of the city's resources. Scenic resources are addressed in this section, "Maintaining views of the mountains and the desert scenes has been identified by local residents as important in defining community identity" (City of Lancaster 2009b). Table 4.1-1 details General Plan policies applicable to scenic resources.

Table 4.1-1 General Plan 2030 Objectives and Policies – Scenic Resources

Policy
OBJECTIVE 3.8: Preserve and enhance important views within the City, and significant visual features which are visible from the City of Lancaster
Policy 3.8.1: Preserve views of surrounding ridgelines, slope areas and hilltops, as well as other scenic vistas
Policy 3.8.2: Explore the potential for establishing scenic corridors within the Study Area
OBJECTIVE 19.2: Integrate new development with established land use patterns through quality infill to enhance overall community form and create a vibrant sense of place
Policy 19.2.4: Provide buffers to soften the interface between conflicting land uses and intensities
OBJECTIVE 19.3: Improve the city's visual identity by utilizing design standards that instill a sense of pride and well-being in the community
Policy 19.3.1: Promote high quality development by facilitating innovation in architecture/building design, site planning, streetscapes, and signage
Policy 19.3.2: Enhance the livability of Lancaster by creating attractive, safe, and accessible gathering spaces within the community

Source: Plan for the Natural Environment, 2030 General Plan (City of Lancaster 2009b)

City of Lancaster Municipal Code

The commercial, residential, industrial, and public use design and performance standards in the City of Lancaster Municipal Code (LMC) are intended to provide for development that is of high architectural quality and architecturally compatible with existing development. The LMC also establishes standards for development related to visual quality. Development standards such as building heights, lot coverage, setbacks, landscaping, outside storage, signage, and lighting are identified for each zone.

4.1.2 Impact Analysis

a. Methodology and Significance Thresholds

The assessment of aesthetic impacts involves qualitative analysis that is inherently subjective in nature. Reactions to the same aesthetic conditions vary according to the viewer. This evaluation compares the existing visual environment of the project site (which corresponds to the existing campus, as described above in subsection 4.1.1) to the anticipated visual environment after implementation of the 2016 FMP, analyzing the nature of the anticipated change. It is important to highlight that the 2016 FMP does not include detailed building designs. Therefore, this analysis largely consists of a review of planned and proposed changes to the arrangement of built space to open space, including building massing and height, not the aesthetics of precise architectural design, which would be reviewed by AVCCD prior to construction. An impact is considered significant if development facilitated by the 2016 FMP would result in one or more of the following conditions, which are based upon the environmental checklist in Appendix G of the State CEQA Guidelines:

1. Have a substantial adverse effect on a scenic vista
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway
3. Substantially degrade the existing visual character or quality of the site and its surroundings
4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area

The 2016 FMP has potentially significant impacts in three of the four environmental impact areas listed above. The Initial Study determined that the 2016 FMP would not impact scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway. Therefore, all the issue areas above except for scenic resources are discussed below under Impacts AES-1 through AES-3.

b. Project Impacts and Mitigation Measures

Threshold 1:	Would the project have an adverse effect on a scenic vista?

Impact AES-1 **THE SCALE OF DEVELOPMENT PROPOSED IN THE 2016 FMP IS DESIGNED TO PRESERVE AND ENHANCE EXISTING VIEW CORRIDORS. ALL DEVELOPMENT WILL TAKE PLACE WITHIN THE EXISTING CAMPUS FOOTPRINT. THUS, IMPLEMENTATION OF THE PROPOSED 2016 FMP WOULD NOT SIGNIFICANTLY BLOCK OR IMPEDE VIEWS OF SCENIC VISTAS, AND IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

Page 2-7 of the *Plan for the Natural Environment* chapter of the City of Lancaster General Plan (City of Lancaster 2009b) states that "Maintaining views of the mountains and the desert scenes has been identified by local residents as important in defining community identity." Policy 3.8.1 of the General Plan is to "Preserve views of surrounding ridgelines, slope areas and hilltops, as well as other scenic vistas." While AVCCD is not subject to the City's General Plan, and is therefore not required to comply with these policies, they do serve as a useful guide in identifying potential scenic vistas in the vicinity of the project site.

In the vicinity of the project site, views of the San Gabriel Mountains (located approximately 60 miles to the southeast), Sierra Pelonas Mountains (located approximately 10 to the southwest and west), and Tehachapi Mountains (located approximately 30 miles to the northwest) provide distant views. As discussed above in the *Campus Setting* portion of this section, because of existing development and structures, mature landscaping, and intervening topography, views of these mountains and foothills are only available from a limited number of locations on and immediately bordering the campus. These include locations with large areas of unobstructed open space, such as the athletic fields in the western part of the campus. East-west streets such as W Avenue K and W Avenue J 8, and north-south streets such as 30th Street W, provide more expansive views of the mountains in some locations, where street corridors provide direct views.

Full implementation of the 2016 FMP on the Antelope Valley College campus would involve new construction, building renovations, change of use, and site development projects. The 2016 FMP recommends the demolition and replacement of a number of the oldest buildings on the campus. Functions currently housed in these facilities will be relocated to new or existing facilities and will be designed to support the new campus zoning diagram and address projected instructional program needs. This work would take place in five phases. Buildings that would be demolished, remodeled,

renovated, or relocated under the 2016 FMP are listed in Table 2-2 of Section 2, Project Description, and their phasing is described in Section 2.5.5, Phased Development and Construction.

Although the 2016 FMP does not specify an exact amount of new square footage that would be added to the AVC campus upon full implementation of the 2016 FMP, it does identify a need for 101,545 additional assignable square feet (ASF) on campus (see page 22 of the 2016 FMP). ASF is the assignable or usable space within a building (AVCCD 2016). All facilities proposed under the 2016 FMP would be located within the development footprint of the AVC campus.

The proposed Master Plan calls for the construction of a number of new facilities in previously landscaped areas that currently serve as open space in the central portion of the campus. This includes expansion of the Student Center and Student Services buildings, as well as the construction of instructional buildings just east of the existing library. However, removal of the existing Student Services and other buildings would allow for the development of additional open space, in particular, a new student plaza to be located between the Student Center and Student Services buildings. In addition, the 30th Street entry would be enhanced with pedestrian paseos and new landscaping, and a safe, landscaped drop off area would be constructed in front of the new Student Services building. Landscaping associated with these new pedestrian-oriented environments would not block scenic views of distant mountains, as views from these locations are already obscured by existing buildings and landscaping.

The arrangement of existing and planned buildings, built open space, pedestrian pathways, sidewalks, and internal roadways within the Antelope Valley College campus area would be configured within the existing development footprint and, thus, view corridors would be maintained through areas of the campus towards the foothills and mountains to the north. Similarly, views of scenic vistas from adjacent residential neighborhoods to the west and north would not be significantly impacted, as new building heights would be compatible with existing structures and would be located within the internal portions of the campus. Therefore, implementation of the 2016 FMP would not significantly alter scenic vistas and impacts would be less than significant.

Mitigation Measures

No mitigation required.

Threshold 3:	Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Impact AES-2 DEVELOPMENT UNDER THE 2016 FMP WOULD INCLUDE PHYSICAL CHANGES TO THE PROJECT SITE, BUT THESE CHANGES WOULD NOT DEGRADE ITS VISUAL CHARACTER AND QUALITY BECAUSE FUTURE DEVELOPMENT CARRIED OUT UNDER THE 2016 FMP WOULD BE REQUIRED TO ADHERE TO THE GUIDING PRINCIPLES LAID OUT IN THE 2016 FMP. IMPACTS RELATED TO VISUAL CHARACTER AND QUALITY WOULD BE LESS THAN SIGNIFICANT.

The 2016 FMP is a strategy for modifying the physical campus in Lancaster to accommodate growth and change over the next 30 years. Implementation of the 2016 FMP would include new construction, building renovations, change of use, and site development projects. Per the Campus Development Guidelines set forth in the FMP, these new facilities (including open spaces) will be designed to fit into, complement, and be sensitive to their surroundings, and be of high aesthetic quality, so as to not degrade the visual character and quality of the project site and its surroundings.

The visual character of the project site is comprised of a varied landscape of both built and natural elements. The 135 acre campus contains 205 permanent and temporary buildings which display a mix of architectural styles. A large number of the campus buildings were constructed between 1960 and 1969, and reflect the clean lines of the Mid Century Modern movement. Little building construction occurred in the 1970s and 1980s. A number of larger buildings constructed in the 1990s. According to the 2016 FMP, these building reflect an inward focused building plan, with a weak indoor/outdoor relationship. Buildings constructed since the year 2000 take on curvilinear forms that are not seen in other buildings on the campus (AVCCD 2016).

The 2016 FMP establishes a new vision for the AVC campus based on two themes:

- To respect and honor the history of the original Antelope Valley College campus
- To approach design of the overall campus in an authentic way which ties the campus to its specific place

The Campus Development Guidelines within the 2016 FMP provide a framework for the future design of the campus. The elements of the "Development Guidelines" from pages 115-131 of the 2016 FMP most relevant to visual character and quality are the following:

Placemaking

- The areas directly adjacent to buildings are as important as the internal spaces and should be considered as part of the building design
- It is desired to have multiple scales of outdoor spaces, from individual and small group gatherings to large campus events and forums
- Care should be given to provide varying types of shade to the south facing facades and create multiple scaled gathering spaces to maximize use of the outdoors and promote a sense of place

Form

- Future buildings should predominantly express and reinforce the linear/orthogonal grid

Massing

- Future buildings should reflect honest expressions of program or patterns that aid in creating interest within the building massing
- A variety of scales and volumes are encouraged to provide a variety of experiences through-out the campus
- Building components such as exterior exit stairs, sun shade structures or second story volumes extended beyond the ground floor as ways to introduce a variety of scale experiences

Wayfinding

- Provide appropriate building massing, clear articulation, and design of entries that established a hierarchy for primary and secondary access points

Façade Articulation

- Design varied façade configurations that are authentic to the academic programs and/or building systems

- Building facades should exhibit respect for the regional context while proposing a new image for the campus in a simple and logical way without applied decoration
- Placement of large expanses of glazing should be consistent with program and directed to maximize natural light while minimizing glare and solar heat gain
- Sun shade devices, and louvers should be consistent with orientation of the sun path and applied as functional elements not as decoration

Materiality

- Develop a consistent material and color palette for the campus to promote a strong sense of place and help reinforce AVC's institutional identity within the community

Color Palette

- The color palette for the campus should be selected for their appropriateness to the climatic and regional qualities, and relate to the local regional character

These principles build upon, and therefore would not detract from, the existing visual character and quality of the project site. The 2016 FMP would implement these principles in the following ways:

- The history of the original Antelope Valley College campus would be integrated into the new projects contained in the 2016 FMP
- All future development envisioned under the Master Plan would be consistent with the height of the existing on-campus buildings. New buildings will mainly be one-two stories in height, and will not exceed three stories in height, which is consistent with the height of current buildings
- Existing connections would be expanded in targeted areas, such as the east-west enhanced 30th Street entrance and the north-south enhanced Avenue K entrance, consistent with the vision and goals of the Master Plan
- Open space, pedestrian, and vehicular circulation improvements would be designed to work together to improve circulation and visibility on campus
- Loss of open space from building construction and square footage expansion would be sufficiently offset by including enhanced paving materials, urban furniture, landscaping and signage, and a human-scale, multi-purpose student plaza that are consistent with 2016 FMP themes

Compliance with the 2016 FMP themes and development guidelines would help ensure that projects carried out under the 2016 FMP would be generally consistent with existing on-campus development, the intent of the campus's FMP, and the surrounding uses in terms of organization, form, massing, setback, height, color, materials, and landscaping.

The visual character and quality of the campus (project site) is also defined by its open spaces, including landscaping. Implementation of the 2016 FMP would not adversely affect the amount or arrangement of open space on the project site. The project site has a number of mature trees, located in clusters between the library and gymnasium, surrounding the Student Services building, in the Fine Arts Plaza, and east of the Applied Arts building. While implementation of the 2016 FMP would lead to the removal of some trees, it would also minimize tree removal where possible and introduce new trees to the project site. For example, the 30th Street and Avenue K entries will be enhanced to create a welcoming arrival experience. Both entries will be enhanced with pedestrian paseos and new landscaping, while a safe, landscaped drop off area will be constructed in front of

the new Student Services building off the 30th Street entry. After implementation of the 2016 FMP, ornamental grasses, shrubs, and trees would continue to be distributed throughout the project site. The landscape design is inspired by existing perimeter planting around the Health and Science building. With implementation of the guidelines and practices discussed in the 2016 FMP, trees and other vegetation would remain a scenic resource on the project site (AVCCD 2016).

The 2016 FMP lists eight separate groups of projects that could involve demolition and/or construction activities. While construction of each of these projects would be temporary, these construction projects would be carried out throughout the life of the FMP, as described in Section 2.5.3 of this EIR. Thus, implementation of the 2016 FMP could lead to construction occurring somewhere on the project site over a substantial portion of this period. However, this would be a temporary impact that would not affect the long term visual character and quality of the project site and its surroundings. Impacts to visual character and quality would be less than significant.

Mitigation Measures

No mitigation required.

Threshold 4:	Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Impact AES-3 IMPLEMENTATION OF THE 2016 FMP WOULD LEAD TO NEW CONSTRUCTION THAT WOULD CREATE NEW SOURCES OF LIGHT AND GLARE, BUT THE PROJECT SITE IS CURRENTLY DEVELOPED AND ALREADY INCLUDES SOURCES OF LIGHT AND GLARE. ANY FUTURE DEVELOPMENT WOULD BE REQUIRED TO COMPLY WITH 2016 FMP PRINCIPLES AND STANDARDS SPECIFICALLY DESIGNED TO REDUCE LIGHTING IMPACTS. ADHERENCE TO THESE POLICIES AND STANDARDS WOULD REDUCE LIGHT AND GLARE IMPACTS TO A LESS THAN SIGNIFICANT LEVEL.

Site illumination serves multiple functions. It enhances visibility and safety along roadways and other public spaces for vehicles, bicyclists, and pedestrians. It can also serve to interpret site plan arrangement by emphasizing pathways, signage, focal points, gathering places, and building entrances.

Implementation of the 2016 FMP would create new light sources, with any new or remodeled building having the potential to produce light from interior or exterior illumination. Other new light sources may include exterior lighting such as lighting for pathways and pedestrian crossings. If these light sources created significant increases in ambient light levels and/or new sources of glare, then the 2016 FMP could have a significant impact related to light or glare. Although new buildings would be constructed, new construction is not proposed within undeveloped portions of the project site. Existing buildings produce light from interior and exterior illumination, and pedestrian pathways are lit at nighttime for safety and wayfinding purposes. Existing lighting would not be incrementally intensified due to implementation of the 2016 FMP. However, new lighting would be subject to the same themes and development guidelines of the 2016 FMP discussed in Impact AES-2, which would help ensure that projects carried out under the 2016 FMP would be generally consistent with existing on-campus development, the intent of the campus's FMP, and surrounding uses.

The exterior of facilities listed in the 2016 FMP could include reflective surfaces such as glass and metal that could create glare due to reflections from these surfaces. The 2016 FMP provides guidance for the use of reflective materials, stating on page 124, "Placement of large expanses of glazing should be consistent with program and directed to maximize natural light while minimizing

glare and solar heat gain" (AVCCD 2016). Impacts of the 2016 FMP related to light and glare would therefore be less than significant.

Mitigation Measures

No mitigation required.

c. Cumulative Impacts

Cumulative impacts to the aesthetics of the project site and its surroundings would derive from visible changes envisioned under the 2016 FMP, as well as growth and development of surrounding areas envisioned under the Lancaster General Plan and in specific development proposals for surrounding properties as described in Chapter 3, Environmental Setting. These projects include the TTM 61681, TTM 60430, and TTM 60664 residential projects, which will be visible from campus. These three projects represent development and redevelopment that would create physical changes with potential aesthetic impacts that could create cumulative aesthetic impacts in combination with development facilitated by the 2016 FMP. In addition, population growth envisioned under and enabled by applicable planning documents could also lead to further development near the project site, also with potential aesthetic impacts.

Development projects in the City of Lancaster are required to comply with the Lancaster Design Guidelines. The design guidelines establish smart growth, site planning, sustainability, streetscape, landscaping, and architectural design standards for all development to ensure that future development within the City does not negatively affect the existing community character. With implementation of the design guidelines, the residential projects that will be visible from the project site will exhibit excellence in design, and through considerate attention to architectural character, will result in aesthetically pleasing neighborhoods (City of Lancaster 2009c).

It has been determined that the 2016 FMP would not have a significant adverse impact on the aesthetics of the project site and its surroundings, with implementation of the guidelines and practices of the 2016 FMP. City regulations, policies, and procedures would apply to the land surrounding the project site. The combination of enforcement of these City design guidelines off the project site, along with the implementation of the 2016 FMP guidelines on the project site, would together serve to avoid negative aesthetic impacts of cumulative development. Therefore, cumulative impacts related to aesthetics would be less than significant.

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4.2 Air Quality

This section discusses the 2016 FMP's potential impacts to regional and local air quality. The vehicle miles traveled (VMT) estimates used in the emissions analysis are based on the *Transportation Impact Study* (TIS) prepared by Fehr & Peers, dated July 2018. This TIS is included in Appendix B of this EIR.

4.2.1 Environmental Setting

a. Climate and Topography

The project site is located in the Mojave Desert Air Basin (MDAB), which is under the jurisdiction of the Antelope Valley Air Quality Management District (AVAQMD).

Topography

The MDAB is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains that dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada Mountains to the north; air masses pushed onshore in southern California by differential heating are channeled through the MDAB. The MDAB is separated from the southern California coastal and central California by mountains (highest elevation approximately 10,000 feet), whose passes form the main channels for these air masses. The Antelope Valley is bordered to the northwest by the Tehachapi Mountains, which are separated from the Sierra Nevadas in the north by the Tehachapi Pass (approximately 3,800-foot elevation). The Antelope Valley is bordered to the south by the Sierra Pelona Mountains, which are separated from the San Gabriel Mountains to their east by Soledad Pass (approximately 3,300-foot elevation) (AVAQMD 2016).

Climate

The semi-permanent high-pressure system west of the Pacific coast strongly influences California's weather. It creates sunny skies in the summer and influences the pathway and occurrence of low-pressure weather systems that bring rainfall to the area in the months of October through April. During the day, the predominant wind direction is from the west and southwest, and at night, wind direction is from the north. These predominant wind patterns are broken during the winter by storms coming from the north and northwest and by episodic Santa Ana winds, which are strong northerly to northeasterly winds that originate from high pressure areas centered over the desert of the Great Basin. These winds are usually warm, dry, and often dusty. They are particularly strong in the mountain passes and at the mouths of canyons.

During the summer, the MDAB is generally influenced by a Pacific Subtropical High cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. In the MBAD, temperatures generally increase south to north and precipitation decreases west to east (CARB 2011a). Although the MDAB as a whole is rarely influenced by cold fronts moving south from Canada and Alaska, the Antelope Valley portion if the MDAB generally experiences cooler temperatures and higher precipitation than the rest of the region as it is positioned in the southwest corner of the air basin. Most desert moisture arrives from infrequent warm, moist, and unstable air

masses from the south. The MDAB is classified as a dry-hot desert climate, with portions classified as dry-very hot desert, to indicate at least three months have maximum average temperatures over 100°F (AVAQMD 2016).

b. Air Pollutants of Primary Concern

The Federal and State Clean Air Acts mandate the control and reduction of certain air pollutants. Under these laws, the United States Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established ambient air quality standards for certain "criteria" pollutants. Ambient air pollutant concentrations are affected by the rates and distributions of corresponding air pollutant emissions, as well as by the climate and topographic influences discussed above. The primary determinant of concentrations of non-reactive pollutants, such as carbon monoxide (CO) and suspended particulate matter, is proximity to major sources. Ambient CO levels usually closely follow the spatial and temporal distributions of vehicular traffic. A discussion of each primary criterion pollutant is provided below.

Ozone

Ozone (O_3) is a colorless gas with a pungent odor. Most ozone in the atmosphere is formed as a result of the interaction of ultraviolet light, reactive organic gases (ROG), and oxides of nitrogen (NO_x). ROG (the organic compound fraction relevant to ozone formation, and is sufficiently equivalent for the purposes of this analysis to volatile organic compounds [VOC]) is composed of non-methane hydrocarbons (with some specific exclusions), and NO_x is made of different chemical combinations of nitrogen and oxygen, mainly nitric oxide (NO) and nitrogen dioxide (NO_2). As a highly reactive molecule, ozone readily combines with many different components of the atmosphere. Consequently, high levels of O_3 tend to exist only while high ROG and NO_x levels are present to sustain the O_3 formation process. Once the precursors have been depleted, O_3 levels rapidly decline. Because these reactions occur on a regional rather than local scale, O_3 is considered a regional pollutant.

Carbon Monoxide

CO is an odorless, colorless gas and causes a number of health problems including fatigue, headache, confusion, and dizziness. The incomplete combustion of petroleum fuels in on-road vehicles and at power plants is a major cause of CO. CO is also produced during the winter from wood stoves and fireplaces. CO tends to dissipate rapidly into the atmosphere; consequently, violations of the State CO standards are generally associated with major roadway intersections during peak-hour traffic conditions.

Localized CO "hotspots" can occur at intersections with heavy peak-hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the National Ambient Air Quality Standards (NAAQS) of 35.0 parts per million (ppm) or the California Ambient Air Quality Standards (CAAQS) of 20.0 ppm.

Nitrogen Dioxide

NO_2 is a by-product of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. The principal form of nitrogen oxide produced by fuel combustion is NO, but NO reacts rapidly to form NO_2, creating the mixture of NO and NO_2 commonly referred to as NO_x. NO_2 is an acute irritant. A relationship between NO_2 and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 ppm may occur. NO_2 absorbs

blue light and causes a reddish brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of particulate matter no more than 10 microns in diameter (PM_{10}) and acid rain.

Suspended Particulates

PM_{10} is small particulate matter measuring no more than 10 microns in diameter, while $PM_{2.5}$ is fine particulate matter measuring no more than 2.5 microns in diameter. Suspended particulates are mostly dust particles, nitrates, and sulfates. They are a by-product of fuel combustion and wind erosion of soil and unpaved roads, and are directly emitted into the atmosphere through these processes. Suspended particulates are also created in the atmosphere through chemical reactions. The characteristics, sources, and potential health effects associated with the small particulates (those between 2.5 and 10 microns in diameter) and fine particulates ($PM_{2.5}$) can be very different. The small particulates generally come from windblown dust and dust kicked up from mobile sources. The fine particulates are generally associated with combustion processes as well as being formed in the atmosphere as a secondary pollutant through chemical reactions. Fine particulate matter is more likely to penetrate deep into the lungs and poses a serious health threat to all groups, but particularly to the elderly, children, and those with respiratory problems. More than half of the small and fine particulate matter that is inhaled into the lungs remains there, which can cause permanent lung damage. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance.

Lead

Lead (Pb) is a metal found naturally in the environment, as well as in manufacturing products. The major sources of Pb emissions historically have been mobile and industrial sources. In the early 1970s, the USEPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The USEPA completed the ban prohibiting the use of leaded gasoline in highway vehicles in December 1995. As a result of the USEPA's regulatory efforts to remove lead from gasoline, atmospheric lead concentrations have declined substantially over the past several decades. The most dramatic reductions in lead emissions occurred prior to 1990 due to the removal of lead from gasoline sold for most highway vehicles. Lead emissions were further reduced substantially between 1990 and 2008, with reductions occurring in the metals industries at least in part as a result of national emissions standards for hazardous air pollutants (USEPA 2013). As a result of phasing out leaded gasoline, metal processing currently is the primary source of lead emissions. The highest level of lead in the air is generally found near lead smelters. Other stationary sources include waste incinerators, utilities, and lead-acid battery manufacturers.

Toxic Air Contaminants

The California 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." The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines. According to CARB, diesel engine emissions are believed to be responsible for about 70 percent of California's estimated known cancer risk attributable to toxic air contaminants and comprise about eight percent of outdoor $PM_{2.5}$ (CARB 2016).

Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless, pungent, irritating gas formed primarily by the combustion of sulfur-containing fossil fuels. In humid atmospheres, SO_2 can form sulfur trioxide and sulfuric acid mist, with some of the latter eventually reacting to produce sulfate particulates, which can inhibit visibility. Fuel combustion is the major source, while chemical plants, sulfur recovery plants, and metal processing are minor contributors. At sufficiently high concentrations, sulfur dioxide irritates the upper respiratory tract. Even at lower concentrations, when in conjunction with particulates, SO_2 may do even greater harm by injuring lung tissues (USEPA 2018a). Sulfur oxides, in combination with moisture and oxygen, can yellow leaves on plants, dissolve marble, and eat away iron and steel.

Ambient Air Quality Standards

As mentioned above, CARB and the USEPA established ambient air quality standards for major pollutants, including O_3, CO, NO_2, SO_2, Pb, PM_{10}, and $PM_{2.5}$. Standards have been set at levels intended to be protective of public health. California standards are more restrictive than federal standards for each of these pollutants except for lead and the eight-hour average for CO.

Local air districts and CARB monitor ambient air quality to ensure that air quality standards are met and, if they are not met, to also develop strategies to meet the standards. Air quality monitoring stations measure pollutant ground-level concentrations (typically, ten feet above ground level). Depending on whether the standards are met or exceeded, the local air basin is classified as in "attainment" or "non-attainment." Some areas are unclassified, which means no monitoring data are available but the area is considered to be in attainment. Table 4.2-1 summarizes the CAAQS and the NAAQS for each of these pollutants as well as the attainment status of the MDAB. As shown in the table, the MDAB is in non-attainment for the State standard for ozone and PM_{10}.

Table 4.2-1 Ambient Air Quality Standards and Basin Attainment Status

		California Standards		Federal Standards	
Pollutant	**Averaging Time**	**Concentration**	**Attainment Status**	**Concentration**	**Attainment Status**
Ozone	1-Hour	0.09 ppm	N	–	
	8-Hour	0.070 ppm	N	0.070 ppm	N
Carbon Monoxide	8-Hour	9.0 ppm	A	9.0 ppm	A
	1-Hour	20.0 ppm	A	35.0 ppm	A
Nitrogen Dioxide	Annual	0.030 ppm	A	0.053 ppm	A
	1-Hour	0.18 ppm	A	0.100 ppm	A
Sulfur Dioxide	Annual	–		–	
	24-Hour	0.04 ppm	A	–	
	1-Hour	0.25 ppm	A	0.075 ppm	U
PM_{10}	Annual	20 µg/m^3	N	–	
	24-Hour	50 µg/m^3	N	150 µg/m^3	U
PM_{25}	Annual	12 µg/m^3	U	12 µg/m^3	A
	24-Hour	–		35 µg/m^3	A
Lead	30-Day Average	1.5 µg/m^3	A	–	
	3-Month Average	–		0.15 µg/m^3	A

ppm = parts per million
µg/m^3 = micrograms per cubic meter

Source: CARB 2017a

A = Attainment
N = Non-attainment
U = Unclassified
N/T = Non-attainment-Transitional

The AVAQMD-operated monitoring station closest to the project site is the Lancaster-Division Street Monitoring Station, which is approximately three miles to the southeast. Table 4.2-2 displays the peak day concentration and number of days of standards exceedance between 2014 and 2016 at the Lancaster-Division Street Monitoring Station for all criteria pollutants except CO, which was unavailable.

Table 4.2-2 Ambient Air Quality Data at Lancaster-Division Street Monitoring Station

Pollutant	2015	2016	2017
Ozone (ppm), Worst 1-Hour	0.132	0.108	0.109
Number of days of State exceedances (>0.09 ppm)	26	3	10
Ozone (ppm), 8-Hour Average	0.103	0.091	0.087
Number of days of State exceedances (>0.07 ppm)	82	60	43
Number of days of Federal exceedances (>0.07 ppm)	80	65	43
Particulate Matter <10 microns, μg/m^3, Worst 24 Hours	123.8	145.0	82.4
Number of days above State standard (>50 μg/m^3)	*	*	*
Number of days above Federal standard (>150 μg/m^3)	0	0	0
Particulate Matter <2.5 microns, μg/m^3, Worst 24 Hours	10.4	64.8	26.6
Number of days above Federal standard (>35 μg/m^3)	*	2	0

Notes: ppm = parts per million; μg/m^3 = micrograms per cubic meter

* No data was available for the MDAB to determine the value.

Source: CARB 2018a

c. Air Quality Management

As the local air quality management agency, the AVAQMD is required to monitor air pollutant levels to ensure that state and federal air quality standards are met and, if they are not met, to develop strategies to meet the standards (AVAQMD 2008). In the Los Angeles County portion of the MDAB, the AVAQMD is required to prepare a plan for improvement for the air pollutants for which the MDAB is in non-attainment. The AVAQMD has developed the following federal and State attainment planning documents (CARB 2015a):

- 2015 8-Hour Reasonably Available Control Technology State Implementation Plan (SIP) Analysis (RACT SIP Analysis)
- 2014 Updates to the 1997 8-Hour Ozone Standard SIPs: Coachella Valley and Western Mojave Desert 8-Hour Ozone Nonattainment Areas
- 2008 Ozone Early Progress Plans
- 2007 Western Mojave Desert Ozone Attainment Plan includes the Antelope Valley Attainment Plan
- 2004 Antelope Valley Ozone Attainment Plan

Through the attainment planning process, the AVAQMD has developed the following Rules and Regulations to regulate sources of air pollution in the Los Angeles County portion of the MDAB.

- **Regulation II – Permits.** This regulation includes rule requirements for obtaining necessary permits to construct and operate that will be applicable to the proposed project's portable or stationary construction equipment with engines greater than 50 horsepower that do not have permits under the CARB PERP program (AVAQMD 2018).
- **Rule 401 – Visible Emissions.** This rule prohibits discharge of air contaminants or other material, which are as dark or darker in shade as that designated No. 1 on the Ringelmann Chart (AVAQMD 1989).

- **Rule 402 – Nuisance.** This rule prohibits discharge of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any such persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property (AVAQMD 1976).
- **Rule 403 – Fugitive Dust.** The purpose of this rule is to control the amount of PM entrained in the atmosphere from man-made sources of fugitive dust. The rule prohibits emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area to be visible beyond the emission source's property line. This rule also requires other reasonable precautions be taken to minimize dust during construction activities and prevent track-out upon public roadways. These measures may include adding freeboard to haul vehicles, covering loose material on haul vehicles, watering, using chemical stabilizers, and/or ceasing all activities (such as during periods of high winds). In addition, a Dust Control Plan (DCP) would need to be submitted to the Air Pollution Control Officer (APCO) for approval if more than 5 acres would be disturbed or if more than 2,500 cubic yards of material would be excavated per day for at least three days (for each phase of the project as applicable). The DCP requirements necessary to comply with Rule 403 were revised in 2016. These revisions include requiring the contractor to meet on-site with an AVAQMD Field Inspector to review the DCP requirements prior to earthmoving/site clearing activities and follow the control measures approved in the DCP during construction, as well as requiring renewable energy projects to complete active operations DCP applications that require the operator to address dust control issue complaints during operation (AVAQMD 2010).
- **Rule 1110.2 – Emission from Stationary, Non-road & Portable Internal Combustion Engines.** This rule establishes emissions limits for stationary, non-road, and portable internal combustion engines rated at 50 or more brake horsepower (bhp). Permitting non-road and portable equipment through the CARB PERP program provide compliance with this rule (AVAQMD 2003).
- **Rule 1113 – Architectural Coatings.** This rule limits the volatile organic compound (VOC) content of paints applied to various surfaces that would be applicable to any construction painting operation (AVAQMD 2013).
- **Rule 1166 – Volatile Organic Compound Emissions from Decontamination of Soil.** This rule sets requirements to control emissions from excavating, grading, handling and treating VOC-contaminated soils that may be encountered during project construction. As discussed in Section 4.6, *Hazards and Hazardous Materials,* the project site does not have known contamination issues. Regardless, if VOC contaminated soils are discovered during project construction, this rule would apply and the proposed project would have to comply with applicable parts of this rule (AVAQMD 1995).

4.2.2 Impact Analysis

a. Significance Thresholds and Methodology

Significance Thresholds

Based on Appendix G of the State CEQA Guidelines, a project may be deemed to have a significant impact on air quality if it would:

1. Conflict with or obstruct implementation of the regional air quality management plan

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

In the Initial Study conducted for the 2016 FMP (Appendix A), threshold 5 was determined to be less than significant. Therefore, thresholds 1 through 4 are analyzed in further detail below and threshold five was omitted from the following analysis.

This air quality analysis conforms to the methodologies recommended in AVAQMD's *CEQA and Federal Conformity Guidelines* (2016). The Guidelines include thresholds for emissions associated with both construction and operation of proposed projects, provided below in Table 4.2-3.

Table 4.2-3 Significant Emissions Thresholds

Criteria Pollutant	Annual (in tons)	Daily (in pounds)
Carbon Monoxide (CO)	100	548
Nitrogen Oxides (NO_x)	25	137
Volatile Organic Compounds (VOC)[1]	25	137
Sulfur Oxides (SO_x)	25	137
Particulate Matter (PM_{10})	15	82
Particulate Matter ($PM_{2.5}$)	12	65
Lead (Pb)	0.6	3

[1] VOCs are the organic compound fraction relevant to ozone formation, and are sufficiently equivalent for the purposes of this analysis to reactive organic gases (ROG).

Source: AVAQMD 2016

Methodology

Construction activities associated with development would generate diesel emissions and dust. Construction equipment that would generate criteria pollutants includes excavators, graders, dump trucks, and loaders. Some of this equipment would be used during grading activities as well as when structures are demolished or constructed. It is assumed that all construction equipment used would be diesel-powered. Construction emissions resulting from development associated with the 2016 FMP were calculated using the California Emissions Estimator Model (CalEEMod) by estimating the types and number of pieces of equipment that would be used onsite during each of the construction phases. See Appendix C for the assumptions and outputs from CalEEMod. The impact from construction emissions was determined using the regional and localized thresholds established by AVAQMD and published in the *CEQA and Federal Conformity Guidelines*.

Operational emissions associated with onsite development were estimated using CalEEMod. Operational emissions include mobile source emission, energy emissions, and area source emissions. Mobile source emissions are generated by the increase in motor vehicle trips to and from the project site associated with operation of onsite development. Vehicle trip generation rates were taken from the TIS prepared by Fehr & Peers (2018). For a detailed description of vehicle trip estimates, please refer to Section 4.8, *Transportation and Traffic*, and the TIS (Appendix B). Emissions attributed to energy use include emissions from electricity and natural gas consumption for space and water heating. Area source emissions are generated by landscape maintenance equipment, consumer products, and architectural coating. To determine whether a regional air quality impact would occur, the increase in emissions was compared to AVAQMD's recommended regional thresholds for operational emissions provided in Table 4.2-3.

Sensitive Receptors

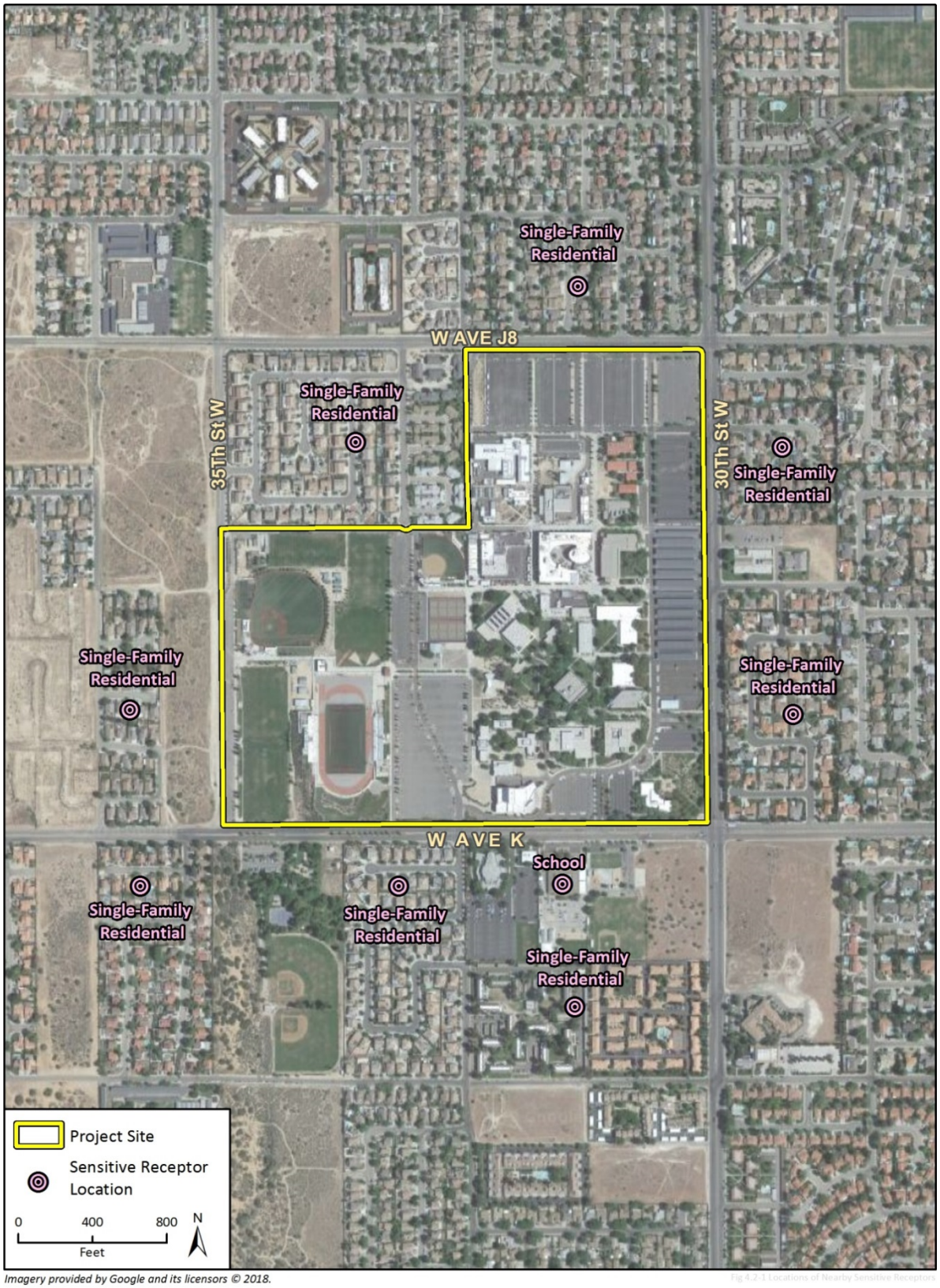
Residences, schools, daycare centers, playgrounds, and medical facilities are considered sensitive receptor land uses. Because details for projects included under the 2016 FMP after 2023 are unspecified, it cannot be determined at this time exactly where construction equipment will be stationed or construction staging areas will be located. However, as shown in Figure 2-4, demolition and construction activities planned under the 2016 FMP, in general, would not be located along the outer edges of the project site because new and renovated facilities would be in the interior of campus. Nonetheless, when considering the entire campus, the closest sensitive receptors are as follows (see Figure 4.2-1):

- Single-family residences located approximately 100 feet south of the campus across West Avenue K
- Bethel Christian School located approximately 165 feet south of the campus across West Avenue K
- Single-family residences located approximately 350 feet west of the campus across Alep Street
- Single-family residences located approximately 50 feet north of the campus across an unnamed road north of the baseball fields
- Single-family residences located approximately 100 feet north of the campus across West Avenue J8
- Single-family residences located approximately 100 feet east of the campus across 30th Street West

As explained in Section 1.4 of this EIR, due to the scope of the 2016 FMP and the long-term nature of its implementation, this EIR does not preclude the requirement for individual developments carried out under the 2016 FMP to undergo further environmental review. Upon future review of individual projects contained in the 2016 FMP, each project would be evaluated to determine whether it exposes sensitive receptors to substantial pollutant concentrations. If significant impacts in this regard are found in such future CEQA review, mitigation measures would be required in order to reduce pollutant concentrations to acceptable levels.

Because the AVAQMD does not contain any thresholds or measures for determining a significant impact from localized TACs or CO "hot spots," the Bay Area Air Quality Management District's (BAAQMD) *CEQA Air Quality Guidelines* (2011) are used herein to determine significant impacts to sensitive receptors from CO hot spots or TAC concentrations.

Figure 4.2-1 Location of Nearby Sensitive Receptors



Cumulative Impacts

Cumulative air quality impacts can occur from a concentration of multiple sources that individually comply with air pollution control requirements or fall below risk thresholds, but in the aggregate may pose a public health risk to exposed individuals. In the case of the 2016 FMP, the cumulative impact would be the combined impact of full implementation of the 2016 FMP along with concurrent development in the surrounding area, from the standpoint of each type of impact (cumulative construction emissions, natural gas consumption, solvent use, transportation emissions, congestion, etc.).

b. Project Impacts and Mitigation Measures

Threshold 1:	Conflict with or obstruct the implementation of the regional air quality management plan
Threshold 2:	Violate any air quality standard or contribute substantially to an existing or projected air quality violation
Threshold 3:	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)

Impact AQ-1 EMISSIONS OF CRITERIA POLLUTANTS RESULTING FROM CONSTRUCTION AND OPERATION OF DEVELOPMENT FACILITATED UNDER THE 2016 FMP WOULD NOT EXCEED AVAQMD EMISSIONS THRESHOLDS. FURTHERMORE, THE 2016 FMP WOULD NOT CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE REGIONAL AIR QUALITY MANAGEMENT PLAN. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Estimated emissions resulting from implementation of the 2016 FMP were calculated using CalEEMod based on the expected increase of 2,962 new full-time equivalent students (FTES) (from 12,946 FTES in 2018 to 15,908 FTES in 2030), demolition of approximately 111,000 square feet of existing buildings, and construction of approximately 254,000 square feet of new buildings, including 134,000 square feet of lecture and lab spaces, 68,000 square feet of general office space, 51,000 square feet of library space, and a 3,000-square foot pool. The following summarizes the 2016 FMP's overall pollutant emissions, which include construction emissions (including demolition emissions) and operational emissions (see Appendix C for full CalEEMod worksheets).

Construction Emissions

Construction emissions estimates were generated using CalEEMod (Version 2016.3.2). The emissions estimates generated from CalEEMod assume concurrent construction of all individual projects in the 2016 FMP. Because the individual projects in the 2016 FMP would not be performed concurrently, these estimates provide a conservative, worst-case scenario for construction emissions. The construction phases used in the analysis include: demolition, site preparation, grading, building construction, paving, and architectural coating. Construction equipment would include tractors, loaders, backhoes, cranes, forklifts, pavers, air compressors, and saws (see Appendix C for construction equipment mixes utilized in the analysis). The following mandatory emission reduction measures were included:

- AVAQMD Rule 403 – Requires 15 mph off-road vehicle speeds
- AVAQMD Rule 1113 – Requires the use of low VOC paint 50 g/L for interior residential, 100 g/L exterior residential, and 150 g/L interior and exterior commercial/institutional

Existing regulations applicable to construction projects envisioned under the 2016 FMP would help minimize the generation of emissions and prevent exposure of nearby sensitive receptors to substantial concentrations of air pollutants, such as dust control measures under AVAQMD Rule 403 and Title 13, Section 2449 of the California Code of Regulations (CCR). For example, dust control measures contained in AVAQMD Rule 403 include the prevention of tracking out dirt from off-road equipment beyond 25 feet onto paved roads and the application of water or chemical/organic stabilizers/suppressants sufficient to limit visible dust emissions to 20 percent opacity. Similarly, Title 13, Section 2449 of the CCR stipulates that no vehicle or engine subject to the regulation may idle for more than five consecutive minutes. However, due to the level of detail in these measures, they could not be captured in the modeling and therefore are not reflected in the emissions estimates generated from CalEEMod.

For structures whose square footage is currently known, cut and fill amounts were identified from excavation depth requirements from geotechnical reports conducted by United – Heider Inspection Group (2018) (see Appendix D for geotechnical reports).

Table 4.2-4 shows the estimated worst-case scenario daily emissions, if all projects under the 2016 FMP were built concurrently over a two-year period. However, construction of individual projects is expected to be staggered throughout the lifespan of the 2016 FMP, through the year 2030, over a 12-year horizon. Therefore, total estimated construction emissions over the two-year model period are taken as a worst-case scenario of maximum daily emissions.

Table 4.2-4 Estimated Maximum Daily Construction Emissions

	Maximum Daily Emissions (lbs/day)				
	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$
2019	3.7	49.5	23.4	9.4	5.1
2020	35.6	24.0	21.4	2.3	1.4
Maximum	**35.6**	**49.5**	**23.4**	**9.4**	**5.1**
AVAQMD Threshold	137	137	548	82	65
Threshold Exceeded?	No	No	No	No	No

See Appendix C for CalEEMod calculations. The higher amount among Summer and Winter results is shown for each criteria pollutant.

As shown in Table 4.2-4, maximum daily construction emissions over the 12-year life resulting from implementation of the 2016 FMP are estimated at 35.6 pounds of ROG, 49.5 pounds of NO_x, 23.4 pounds of CO, 9.4 pounds of PM_{10}, and 5.1 pounds of $PM_{2.5}$. Therefore, even based on these conservative estimates, maximum daily emissions of development facilitated by the 2016 FMP would not exceed AVAQMD thresholds.

Operational Emissions

Long-term, or operational, air pollutant emission impacts are those associated with stationary sources and mobile sources resulting from implementation of the 2016 FMP. Implementation of the

2016 FMP would result in an increase in the number of students on campus. Stationary source emissions would come from natural gas consumption for building heating and electricity for building lighting and powering. Mobile source operational emissions related to implementation of the 2016 FMP would come from vehicle trips, which are dependent on the number of students traveling to and from campus on a daily basis. Therefore, mobile source emissions would increase by 2030 due to the increase in AVC students. A detailed discussion of daily vehicle trips is included in Section 4.8, *Transportation and Circulation*. This analysis conservatively assumes that all enrolled students, including full-time enrollment, partial enrollment, and online enrollment, would be travelling to and from the campus on the same day. Table 4.6-5 provides an assessment of maximum operational air emissions on a daily basis.

Table 4.6-5 Net Change in Daily Operational Air Pollution Emissions

	Net Change in Maximum Daily Emissions 2018-2030 (lbs/day)				
	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$
Area	3.3	<0.1	<0.1	<0.1	<0.1
Energy	0.1	0.6	0.5	<0.1	<0.1
Mobile	6.0	29.6	79.1	22.8	6.3
Total	**9.4**	**30.1**	**79.6**	**22.9**	**6.3**
AVAQMD Threshold	137	137	548	82	65
Threshold Exceeded?	No	No	No	No	No

Notes: see Appendix C for CalEEMod calculations. Winter calculations shown.

As shown in Table 4.6-5, operational emissions associated with full buildout of the 2016 FMP would not exceed applicable AVAQMD thresholds for criteria pollutants.

AQMP Conformity

According to the AVAQMD, a project would not conflict with or obstruct its Air Quality Management Plan (AQMP) if the project complies with all applicable AVAQMD rules and regulations, complies with all proposed control measures that are not yet adopted from the AQMP, and is consistent with the growth forecasts in the AQMP (AVAQMD 2016). Conformity with growth forecasts can be established by demonstrating that the project is consistent with the land use plan that was used to generate the growth forecast (AVAQMD 2016). Therefore, a project would conflict with the AQMP if it would conflict with the growth forecast contained in the City's General Plan.

The 2016 FMP would accommodate a net increase in enrollment of 2,962 new FTES (12,946 FTES in 2018 and 15,908 FTES IN 2030) over an approximately 12-year time frame through 2030. This analysis assumes that all 2,962 new FTES would contribute to population growth in Lancaster through 2030. This increase, when compared to the existing City population of 161,485 (DOF 2018b), would result in 164,447 persons in Lancaster in 2030, an increase of 1.8 percent.

The City provides population forecasts in its 2030 General Plan. The 2030 General Plan forecasts that the population of Lancaster will be 259,696 in 2030. Therefore, direct population growth associated with implementation of the 2016 FMP would be within the City's 2030 General Plan growth forecasts. As stated in Section 2.5, Project Characteristics of this EIR, the FTES increases

includes in the 2016 are based on estimates of future demand for AVCCD's services, which in turn take into account projected future local and regional population growth. Additionally, implementation of the 2016 FMP would not produce emissions in exceedance of AVAQMD thresholds. Therefore, the 2016 FMP would not conflict with or obstruct the implementation of the AVAQMD AQMP. Impacts would be less than significant.

Mitigation Measures

No mitigation required.

Threshold 4:	Expose sensitive receptors to substantial pollutant concentrations

Impact AQ-2 IMPLEMENTATION OF THE 2016 FMP WOULD NOT RESULT IN THE EXPOSURE OF SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Diesel particulate matter (DPM) is classified as the primary carcinogenic TAC in the State. CARB reports that DPM represents about 70 percent of the potential cancer risk related to TACs in California (CARB 2018b).

Exposure to TACs is primarily based on local parameters (e.g., average daily traffic [ADT] on local roadway segment, wind direction in relation to source and receptor); however, CARB has several programs and regulations in place to reduce DPM emissions from mobile sources statewide, including the Diesel Risk Reduction Plan (CARB 2000) and Advanced Clean Cars Program (CARB 2011c). These programs include measures such as enforced retrofit of diesel particulate filters, replacement of older trucks and buses, requirements for lower emissions on new diesel vehicles, inspection programs, idling restrictions, and other programs for off-road diesel vehicles. These programs and regulations would reduce TAC emissions from mobile sources over the horizon of the 2016 FMP. Furthermore, as discussed under Section 4.2.2, buildings planned for construction or demolition under the 2016 FMP are generally located in the inner portions of the campus and would not be along the outer edge of the campus. Review of the proposed 2016 Facilities Master Plan Map (Figure 2-4) indicates that the construction project closest to a campus boundary with nearby sensitive receptors would be the proposed new tennis courts, which would be located approximately 50 feet south of residences across Champions Way.

Proximity to freeways and heavily traveled roads and intersections could expose nearby residents to higher levels of DPM and carbon monoxide. CARB recommends against siting sensitive receptors within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day (CARB 2005). Construction activities envisioned under implementation of the 2016 FMP would require some hauling trips that could increase traffic volumes and associated DPM on transportation facilities near sensitive receptors. However, none of the studied roadways or intersections would exceed 50,000 vehicles per day under the "Future with Project" scenario and the AVC campus is approximately one mile east of the nearest freeway, Highway 14 (see Appendix B for the TIS).

Although the precise location of projects and their proximity to nearby sensitive receptors is not known at this time, the 2016 FMP may expose sensitive receptors to hazardous air pollutant sources during construction activities, potentially resulting in their exposure to substantial hazardous air pollutants concentrations. Projects proposed under the 2016 FMP may be required to undergo future review, which would include analysis of such localized impacts of construction emissions, if necessary. As explained in Section 4.2.2a, upon future review of individual projects contained in the 2016 FMP, each project would be evaluated to determine if the project exposes sensitive receptors

to substantial pollutant concentrations. Appropriate mitigation measures, if necessary, would be identified at that time.

As mentioned under Impact AQ-1, implementation of the 2016 FMP would generate additional vehicle trips on nearby roadways due to the projected increase in student enrollment. In addition to DPM, areas with high vehicle density, such as congested intersections, have the potential to create high concentrations of CO ("CO hotspots") and could potentially expose sensitive receptors to harmful levels of pollution. As shown in Table 4.2-1, the NAAQS for CO is 35.0 ppm and the CAAQS for CO is 20.0 ppm. A project's localized air quality impact would be significant if it caused CO concentrations to exceed these standards.

In general, localized CO concentrations are often associated with high traffic volumes and heavy traffic congestion. Vehicle CO emissions have declined over time due to stringent State standards for vehicle emissions and will continue to decline as more stringent standards are put in place. Consequently, the BAAQMD has determined that a volume of 44,000 vehicles per hour is the level above which traffic volumes may contribute to a violation of CO standards (BAAQMD 2011). Of all the intersections studied in the TIS, , the 15th Street/State Route 14 northbound ramp and Avenue K intersection would have the highest peak hour traffic volume, with 4,697 vehicle trips during the PM peak hour (see Appendix B for the TIS). Therefore, the project would not result in volumes of traffic that would create, or substantially contribute to, the exceedance of State and federal AAQS for CO. This impact would be less than significant.

Mitigation Measures

No mitigation required.

c. Cumulative Impacts

In the absence of project-specific cumulative impact guidance from AVAQMD, SCAQMD guidance was used herein to analyze the 2016 FMP's foreseeable cumulative impacts. The South Coast Air Basin (Basin) is a non-attainment area for the federal standards for ozone, $PM_{2.5}$, and lead and the State standards for ozone, $PM_{2.5}$, and PM_{10}. Any growth within the Basin would contribute to existing exceedances of ambient air quality standards. SCAQMD's approach to determining cumulative air quality impacts for criteria air pollutants is to first determine whether the proposed project would result in a significant project-level impact to regional air quality based on the applicable significance thresholds. If the project would not generate emissions exceeding the significance thresholds, then the lead agency needs to consider the additive effects of related projects only if the proposed project is part of an on-going regulatory program or is contemplated in a Program EIR, and the related projects are located within approximately one mile of the project site. If there are related projects within the vicinity (one-mile radius) of the project site that are part of an on-going regulatory program or are contemplated in a Program EIR, then the additive effect of the related projects should be considered.

Each related project listed in Section 3.3, *Cumulative Development*, would generate emissions during construction and operation. However, neither the 2016 FMP nor any of the related projects are part of an on-going regulatory program or are contemplated in a Program EIR. The SCAQMD therefore recommends that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality. As discussed under Impact AQ-1, the 2016 FMP would not generate emissions that exceed AVAQMD construction or operational thresholds and the 2016 FMP is consistent with the AQMP. In accordance with SCAQMD guidance on determining cumulative

impacts, the 2016 FMP's contribution to cumulative regional long-term air quality impacts would not be cumulatively considerable.

4.3 Biological Resources

This section assesses the potential impacts to biological resources from the proposed 2016 FMP, including impacts to special status species, habitats, and local policies or ordinances protecting biological resources. The 2016 FMP would be carried out within the boundaries of the existing Antelope Valley College campus (the project site). Therefore, the impacts to biological resources will be analyzed within and adjacent to the project site.

4.3.1 Environmental Setting

a. Regional Setting

Antelope Valley College is located in the City of Lancaster in northern Los Angeles County. The region is bounded by the southern portion of the Sierra Nevada mountain range to the north, the Tehachapi mountains to the northwest, the Sierra Pelona Mountains to the southwest, and the San Gabriel mountains to the southeast. The climate and ecological region of the project site is unique to Los Angeles County because it is located in the Mojave Desert Ecological Section. Specifically, the project site is within the Western Mojave Mountains and Valleys Zone. This portion of the Mojave Desert contains more saltbush (*Atriplex spp*.) and other chenopod scrub than any other region in the Mojave area. Sparse Joshua tree cover occurs in the southern portion around the project site, and more dense woodland communities of Joshua tree and California juniper (*Juniperus californica*) occur in further upslope areas. (City of Lancaster 2009a

The City of Lancaster and the surrounding area has a relatively low percentage of vegetation cover due to the harsh temperature variation, amount of precipitation, and low topographical variation. The area also was historically farmed and abandoned, creating large areas of non-native habitat.

b. Project Site Existing Conditions

The project site is predominantly developed with parking lots, pathways, student centers, landscaped open spaces and sports fields, and institutional structures for lectures, labs, and offices. The surrounding area is also well developed with single-family suburban neighborhoods and roadways. There is also undeveloped, vacant land in the area, and mature ornamental and native trees are scattered throughout the project site

Vegetation Communities and Land Cover Types

Primary habitat for plants and wildlife on and around the project site consists of desert scrub, Joshua tree woodlands, ruderal and landscape, and developed/disturbed areas.

Desert Scrub

Desert scrub is a generic habitat which is characterized by having sandy soils that are dominated by shrubs with a minimal understory. The species associated with this habitat type are highly adapted to survive under the harsh environmental conditions, specifically high temperatures and low rainfall. Annual species occur during years with adequate moisture, but these landscapes typically consist of perennial shrubs. There are different categories of desert scrub based on species assemblages, such as Mojave creosote bush scrub, saltbush scrub, rabbitbush scrub, and shadescale scrub.

Desert scrub habitat occurs in small, undeveloped locations on the project site, typically in narrow strips along parking lots or paved areas. This vegetation community is also common in the vacant lands surrounding campus and existing residential development.

Joshua Tree Desert Woodland

Joshua tree habitats are considered a threatened California habitat by the California Department of Fish and Wildlife (CDFW) and recognized as a sensitive habitat by the City of Lancaster. They are characterized as open woodlands with scattered Joshua trees and, generally, little herbaceous understory. They are rarely found as pure stands and are associated with other trees and shrubs such as California juniper, single-leaf pinyon, and Mojave yucca. At lower elevations or areas that are less suitable for dense stands, the Joshua tree woodlands integrates with desert scrub habitats.

Joshua tree woodland does not occur on the project site, but it is present nearby. The Prime Desert Woodland Preserve is one of the most significant existing Joshua tree stands in the City of Lancaster and is located approximately 1,500 feet south of the project site (City of Lancaster 2009a). Rawley Duntley Park, directly adjacent to the Prime Desert Woodland preserve, also contains Joshua tree woodland and is located only 100 feet south, across West Avenue K from the campus. West of the project site is vacant land that also contains Joshua trees, but the trees are isolated and occur with desert scrub habitat and would not be considered a Joshua tree woodland.

Disturbed and Landscape

This habitat is man-made or highly disturbed from human activity. It is characterized by ornamental species that are planted throughout the project site and surrounding areas. Extensive non-native grass fields, part of the recreational fields in the western part of the project site, and throughout the project site as lawns that are regularly mowed. Disturbed lands include areas which have been cleared or otherwise altered through anthropogenic activities and are primarily composed of exposed soils with minimal vegetation or moderate cover by various non-native species adapted for growth in disturbed areas.

Developed

Developed areas constitute a major land cover in the project site and surrounding areas. This land cover type consists of single-family residential structures, paved sidewalks and roadways, and institutional structures throughout the project site. While some buildings can be utilized by wildlife, developed areas are typically void of native plants and wildlife species.

Special-status and Sensitive Species

For the purpose of this EIR, special-status species are those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS) under the federal Endangered Species Act (FESA); those listed or proposed for listing as rare, threatened, or endangered by the CDFW under the California Endangered Species Act (CESA); animals designated as “Species of Special Concern,” “Fully Protected,” or “Watch List” by the CDFW; and plants with a California Rare Plant Rank (CRPR) of 1 or 2 which are defined as:

- **List 1A** = Plants presumed extinct in California
- **List 1B.1** = Rare or endangered in California and elsewhere; seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

- **List 1B.2** = Rare or endangered in California and elsewhere; fairly endangered in California (20-80 percent occurrences threatened)
- **List 1B.3** = Rare or endangered in California and elsewhere, not very endangered in California (<20 percent of occurrences threatened or no current threats known)
- **List 2**= Rare, threatened or endangered in California, but more common elsewhere

Sensitive Communities and Critical Habitat

No federally designated critical habitat occurs within five miles of the project site (USFWS 2017). The CDFW and City of Lancaster consider Joshua tree woodland habitat a sensitive community. No Joshua tree woodland habitat occurs on the project site, but there is habitat across West Avenue K in Rawley Duntley Park and the Prime Desert Woodland Preserve.

Special-status Animal and Plant Species

Reviews of USFWS IPaC and California Natural Diversity Database (CNDDB) were conducted to obtain comprehensive information regarding special-status species considered to have the potential to occur on the project site or its vicinity (which is defined to be the area otherwise within the Lancaster West, California United States Geologic Survey [USGS] 7.5-minute topographic quadrangle and the surrounding eight quadrangles [Little Buttes, Rosamond, Rosamond Lake, Del Sur, Lancaster East, Sleepy Valley, Ritter Ridge, and Palmdale]). 31 special-status animal species and 13 special-status plant species have been observed or have the potential to occur within the nine-quad search area of the 2016 FMP site. Table 4.3-1 shows the special-status species, habitat requirements, and assessment of potential for occurrence for each species within the vicinity of the project site.

Table 4.3-1 Special-Status Species Occurring in the Vicinity (9 USGS Quadrangles) of the Project Site

Scientific Name Common Name	Status Fed/State ESA State Rarity G-Rank/S-Rank	Habitat Preference / Requirements	Potential for Occurrence/ Basis for Determination
Birds			
Accipiter cooperii Cooper's hawk	None/None Watch List G5/S4	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also live oaks.	Low. Required habitat not present on site or surrounding area. Mature ornamental trees occur on campus.
Agelaius tricolor tricolored blackbird	None/Threatened Species of Special Concern G2G3/S1S2	Highly colonial species, most numberous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	None. Required habitat not present on site or surrounding area
Aimophila ruficeps canescens southern California rufous-crowned sparrow	None/None Watch List G5T3/S3	Resident in Southern California coastal sage scrub and sparse mixed chaparral. Frequents relatively steep, often rocky hillsides with grass and forb patches.	None. Required habitat not present on site or surrounding area

Scientific Name Common Name	Status Fed/State ESA State Rarity G-Rank/S-Rank	Habitat Preference / Requirements	Potential for Occurrence/ Basis for Determination
Aquila chrysaetos golden eagle	None/None Fully Protected G5/S3	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	None. Required habitat not present on site or surrounding area
Artemisiospiza belli belli Bell's sage sparrow	None/None Watch List G5T2T4/S3	Nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range. Nest located on the ground beneath a shrub or in a shrub 6-18 inches above ground. Territories about 50 yards apart.	None. Required habitat not present on site or surrounding area
Asio flammeus short-eared owl	None/None Species of Special Concern G5/S3	Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	None. Required habitat not present on site or surrounding area
Athene cunicularia burrowing owl	None/None Species of Special Concern G4/S3	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Low. Required habitat not present on site, but present in the surrounding vacant lands which have scrublands with low-growing vegetation.
Buteo regalis ferruginous hawk	None/None Watch List G4/S3S4	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon-juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	Low. Foraging habitat not present on site but present in the surrounding vacant lands and open spaces.
Buteo swainsoni Swainson's hawk	None/ Threatened None G4/S3	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	None. Required habitat not present on site or surrounding area
Charadrius alexandrinus nivosus western snowy plover	Threatened/None Species of Special Concern G3T3/S2S3	Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	None. Required habitat not present on site or surrounding area.

Scientific Name Common Name	Status Fed/State ESA State Rarity G-Rank/S-Rank	Habitat Preference / Requirements	Potential for Occurrence/ Basis for Determination
Charadrius montanus mountain plover	None/None Species of Special Concern G3/S2S3	Short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Short vegetation, bare ground and flat topography. Prefers grazed areas and areas with burrowing rodents.	None. Required habitat not present on site or surrounding area.
Falco columbarius merlin	None/None Watch List G5/S3S4	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands and deserts, farms and ranches. Clumps of trees or windbreaks are required for roosting in open country.	None. Required habitat not present on site or surrounding area.
Gymnogyps californicus California Condor	Endangered/Endangered None G1/S1	Require vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Deep canyons containing clefts in the rocky walls provide nesting sites. forages up to 100 miles from roost/nest.	None. Required habitat not present on site or surrounding area
Lanius ludovicianus loggerhead shrike	None/None Species of Special Concern G4/S4	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oasis, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	None. Required habitat not present on site or surrounding area
Plegadis chihi white-faced ibis	None/None Watch List G5/S3S4	Shallow fresh-water marsh. Dense tule thickets for nesting interspersed with areas of shallow water for foraging.	None. Required habitat not present on site or surrounding area
Toxostoma lecontei Le Conte's thrasher	None/None Species of Special Concern G4/S3	Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground.	None. Required habitat not present on site or surrounding area.
Vireo bellii pusillus least Bell's vireo	Endangered/ Endangered None G5T2/S2	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	None. Required habitat not present on site or surrounding area
Reptiles and Amphibians			
Anniella pulchra northern California legless lizard	None/None Species of Special Concern G3/S3	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. they prefer soils with a high moisture content.	None. Required habitat not present on site or surrounding area

Scientific Name Common Name	Status Fed/State ESA State Rarity G-Rank/S-Rank	Habitat Preference / Requirements	Potential for Occurrence/ Basis for Determination
Arizona elegans occidentalis California glossy snake	None/None Species of Special Concern G5T2/S2	Range of scrub and grasslands habitats, often with loose or sandy soils. Patchily distributed from eastern San Francisco Bay to Baja California.	None. Required habitat not present on site or surrounding area
Emys marmorata western pond turtle	None/None Species of Special Concern G3G4/S3	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	None. Required habitat not present on site or surrounding area
Gopherus agassizii desert tortoise	Threatened/ Threatened None G3/S2S3	Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat. Requires friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred.	None. Required habitat not present on site. Surrounding desert scrub and Joshua tree woodland habitat very fragmented and not suitable for desert tortoise.
Phrynosoma blainvillii coast horned lizard	None/None Species of Special Concern G3G4/S3S4	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Low. Habitat not present on site but present in the surrounding vacant lands and open spaces.
Thamnophis hammondii two-striped gartersnake	None/None Species of Special Concern G4/S3S4	Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 ft elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	None. Required habitat not present on site or surrounding area
Rana draytonii California red-legged frog	Threatened/None Species of Special Concern G2G3/S2S3	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	None. Required habitat not present on site or surrounding area
Invertebrates			
Bombus crotchii Crotch bumble bee	None/None None G3G4/S1S2	Ranges from coastal California to the Sierra-Cascade crest and south into Mexico. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	None. Required habitat not present on site or surrounding area

Scientific Name Common Name	Status Fed/State ESA State Rarity G-Rank/S-Rank	Habitat Preference / Requirements	Potential for Occurrence/ Basis for Determination
Euphydryas editha quino quino checkerspot butterfly	Endangered/None None G5T1T2/S1S2	Sunny openings within chaparral and coastal sage shrublands in parts of Riverside and San Diego counties. Hills and mesas near the coast. need high densities of food plants Plantago erecta, P. insularis, Orthocarpus purpurescens.	None. Required habitat not present on site or surrounding area
Mammals			
Corynorhinus townsendii Townsend's big-eared bat	None/None Species of Special Concern G3G4/S2	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	None. Area is highly disturbed by human activity and has limited roosting sites.
Onychomys torridus ramona southern grasshopper mouse	None/None Species of Special Concern G5T3/S3	Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover. Feeds almost exclusively on arthropods, especially scorpions and orthopteran insects.	Low. Habitat to sustain mouse not present on site. Surrounding desert scrub habitat is highly disturbed.
Perognathus inornatus San Joaquin Pocket Mouse	None/None None G2G3/S2S3	Typically found in grasslands and blue oak savannas. Needs friable soils.	None. Required habitat not present on site or in surrounding area
Taxidea taxus American badger	None/None Species of Special Concern G5/S3	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Low. Habitat not present on site, but present in the surrounding vacant lands and open spaces.
Xerospermophilus mohavensis Mohave ground squirrel	None/ Threatened None G2G3/S2S3	Open desert scrub, alkali scrub and Joshua tree woodland. Also feeds in annual grasslands. Restricted to Mojave desert. Prefers sandy to gravelly soils, avoids rocky areas. Uses burrows at base of shrubs for cover. Nests are in burrows.	None. Required habitat not present on site or surrounding area. Outside of current range.
Plants			
Astragalus hornii var. *hornii* Horn's milk-vetch	None/None 1B.1 G4G5T1T1/S1	Annual herb. Blooms May-Oct. Meadows and seeps, playas. Lake margins, alkaline sites. 60-850m (195-2790ft).	None. Required habitat not present on site.
Astragalus preussii var. *laxiflorus* Lancaster milk-vetch	None/None 1B.1 G4T2/S1	Chenopod scrub and alkaline clay flats or gravelly or sandy washes and along draws in gullied badlands. 700-735 m in California.	None. Required habitat not present on site or surrounding area

Scientific Name Common Name	Status Fed/State ESA State Rarity G-Rank/S-Rank	Habitat Preference / Requirements	Potential for Occurrence/ Basis for Determination
Calochortus clavatus var. *gracilis* slender mariposa-lily	None/None 1B.2 G4T2T3/S2S3	Perennial bulbiferous herb. Blooms Mar-Jun. Chaparral, coastal scrub. Shaded foothill canyons; often on grassy slopes within other habitat. 420-760m (1380-2495ft).	None. Required habitat not present on site or surrounding area.
Calochortus striatus alkali mariposa-lily	None/None 1B.2 G3/S3	Perennial bulbiferous herb. Blooms Apr-Jun. Chaparral, chenopod scrub, Mojavean desert scrub, meadows. Alkaline meadows and ephemeral washes. 90-1595m (295-5235ft).	None. Required habitat not present on site or surrounding area
Calystegia peirsonii Peirson's morning-glory	None/None 4.2 G4/S4	Perennial rhizomatous herb. Blooms Apr-Jun. Chaparral, coastal scrub, chenopod scrub, cismontane woodland, lower montane coniferous forest. Often in disturbed areas or along roadsides or in grassy, open areas. 390-1470m (1280-4825ft).	None. Required habitat not present on site or surrounding area.
Canbya candida white pygmy-poppy	None/None 4.2 G3G4/S3S4	Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland. Gravelly, sandy, granitic places. 600-1460 m.	Low. Required habitat not present on site, but low potential in surrounding vacant land and preserves.
Chorizanthe parryi var. *parryi* Parry's spineflower	None/None 1B.1 G3T2/S2	Annual herb. Blooms Apr-Jun. Coastal scrub, chaparral. Dry slopes and flats; sometimes at interface of 2 veg types, such as chaparral and oak woodland; dry, sandy soils. 40-1705m (130-5595ft).	None. Required habitat not present on site or surrounding area.
Cryptantha clokeyi Clokey's cryptantha	None/None 1B.2 G3/S3	Mojavean desert scrub in sandy or gravelly soils. 725-1365 m.	Low. Required habitat not present on site, but potential in surrounding area.
Eriastrum rosamondense Rosamond eriastrum	None/None 1B.1 G1?/S1?	Alkali pool beds separated by very low hummocks with open cheopod scrub. Often sandy soil. 700-720 m.	None. Required habitat not present on site or surrounding area
Eriophyllum mohavense Barstow woolly sunflower	None/None 1B.2 G2/S2	Mostly in open, silty or sandy areas w/saltbush scrub, or creosote bush scrub. Barren ridges or margins of playas. 605-2000 m.	None. Required habitat not present on site.
Loeflingia squarrosa var. *artemisiarum* sagebrush loeflingia	None/None 2B.2 G5T3/S2	Sandy flats and dunes. Sandy areas around clay slicks with Sarcobatus, Atriplex, Tetradymia, etc. 700-1615 m.	None. Required habitat not present on site or surrounding area

Scientific Name Common Name	Status Fed/State ESA State Rarity G-Rank/S-Rank	Habitat Preference / Requirements	Potential for Occurrence/ Basis for Determination
Opuntia basilaris var. *brachyclada* short-joint beavertail	None/None 1B.2 G5T3/S3	Perennial stem succulent. Chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon-juniper woodland, riparian woodland. Sandy soil or coarse, granitic loam. 425-1800m (1395-5905ft).	Very Low. Required habitat not present on site. Surrounding area has Joshua tree woodlands, but in fragmented areas.
Puccinellia simplex California alkali grass	None/None 1B.2 G3/S2	Meadows and seeps, chenopod scrub, valley and foothill grasslands, vernal pools. Sinks, flats, and lake margins. 1-915 m.	None. Required habitat not present on site or surrounding area

G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDB RareFind 5:

G1 or S1 - Critically Imperiled Globally or Subnationally (State)

G2 or S2 - Imperiled Globally or Subnationally (State)

G3 or S3 - Vulnerable to extirpation or extinction Globally or Subnationally (State)

G4 or S4 - Apparently secure Globally or Subnationally (State)

G5 or S5 - Secure Globally or Subnationally (State)

? - Inexact Numeric Rank

T - Intraspecific Taxon (subspecies, varieties, and other designations below the level of species)

b. Regulatory Setting

This section describes federal, State, regional, and local regulations that provide for protection and management of biological resources associated with the 2016 FMP. Biological resources include plant and wildlife species, terrestrial and aquatic habitats, and habitats of concern.

Federal Regulations

Federal Endangered Species Act

The USFWS and the NMFS are responsible for implementing the federal Endangered Species Act (FESA) (16 U.S.C. §1531 et seq.). The Act protects fish and wildlife species that are listed as threatened or endangered, and their habitats. "Endangered" species, subspecies, or distinct population segments are those that are in danger of extinction throughout all or a significant portion of their range; "threatened" species, subspecies, or distinct population segments are those that are likely to become endangered in the near future.

Section 9 of the FESA prohibits the "take" of any fish or wildlife species listed as endangered, including the destruction of habitat that prevents the recovery of a species. Take is defined as an action or attempt "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Section 9 prohibitions also apply to threatened species unless a special rule has been defined with regard to take at the time of listing. Under Section 9 of the ESA, the take prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the unlawful removal and reduction to possession, or malicious damage or destruction, of any endangered plant from federal land. Section 9 prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in nonfederal areas in knowing violation of any State law or in

the course of criminal trespass. Candidate species and species that are proposed, or under petition for listing, receive no protection under Section 9.

Clean Water Act

The federal Clean Water Act (CWA) (33 U.S.C. §1251 et seq.) is administered by the US Environmental Protection Agency (USEPA) and the US Army Corps of Engineers (USACE). USACE is responsible for regulating the discharge of fill material into waters of the United States, including lakes, rivers, streams, and their tributaries, as well as wetlands that are navigable or adjacent to a navigable waterway or that have an interstate or foreign commerce connection. In 2008, USACE published the Wetlands Regulatory Assistance Program: Regional Supplements to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), which provides detailed information for the Arid West Region. Wetlands are defined as areas "inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

- Section 401: Water Quality Certification gives individual states the authority to issue, waive, or deny certification that a proposed activity is in conformance with state water quality standards. Environmental Impact Analysis Biological Resources Draft Environmental Impact Report 91 Projects, including those that require permits from the USACE under Section 404 (below) of the CWA, are reviewed by the State's Regional Water Quality Control Boards (RWQCB). The project site is under the jurisdiction of the Lahontan Regional Water Quality Control Board (Region 6).
- Section 404: Discharge of Dredged and Fill Materials into Waters of the United States gives the USACE and USEPA the authority to regulate the placement of fill and dredged materials into waters of the U.S., which include lakes, rivers, streams, and their tributaries, as well as wetlands. Wetlands are defined as areas "inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." The USACE must issue a permit for all discharges of dredged or fill material into water of the U.S., including wetlands, before proceeding with a proposed action.

USACE may either issue individual permits on a case-by-case basis or general permits at a program level. General permits are pre-authorized, and are issued to cover similar activities expected to cause only minimal adverse environmental effects.

Migratory Bird Treaty Act

The USFWS is also responsible for implementing the Migratory Bird Treaty Act (MBTA) (16 U.S.C. §703-712 et seq.). The MBTA implements a series of treaties between the United States, Mexico, and Canada that provide for the international protection of migratory birds. According to the MBTA, most actions that result in "taking" or possession (permanent or temporary) of a protected species can be a direct violation of the Act. The word "take" is defined as " pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect." The provisions of the MBTA are nearly absolute; "except as permitted by regulations" is the only exception. Examples of permitted actions that do not violate the law are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird-banding, and similar activities.

State Regulations

California Endangered Species Act

The California Endangered Species Act (CESA) establishes State policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that State agencies should not approve projects that jeopardize the continued existence of threatened or endangered species, if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that would affect species on the federal and State endangered species lists, compliance with the federal ESA satisfies CESA if the CDFW determines that the federal incidental take authorization is consistent with CESA under California Fish and Game Code Section 2080.1. For projects that would result in take of species that are only State-listed, the project proponent must apply for a take permit under Section 2081(b) of the California Fish and Game Code.

California Fish and Game Code

The CDFW derives its authority from the Fish and Game Code of California. The CESA (Fish and Game Code Section 2050 *et. seq.)* prohibits take of State-listed threatened and endangered species. Take under CESA is restricted to direct harm of a listed species and does not prohibit indirect harm by way of habitat modification. The CDFW additionally prohibits take for species designated as Fully Protected under the CFGC under various sections.

California Fish and Game Code sections 3503, 3503.5, and 3511 describe unlawful take, possession, or destruction of birds, nests, and eggs. Fully protected birds (CFGC Section 3511) may not be taken or possessed except under specific permit. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Species of Special Concern (SSC) is a category used by the CDFW for those species which are considered to be indicators of regional habitat changes or are considered to be potential future protected species. Species of Special Concern do not have any special legal status except that which may be afforded by the Fish and Game Code as noted above. The SSC category is intended by the CDFW for use as a management tool to include these species into special consideration when decisions are made concerning the development of natural lands, and these species are considered sensitive as described under the CEQA Appendix G questions. The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (CFGC Section 1900 *et seq.*). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Under Section 1913(c) of the NPPA, the owner of land where a rare or endangered native plant is growing is required to notify the department at least 10 days in advance of changing the land use to allow for salvage of the plant(s).

Lakes, ponds, perennial and intermittent streams and associated riparian vegetation, when present, also fall under the jurisdiction of the CDFW. Section 1600 et seq. of the Fish and Game Code (Lake and Streambed Alteration Agreements) gives the CDFW regulatory authority over work within the bed or bank or a lake or stream consisting of, but not limited to, the diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream or lake.

California Native Plant Protection Act

The California Native Plant Protection Act of 1977 (CNPPA) prohibits importation of rare and endangered plants into California, take of rare and endangered plants, and sale of rare and endangered plants. CESA defers to the CNPPA, which ensures that State-listed plant species are protected when State agencies are involved in projects subject to CEQA. In this case, plants listed as

rare under the CNPPA are not protected under CESA; however, impacts to endangered, rare, or threatened species, including plants, are evaluated under CEQA. The following kinds of activities are exempt from CNPPA: agricultural operations; fire control measures; timber harvest operations; mining assessment work; removal of plants by private landowners on private land for construction of canals, ditches, buildings, roads, or other rights-of-way; and, removal of plants for performance of a public service by a public agency or a publicly- or privately-owned public utility.

Porter-Cologne Water Quality Control Act

The SWRCB and RWQCBs maintain independent regulatory authority over the placement of waste, including fill, into waters of the State under the Porter-Cologne Water Quality Act of 1969. This Act is similar to and largely based off the federal Clean Water Act and is intended to preserve and enhance all beneficial uses of the waters of the State. The RWQCB currently employs the USACE procedures and definitions for defining the physical boundaries of wetlands and waters. However, there are differences in the State and federal ability to regulate these features. In order to be subject to federal regulation as waters of the United States, wetlands and waters must demonstrate that water is, or is adjacent to, a navigable waterway or a tributary to a navigable waterway, or have an interstate or foreign commerce connection. Under the Porter-Cologne Act, the State has Environmental Impact Analysis Biological Resources Draft Environmental Impact Report 93 regulatory authority over what are termed “isolated” waters and wetlands, in addition to waters of the U.S.

Regional and Local Regulations

West Mojave Habitat Conservation Plan

The West Mojave Plan is a habitat conservation plan that acts as a comprehensive strategy to conserve the desert tortoise, Mojave ground squirrel, and over 100 sensitive plants, animals, and natural communities. The plan provides for a streamlined program for complying with the requirements of the California and federal Endangered Species Acts. It encompasses a 9,357,929-acre planning area located to the north of the Los Angeles metropolitan area and applies to public and private land. (U.S. Department of interior 2005a, 2005b)

City of Lancaster General Plan

The City of Lancaster General Plan Natural Environment element provides the following policies and specific actions related to biological resources. Although the proposed 2016 FMP would not be subject to the City’s General Plan policies, the following policies pertain to biological resources:

- **Policy 3.4.1:** Ensure the comprehensive management of programs for significant biological resources that remain within the Lancaster sphere of influence
- **Policy 3.4.2**: Preserve significant desert wash areas to protect sensitive species that utilize these habitat areas.
- **Policy 3.4.3**: Encourage the protection of open space lands in and around the Poppy Preserve, Ripley Woodland Preserve and other sensitive areas to preserve habitat for sensitive mammals, reptiles, and birds, including raptors.
- **Policy 3.4.4:** Ensure that development proposals, including City sponsored projects, are analyzed for short- and long-term impacts to biological resources and that appropriate mitigation measures are implemented.

- **Policy 4.4.4(b):** Require the development occurring adjacent to biologically sensitive areas provide appropriate mitigation for potential impacts.

4.3.2 Impact Analysis

a. Methodology and Significance Thresholds

Data for biological resources were collected using aerial photographs, relevant literature, maps of natural resources, data on special-status and sensitive habitat information obtained from CNDDB, RareFind, and UPaC. A reconnaissance-level field survey was also conducted by a Rincon biologist to document existing conditions and evaluate the potential for the presence of sensitive plant communities, special status plant species, special status wildlife species, habitat for nesting birds, and other biological conditions that may be impacted by implementation of the 2016 FMP.

The following thresholds are based on Appendix G of the State CEQA Guidelines. Impacts would be significant if the proposed 2016 FMP would result in any of the following:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service
3. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
4. 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
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

The evaluation of impacts to federally protected wetlands as defined by Section 404 of the Clean Water Act (criteria 3) as well as conflicts to adopted Plans (criteria 6) are not analyzed in this EIR, as they were analyzed and determined to have no impact in the Initial Study (see Appendix A).

b. Project Impacts and Mitigation Measures

Threshold 1:	Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Impact BIO-1 THE LIKELIHOOD THAT SPECIAL STATUS PLANT OR ANIMAL SPECIES COULD BE PRESENT ON-SITE IS LOW. NEVERTHELESS, IMPLEMENTATION OF THE 2016 FMP COULD POTENTIALLY HAVE AN ADVERSE EFFECT ON CERTAIN SPECIAL-STATUS ANIMAL AND PLANT SPECIES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

Based on the review of applicable databases, 32 special-status animal species and 13 special-status plant species have been observed or have the potential to occur within the 9-quadrangle search area surrounding the project site, as detailed in Table 4.3-1. A general biological survey concluded there are no native vegetation communities that occur within the project site. Vegetation occurring within the project site consists of ornamental landscaping with some planted native trees and shrubs, and the remainder of the project site consists of buildings and paved areas. Therefore, no sensitive communities or special-status plant species are expected to occur on the project site. There is a low and very low potential for three sensitive plant species to occur off-site in the surrounding vacant land and park areas. The animal species listed in Table 4.3-1 were evaluated for their potential to occur within or adjacent to the project site. Of the 32 special-status animal species in Table 4.3-1, only five have a low potential to occur, and the rest have no potential to occur. None of these species would be expected to inhabit the developed portions of the project site due to a lack of natural habitat and a high amount of human disturbance.

The project site's proximity to Joshua tree woodland and desert scrub habitat on vacant land and preserves creates the potential for sensitive species to be in close proximity to the project site. Ornamental trees and vegetation on the project site have the potential to support nesting birds that are protected under the Migratory Bird Treaty Act (MBTA) and/or California Fish and Game Code. In addition, the project site is located near the Prime Desert Woodland Preserve and Rawley Duntley Park, which contains Joshua tree woodland habitat. Due to the close proximity, indirect impacts may occur to species occurring in these areas (such as nesting birds). Potential impacts associated with habitat removal and disturbance could occur if construction activities occur within nesting season (generally February 1 – August 31). These impacts would be potentially significant.

Mitigation Measures

BIO-1 Pre-Construction Nesting Bird Surveys

To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to the project, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season (February 1 through August 31). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.

If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.

Significance After Mitigation

Impacts would be less than significant with mitigation since implementation of the required mitigation measure would ensure that active nests are not disturbed.

Threshold 2:	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 Game or U.S. Fish and Wildlife Service?

Impact BIO-2 THE PROJECT SITE IS DEVELOPED AND THE 2016 FMP WOULD NOT IMPACT ANY SENSITIVE PLANT COMMUNITIES OR NATURAL HABITATS. THERE WOULD BE NO IMPACT.

As mentioned in Section 4.3.1, there is no federally designated critical habitat within five miles of the project site (USFWS 2017). The California Department of Fish and Game considers Joshua tree woodland a sensitive community, and the City of Lancaster also considers Joshua tree- California juniper woodlands important biological systems.

Although Joshua tree and California Juniper woodland habitat is located near the project site in Rawley Duntley Park and the Prime Desert Woodland Preserve, no riparian habitat or other sensitive natural communities exist on the project site. Because the 2016 FMP would involve the redevelopment of previously developed land, implementation of the 2016 FMP would not impact sensitive communities or habitat. Therefore, there would be no impacts to riparian habitat or other sensitive natural communities.

Mitigation Measures

No mitigation required.

Threshold 4:	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?

Impact BIO-3 IMPLEMENTATION OF THE 2016 FMP WOULD NOT IMPACT ANY ESTABLISHED WILDLIFE CORRIDORS BUT MAY INTERFERE WITH THE MOVEMENT OF SOME WILDLIFE SPECIES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

A wildlife corridor is an area of open space connecting two or more larger areas of open space. It is generally free of physical barriers such as fences and development and allows for wildlife dispersal between different habitat areas. The project site is predominantly developed with structures and pavement and has artificial and ornamental landscapes between buildings and on the recreational fields in the southwest area of campus. In addition, residential neighborhoods largely surround the campus, which further deters the movement of wildlife species in the area. The California Essential

Habitat Connectivity Project does not show the City of Lancaster or the project site to be located in an essential connectivity area, a natural landscape block, or within an interstate connection (CDFW 2014). The San Gabriel Mountains, Tehachapi Mountains, and areas to the northeast of the project site have more intact habitat that facilitates and allows for the movement of wildlife.

While the project site is not within or near a prominent wildlife movement corridor, there are habitat patches surrounding the project site that can provide suitable spaces for migrating wildlife, especially birds and more mobile species, to utilize as they travel. The Prime Desert Woodland Preserve, Rawley Duntley Park, and vacant land to the west and northwest of the project site, which contains desert scrub and individual Joshua trees, can potentially harbor migrating species. The proposed 2016 FMP would not impact any established wildlife corridors, and with implementation of Mitigation Measure BIO-1 to prevent any impacts to migrating birds, the 2016 FMP would not interfere substantially with the movement of wildlife species. Impacts would be less than significant with mitigation.

Mitigation Measures

See Mitigation Measure BIO–1.

Significance After Mitigation

With implementation of Mitigation Measure BIO-1, impacts to wildlife corridors and species would be less than significant.

c. Cumulative Impacts

A significant adverse cumulative biological resources impact would occur where the construction or operation of cumulative projects would encroach into areas containing sensitive biological resources, affect the movement of wildlife species, or affect the functionality of a planned conservation area. The 2016 FMP would occur in an urbanized and developed area in the City of Lancaster. Developed and previously disturbed areas dominate the project site as well as impervious surfaces and ornamental landscaping.

Implementation of the 2016 FMP, in conjunction with continued development in Lancaster and surrounding areas, may cumulatively increase the potential for biological resources to be impacted. Table 3-2 in Section 3 details cumulative projects in the area. Immediately surrounding the AVC campus are the sites of three tentative tract maps for single-family residential development on vacant lots to the west and southwest. These sites are surrounded by previously developed areas and do not appear to be encroaching into sensitive biological areas. Moreover, the related projects that would potentially affect biological resources would also be subject to the same requirements of CEQA as the 2016 FMP. These determinations would be made on a case-by-case basis and the effects of cumulative development on nesting birds and other sensitive species would be mitigated to the extent feasible in accordance with CEQA and other applicable legal requirements. Therefore, cumulative adverse effects on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS would be less than significant.

4.4 Cultural Resources

The analysis in this section has been prepared in accordance with Section 15064.5 of the CEQA Guidelines, which considers potential impacts to archaeological, historic, and paleontological resources. This section includes a brief summary of cultural resources background information review of known archaeological, paleontological, and built environment resources; and the 2016 FMP's potential impacts on these resources.

4.4.1 Setting

a. Regulatory Setting

Cultural resources, including built environment and archaeological resources, may be designated as historic by National, State, or local authorities. In order for a resource to qualify for listing in the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), or as a locally significant resource in the city of Lancaster, it must meet one or more identified criteria of significance. The resource must also retain sufficient historic integrity, defined in *National Register Bulletin 15* as the "ability of a property to convey its significance" (National Park Service [NPS] 1990). An explanation of these designations follows.

Federal

Cultural resources are considered during federal undertakings chiefly under Section 106 of the National Historic Preservation Act (NHPA) through one of its implementing regulations, 36 Code of Federal Regulations 800 (Protection of Historic Properties), as well as the National Environmental Policy Act (NEPA). Properties of traditional religious and cultural importance to Native Americans are considered under Section 101(d)(6)(A) of the NHPA. Other relevant federal laws include the Archaeological Data Preservation Act of 1974, American Indian Religious Freedom Act of 1978, Archaeological Resources Protection Act of 1979, and Native American Graves Protection and Repatriation Act of 1989.

National Register Historic Places

The NRHP was established by the NHPA of 1966 as "an authoritative guide to be used by Federal, State and local governments, private groups, and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment" (CFR 36 CFR 60.2). The NRHP recognizes properties that are significant at the national, state, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must also possess integrity of location, design, setting, materials, workmanship, feeling, and association. A property is eligible for the NRHP if it is significant under one or more of the following criteria:

Criterion A: It is associated with events that have made a significant contribution to the broad patterns of our history

Criterion B: It is associated with the lives of persons who are significant in our past

Criterion C: It embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values,

or represents a significant and distinguishable entity whose components may lack individual distinction; and/or

Criterion D: It has yielded, or may be likely to yield, information important in prehistory or history

State

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires that a lead agency determine whether a project could have a significant effect on historical resources and tribal cultural resources (PRC Section 21074 [a][1][A]-[B]). A historical resource is a resource listed in or determined to be eligible for listing in the CRHR (Section 21084.1), a resource included in a local register of historical resources (Section 15064.5[a][2]), or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (Section 15064.5[a][3]).

California Register of Historical Resources

CEQA (Section 21084.1) requires that a lead agency determine whether a project could have a significant effect on historical resources. A historical resource is one listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR) (Section 21084.1), a resource included in a local register of historical resources (Section 15064.5[a][2]), or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (Section 15064.5[a][3]).

PRC Section 5024.1, Section 15064.5 of the CEQA Guidelines, and PRC Sections 21083.2 and 21084.1 were used as the basic guidelines for this cultural resources study. PRC Section 5024.1 requires an evaluation of historical resources to determine their eligibility for listing in the CRHR. The purpose of the register is to maintain listings of the state's historical resources and to indicate which properties are to be protected from substantial adverse change. The criteria for listing resources in the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, enumerated below.

According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it: 1) retains substantial integrity, and 2) meets at least one of the following California Register criteria:

- It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
- It is associated with the lives of persons important in our past
- It embodies the distinctive characteristics of a type, period, region or method of installation, or represents the work of an important creative individual, or possesses high artistic values
- It has yielded or may be likely to yield information important in prehistory or history

Impacts to significant cultural resources that affect the characteristics of any resource that qualify it for the NRHP or adversely alter the significance of a resource listed in or eligible for listing in the CRHR are considered a significant impact. These impacts could result from physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired (CEQA Guidelines, Section 15064.5 [b][1]). Material impairment is defined as demolition or alteration in an adverse manner [of] those characteristics of an historical resource that convey its historical significance and

that justify its inclusion in, or eligibility for inclusion in, the California Register (CEQA Guidelines, Section 15064.5[b][2][A]).

California Public Resources Code

Section 5097.5 of the California Public Resources Code (PRC) states:

> "No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor."

As used in this PRC section, "public lands" means lands owned by or under the jurisdiction of the State or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, local agencies are required to comply with PRC 5097.5 for their own activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken by others.

Codes Governing Human Remains

The disposition of human remains is governed by Health and Safety Code Section 7050.5 and PRC Sections 5097.94 and 5097.98, and falls within the jurisdiction of the Native American Heritage Commission (NAHC). If human remains are discovered, the County Coroner must be notified within 48 hours, and there should be no further disturbance to the site where the remains were found. If the remains are determined by the coroner to be Native American, the coroner is responsible for contacting the NAHC within 24 hours. The NAHC, pursuant to PRC Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased Native Americans so they can inspect the burial site and make recommendations for treatment or disposal.

Paleontological Resources

CEQA does not define "a unique paleontological resource or site." However, the Society of Vertebrate Paleontology (SVP) has defined a "significant paleontological resource" in the context of environmental review as follows:

> "Fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are generally older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years) (SVP 2010:11)."

Local

City of Lancaster General Plan 2030

The *City of Lancaster General Plan 2030*, Chapter IV. Plan for Active Living provides the following policy and specific actions in Goal 12 as they relate to Historic, Archaeological, and Cultural Resources (City of Lancaster 2009b):

Policy 12.1.1. Preserve features and sites of significant historical and cultural value consistent with their intrinsic and scientific values.

Specific Actions

12.1.1 (a) As part of the CEQA review process, require site-specific historical, archaeological, and/or paleontological studies when there exists a possibility that significant environmental impacts might result or when there is a lack of sufficient documentation on which to determine potential impacts.

12.1.1 (b) Include a condition of approval on all development projects that addresses State and Federal regulations with respect to the disposition of cultural resources.

12.1.1 (c) Process requests for inclusion in state and federal historic registers those historic and prehistoric sites and features which meet state or federal criteria.

12.1.1 (d) Prior to permitting demolition of any historic structure, require that an evaluation of the condition of the structure, potential adaptive reuse of the structure, and the cost of rehabilitation be undertaken.

b. Cultural Setting

Prehistoric Overview

Various chronological sequences have been proposed by archaeologists to describe cultural change within California (Jones and Klar 2007, Moratto 1984). Most recently, Sutton et al. (2007) devised an updated Mojave Desert culture history, dividing it into five temporal periods: Late Pleistocene, Terminal Pleistocene, Early Holocene, Middle Holocene, and Late Holocene.

Late and Terminal Pleistocene (Pre-10,000–8,000 B.C.)

The climate of the Mojave Desert in the Pleistocene Period is generally characterized as cool and wet (Sutton et al. 2007:231). During this time, the Rosamond Lake Basin in the Antelope Valley encompassed low-elevation woodlands, the pluvial Lake Thomson, and springs that supported herds of horses, camels, and mammoths (Price et al. 2009:4). The presence of lakes generally indicates an environment with plentiful food and water resources suitable for early human habitation, especially as compared to the harsher desert environment now present. However, claims of pre-Clovis archaeological sites in the Mojave Desert remain controversial and are generally not accepted by most professional archaeologists. Nonetheless, it is possible that such occupation did occur within the region, and sites with reliable early dates may yet be found, as has happened elsewhere in the Americas.

The Clovis Complex is the earliest and only Paleo-Indian cultural complex in the Mojave Desert that is widely accepted by researchers (Sutton et al. 2007:233-234). This complex is predominantly defined by large lanceolate bifaces with fluting initiated from the base of the projectile and extending as far as the midline. Overshot percussion flaking, argued both as intentional and unintentional, is commonly observed as the method to produce the large, thin, and fluted bifaces (Dickens 2005). The lateral margins near the base often demonstrate grinding, likely as a result of hafting to a spear (Hranicky 2010, Justice 2002). Other tools associated with the Clovis Complex include large side scrapers, blades derived from prepared cores, and a mixture of expedient flaked tools (Justice 2002:73). Paleo-Indian populations associated with fluted point technology consisted of small, mobile groups who hunted and gathered near permanent sources of water such as pluvial

lakes like Lake Thompson in the Rosamond Lake Basin. The tools associated with these populations are most commonly found in the drainage basins of the pluvial lakes (Sutton et al. 2007:234).

Evidence of terminal Pleistocene and early Holocene habitation in the Antelope Valley continues to grow but remains a difficult subject. As Adams et al (2008) note, the paleoclimatic evidence indicates that it would be ideal for peoples to occupy; however, much of the archaeological assemblages presumed to date to this time period consist of open air sites with only surface materials that are either not directly datable or rely on relative dating methods of questionable accuracy (609-610).

Early Holocene (8,000–6,000 B.C.)

The onset of the early Holocene around 8,000 B.C. was marked by warmer temperatures, reduced precipitation, and the contraction of large beds of water into smaller lakes, including Rosamond Lake, Buckhorn Lake, and Rogers Dry Lake (formerly Muroc Dry Lake). These changes are believed to have caused an irregular distribution of resources available to early Holocene inhabitants of the Antelope Valley (Sutton et al. 2007:237). The shallow lakes and marshes of the Mojave Desert during this period were biologically very productive but surrounded by desert vegetation typical of later time periods, initially dominated by white bursage and later creosote bush (Grayson 2011).

The Lake Mojave Complex is identified primarily by heavy, stemmed projectile points of the Great Basin Stemmed series such as Lake Mojave and Silver Lake. Other tools include bifaces, steep-edged unifaces, crescents, the occasional cobble-core tool, and, infrequently, ground stone implements (Justice 2002:91). Settlement organization components include extensive residential accumulations, workshops, and small camps containing handfuls of tools (Sutton et al. 2007:237).

Middle Holocene (7,000-3,000 B.C.)

The middle Holocene climate was generally more arid than periods before and after but experienced multiple oscillations between wetter and drier conditions. The desiccation of the lakes and marshes of the Pleistocene and early Holocene required the region's inhabitants to rely on streams and springs for water, resulting in lower occupational densities (Aikens 1978, Cleland and Spaulding 1992, Sutton 1996; Warren 1984). Average temperatures and aridity increased, peaking between 4,000 and 3,000 B.C. Settlement patterns adapted, including a shift to upland settings where sources of water still existed and changes in tool assemblage content and diversity marking the emergence of the Pinto Complex (Sutton 1996).

Warren (1984) notes the earliest research in this period began in in the 1920's by Elizabeth and William Campbell who worked at the Pinto site, which became the type site for that period. Campbell (1936) lays out the basic culture history of the Pinto Complex. During the latter part of the Early Holocene, archaeological data indicate that the Pinto Complex overlaps the Lake Mojave Complex (Sutton et al. 2007:237). The Pinto Complex reflects shifts in subsistence patterns and adaptation to the shriveling of the Pleistocene lakes, including a greater emphasis on the exploitation of plants, with the continued pursuit of artiodactyls (e.g., deer) and smaller game. The broad distribution of this complex implies a high degree of residential mobility. Love (1991) notes the low occupation of this area during this time with small bands immigrating and abandoning the area, seemingly focusing on large game.

The hallmarks of the Pinto Complex tool assemblage include concave base and bifurcate base projectile points with strong basal ears and more gradual shoulders (Justice 2002:126). Other

diagnostic artifacts of this complex include domed and keeled scrapers, large and small leaf-shaped bifaces, core/cobble tools, large metates and milling slabs, and shaped and unshaped handstones.

Near the end of the middle Holocene the climate became increasingly hotter and arid. Very few sites date to during this time, between 3,000 and 2,000 B.C., suggesting that populations were very low. It is possible that some areas were abandoned during this hot period (Sutton et al. 2007:241).

Late Holocene (2,000 B.C.–Contact)

The climate of the prehistoric late Holocene was similar to current conditions, cooler and moister than the middle Holocene, but not as cool and moist as the early Holocene. The climate remained highly variable with periods that included the Mojave lakes refilling to levels of earlier high water, contrasted with at least two major droughts, circa A.D. 892 to 1112, and circa A.D. 1209 to 1350 (Stine 1994). A cooler and wetter period occurred between 600 and 150 years ago (Cleland and Spaulding 1992:4). These climatic changes at the onset of the late Holocene once again resulted in modified subsistence strategies and correlating tool kits of three progressive cultural complexes: Gypsum Complex, Rose Spring Complex, and Late Prehistoric Complex (or period).

Dart-point size projectile points including notched or eared (Elko), concave base (Humboldt), and small-stemmed (Gypsum) types characterized those of the Gypsum Complex. In addition to these diagnostic points, Gypsum Complex sites included leaf-shaped points, rectangular-based knives, flake scrapers, drills, and, occasionally, large scraper planes, choppers, and hammerstones (Warren 1984:416). Manos and milling stones were common, but the mortar and pestle were also introduced during this period. Other artifacts found at Gypsum Complex sites include split-twig animal figurines, *Olivella* shell beads, and *Haliotis* beads and ornaments, which are indicative of trade with people of the southern California coast and southern Great Basin. The inhabitants of the Mojave Desert exported high quality locally available cryptocrystalline tool stone such as obsidian, chalcedony, and chert in exchange for exotic materials.

By A.D. 200, a slightly cooler climate appears to have provided for an increased population, based on a higher frequency of archeological sites. The Rose Spring Complex was present from approximately A.D. 200 to 1100, with regional temporal variations known as the Saratoga Springs, Haiwee, or Amargosa periods (Sutton 1996; Sutton et al. 2007:236). The smaller Rose Spring projectile points replaced the dart-size points of previous complexes and heralded the introduction of the bow and arrow (Yohe 1998). The bow and arrow provided its user a way to rapidly fire multiple projectiles during hunting or warfare and from a position of relative security compared to the atl-atl or spear. This technological innovation appears to correspond with the onset of the Numic expansion westward to the coast, which some researchers believe started from southeastern California (Bettinger and Baumhoff 1982, Grayson 2011). Bedrock milling features supplement portable milling stones in villages and ancillary sites within the California deserts.

The Late Prehistoric period (circa A.D. 1100) corresponds to the introduction of ceramic artifacts in the Mojave Desert region as well as replacement of Rose Spring projectile points with even smaller Desert Side-notched points and Cottonwood series points. The mortar and pestle became more widespread during this period and evidence of food storage facilities becomes increasingly common. In the central Mojave Desert, the Mojave River became a primary focus of occupation, and trade networks increased along the Mojave River and over the San Gabriel Mountains (Sutton 1996).

Archeological evidence left by highly mobile hunter-gatherers in the Mojave Desert during the Late Prehistoric period is typified by sparse scatters of flaked stone, ground stone, and ceramic artifacts and features such as hearths, rock rings, and trails.

c. Ethnographic Overview

Antelope Valley Community College is within a transitional zone that was occupied by multiple cultural groups including the Serrano, Kitanemuk and Tataviam (cf., Bean and Smith 1978; Blackburn and Bean 1978; Kroeber 1976). All of these groups are better associated with portions of the surrounding mountains – Serrano to the northeast, Kitanemuk to the northwest, Tataviam to the southwest – but all of them likely visited the Antelope Valley floor as part of their resource exploitation strategies. Ethnographic boundaries in the Mojave Desert are loosely defined, owing to the highly mobile nature of desert settlement and resource extraction strategies, as well as the variety of interpretations presented by previous researchers. The following sections provide brief overviews of the three groups likely to have ethnographically used the area where the current Antelope Valley Community College is present.

Serrano

The Serrano occupied an area in and around the San Bernardino Mountains between approximately 450 and 3,350 meters (1,500-11,000 feet) above mean sea level. Their territory extended west of the Cajon Pass, east past Twentynine Palms, north of Victorville, and south to Yucaipa Valley. The Serrano language is part of the Serran division of a branch of the Takic family of the Uto-Aztecan linguistic stock (Bean and Smith 1978). The two Serran languages, Kitanemuk and Serrano, are closely related. Kitanemuk lands were northwest of Serrano lands. Serrano was originally spoken by a relatively small group located within the San Bernardino and Sierra Madre mountains, and the term “Serrano” has come to be ethnically defined as the name of the people in the San Bernardino Mountains (Kroeber 1976:611). The Vanyume, who lived along the Mojave River and associated Mojave Desert areas and are also referred to as the Desert Serrano, spoke either a dialect of Serrano or a closely related language (Bean and Smith 1978). Year-round habitation tended to be located on the desert floor, at the base of the mountains, and up into the foothills, with all habitation areas requiring year-round water sources (Bean and Smith 1978).

Most Serrano lived in small villages located near water sources (Bean and Smith 1978:571). Houses measuring 3.7 – 4.3 m (12 to 14 feet) in diameter were domed and constructed of willow branches and tule thatching and occupied by a single extended family. Many of the villages had a ceremonial house, used both as a religious center and the residence of the lineage leaders. Additional structures within a village might include granaries and a large circular subterranean sweathouse. The sweathouses were typically built along streams or pools. A village was usually composed of at least two lineages. The Serrano were loosely organized along patrilineal lines and associated themselves with one of two exogamous moieties or “clans”—the Wahiyam (coyote) or the Tukum (wildcat) moiety.

The subsistence economy of the Serrano was one of hunting and collecting plant goods, with occasional fishing (Bean and Smith 1978:571). They hunted large and small animals, including mountain sheep, deer, antelope, rabbits, small rodents, and various birds, particularly quail. Plant staples consisted of seeds; acorn nuts of the black oak; piñon nuts; bulbs and tubers; and shoots, blooms, and roots of various plants, including yucca, berries, barrel cacti, and mesquite. The Serrano used fire as a management tool to increase yields of specific plants, particularly chía.

Trade and exchange was an important aspect of the Serrano economy. Those living in the lower-elevation, desert floor villages traded foodstuffs with people living in the foothill villages who had access to a different variety of edible resources. In addition to inter-village trade, ritualized communal food procurement events, such as rabbit and deer hunts and piñon, acorn, and mesquite

nut-gathering events, integrated the economy and helped distribute resources that were available in different ecozones.

Contact between Serrano and Europeans was relatively minimal prior to the early 1800s. As early as 1790, however, Serrano began to be drawn into mission life (Bean and Vane 2002). More Serrano were relocated to Mission San Gabriel in 1811 after a failed indigenous attack on that mission. Most of the remaining western Serrano were moved to an *asistencia* built near Redlands in 1819 (Bean and Smith 1978:573).

A smallpox epidemic in the 1860s killed many indigenous southern Californians, including many Serrano (Bean and Vane 2002). Oral history accounts of a massacre in the 1860s at Twentynine Palms may have been part of a larger American military campaign that lasted 32 days (Bean and Vane 2002:10). Surviving Serrano sought shelter at Morongo with their Cahuilla neighbors; Morongo later became a reservation (Bean and Vane 2002). Other survivors followed the Serrano leader Santos Manuel down from the mountains and toward the valley floors and eventually settled in what later became the San Manuel Band of Mission Indians Reservation, formally established in 1891.

Both the San Manuel Band of Mission Indians and the Morongo Band of Mission Indians are federally recognized tribes and include Serrano. People of both tribes participate in cultural programs to revitalize traditional languages, knowledge, and practices.

Kitanemuk

The Kitanemuk are one of the least-understood ethnographic groups in California, and were largely ignored within the historic record (Stickel and Weinman-Roberts 1980: 102). Kitanemuk territory extended from the Tehachapi Mountains at the northwestern edge of the Antelope Valley southeast to beyond Rosamond Lake, although their populations were most dense in the mountains at the southern end of the San Joaquin Valley (Blackburn and Bean 1978:564; Kroeber 1976:611). The Kitanemuk were primarily mountain dwellers subsisting primarily on seasonal foodstuffs, primarily acorns, but also including piñon pine, chia, elderberry, yucca, and mesquite (Stickel and Weinman-Roberts 1980: 103).

Kroeber (1976:611) noted that the Kitanemuk were a subdivision of the Serrano and thus spoke a language of the Takic family that was similar to dialects spoken by groups living as far south and east as Yucca Valley and Twentynine Palms. Although some aspects of Kitanemuk social organization are similar to those of other Takic speaking groups, Blackburn and Bean (1978:564) argue that Kitanemuk ritual, mythology, and shamanism were most strongly shaped by their neighbors to the north (Kawaiisu and Tubatulabal) and west (Chumash). The Kitanemuk appear to have enjoyed particularly strong trade ties with coastal and inland Chumash groups (Blackburn and Bean 1978:564, Kroeber 1976:613). Modern-day descendants of the Kitanemuk live at the Tule River Reservation, Porterville, and Tejon Ranch (Four Directions Institute 2007).

Tataviam

Like the Kitenamuk, the Tataviam were not well documented by early ethnographers. However, researchers today generally agree that the Tataviam spoke an Uto-Aztecan language, most likely a Takic language (Hudson 1982). Tataviam territory included the upper Santa Clara River from Piru Creek eastward, extending over the Sawmill Mountains to the southwest edge of the Antelope Valley (King and Blackburn 1978). Their territory was bounded on the west and north by various Chumash groups; on the south by the Tongva (Gabrielino and Fernandeño, though some Tataviam

were also identified as Fernandeño because of their association with Mission San Fernando); and to the east by the Kitanemuk and Serrano.

Exogamous marriage was common, with Tataviam intermarrying with Tongva, Chumash, and Kitanemuk neighbors (King and Blackburn 1978). King and Blackburn (1978) hypothesize that the Tataviam relied on yucca as a food source more than their neighbors because of the predominance of large south-facing slopes within their territory. Additional food resources included acorns, sage seeds, berries, small mammals, and deer. Settlement size ranged from 10 to 200 persons, with small settlements often ancillary to large villages. Archaeological evidence from Bower's Cave – located between Newhall and Piru – combined with ethnographic evidence suggest their ritual organization was similar to both the Chumash and Gabrielino, whose lifestyles were distinct from one another. By 1810, the Tataviam were almost completely "missionized" through baptism at Mission San Fernando.

d. Historic Overview

The post-Contact history of California is generally divided into three periods: the Spanish period (1769–1822), the Mexican period (1822–1848), and the American period (1848–present). Each of these periods is briefly described below.

Spanish Period (1769–1822)

In 1542, Juan Rodriguez Cabrillo led the first European expedition to observe what is now called southern California (Bean and Smith 1978). For more than 200 years, Cabrillo and other Spanish, Portuguese, British, and Russian explorers sailed the Alta (upper) California coast and made limited inland expeditions, but they did not establish permanent inland settlements (Bean 1968, Rolle 2003).

Gaspar de Portolá and Franciscan Father Junípero Serra established the first Spanish settlement along the west coast of the modern United States in what was known as Alta California at Mission San Diego de Alcalá in 1769. Mission San Diego was the first of 21 missions established by the Spanish between 1769 and 1823. The missions were responsible for controlling the native populations as well as converting the population to Christianity (Engelhardt 1927a). No Spanish missions were established in the Antelope Valley, but local Native Americans were influenced by other native populations migrating to the area, driven from their homelands by the encroaching Spanish.

Although Portolá may have encountered a group of Tataviam during the 1769 explorations, the first known Spanish explorers to enter the Antelope Valley were a group of soldiers led by Pedro Fages in 1772. In 1776, Friar Francisco Garcés traveled through the valley coming from the Colorado River (Hoover et al. 2002:321). During the Juan Batista de Anza expedition, Friar Francisco Garcés reported "interaction with the Kitanemuk but very little historical information has been recorded on them" (Pacific Legacy, Inc. 2008:14).

During this period, Spain also deeded a limited number of ranchos to prominent citizens and soldiers, few in comparison to the following Mexican Period. To manage and expand herds of cattle on these large ranchos, colonists enlisted the labor of the surrounding Native American population (Engelhardt 1927b). The increased local population density and contact with European-brought diseases significantly reduced the Native American population (McCawley 1996). Native American populations in Kern County were less affected by the missions and the problems associated with European settlement of California. However, in some cases, individuals were taken from their tribes

to be educated at one of the missions before being sent back (Morgan 1914). By 1810, for example, the Tataviam "almost all had been baptized at the San Fernando Mission" located approximately 48 miles southwest of Antelope Valley Community College.

Mexican Period (1822–1848)

The Mexican period commenced when news of the success of the Mexican Revolution (1810-1821) against the Spanish crown reached California in 1822. This period was an era of extensive interior land grant development and exploration by American fur trappers west of the Sierra Nevada Mountains. The California missions declined in power and were ultimately secularized in 1834. The hallmark of the Mexican period was large ranchos deeded to prominent Mexican citizens, frequently soldiers, by the governor. These ranchos became important economic and social centers; however, no ranchos were claimed in the arid Antelope Valley. Rancho La Liebre, straddling present Los Angeles and Kern counties was the closest land grant located in the mountains west of the valley. Governor Pío Pico and his predecessors made more than 600 rancho grants between 1833 and 1846, putting most of the state's lands into private ownership for the first time (Gumprecht 1999). Gold was found on Rancho San Francisco in 1842 at Placerita Canyon, the first to be found in California.

American Period (1848–Present)

The American Period officially began with the signing of the Treaty of Guadalupe Hidalgo in 1848, in which the United States agreed to pay Mexico $15 million for conquered territory including California, Nevada, Utah, and parts of Colorado, Arizona, New Mexico, and Wyoming. In 1850, California was admitted as the 31st state.

The discovery of gold in the foothills east of Sacramento led to the California Gold Rush in 1848, despite the first California gold being discovered in Placerita Canyon near the San Fernando Mission in 1842 (Guinn 1977). Cattle ranches continued to dominate Southern California in the early American period, though droughts and increasing population resulted in farming and more urban professions. These new developments increasingly supplanted ranching through the late nineteenth century. By 1853, the population of California exceeded 300,000. Thousands of settlers and immigrants continued to move into the state, particularly after the completion of the transcontinental railroad in 1869.

During the Gold Rush, thousands of people traveled the Mojave River Trail from the east attempting to reach the fabled goldfields of California. The Mojave River Trail was called the Old Spanish Trail by Captain John C. Frémont, until he met a group of Native Americans northeast of Victorville who told Frémont they had lived along the Mojave River and the mountains to the north and traded with other indigenous peoples in the region along the Mojave River Trail (Frémont 1845:260).

The construction of the Southern Pacific Railroad in 1876 was a major development in the Antelope Valley and proved to be the foundation for development. By 1920, upward of 80 towns were founded in the Antelope Valley area. Most of these towns were located along the railroad. However, a major component of the economy was ranching and agriculture (County of Los Angeles Public Library 2013). Key themes in Antelope Valley history include transportation, mining, and military use.

City of Lancaster

The Lancaster area was largely undeveloped prior to the completion of the Southern Pacific Railroad through the Antelope Valley. The City is thought to have been named by M.L. Wicks, a real estate developer who purchased the land from the Southern Pacific Railroad in 1884 and named it after his former home Lancaster, Pennsylvania (City of Lancaster 2017). In 1898, gold and borax was discovered in the mountains surrounding Lancaster and saw with it an influx of miners to the region, contributing to further growth of the City.

The establishment of Edwards Air Force Base (formerly the Muroc Army Air Base) in 1933 garnered the Lancaster area national and international attention as being the location of one of the Country's largest air force bases and the world's longest runway (Columbia University Press 2013). Operations at Edwards Air Force Base include research and development of aerospace weapons and rocket-propulsions systems at the Air Force Flight Test Center and NASA's Flight Research Center. The Base additionally functions as a proving ground for military aircraft and has historically been involved in several space shuttle missions, acting as a landing point for spacecraft including the *Challenger* on September 5, 1983 (Columbia University Press 2013).

Antelope Valley Community College

Founded in 1929, Antelope Valley College began as an extension of community of Lancaster's Antelope Valley High School, and initially operated from the school's facilities. In the years before World War II, the college served a rural community, in which agriculture—particularly the growing of alfalfa—was the predominant livelihood. By 1939, the school boasted an average daily attendance of about 100, though this figure fell dramatically during World War II (AVC 2016a).

Attendance at the college not only rebounded with the end of hostilities in 1945, but grew dramatically. Lancaster benefited from southern California's postwar population boom, as the promise of jobs in the aerospace industry drew new residents to the Antelope Valley. Attendance at AVC increased as well, due in part to federal subsidies provided to students under the G.I. Bill. By 1956, swelling college enrollment contributed to overcrowding at the high school campus, and, as a result, officials acquired temporary off-campus classroom space to accommodate the new students (AVC 2016a). During the 1960-1961 academic year—the last in which it operated without an independent campus—enrollment for daytime instruction reached 1,028, while night school enrollees numbered 1,355 (Los Angeles Times [LAT] Nov. 14, 1961).

Under the leadership of Dr. Lowell F. Barker, Antelope Valley College's first president, a program was initiated to build a separate campus for the college. In January 1959, the Antelope Valley Joint Union High School District released plans for the new campus, to be housed on a 110-acre site at the intersection of 30th Street West and West Avenue K, and intended to serve as many as 2,500 students. Designed by the firm of architect Henry L. Gogerty, the campus was slated to include administrative offices, lecture halls and laboratories, a gymnasium, a cafeteria, and a student center, all situated along a landscaped "central mall." Parking areas were located at the far ends of the campus. District officials also set aside space for the future construction of an auditorium and a "parent education" building (LAT Jan 1959). The first phase of construction ended in 1961, at a cost of approximately $4.5 million. On November 14 of that year, the new AVC campus was dedicated and opened for instruction, serving both university transfer students and students enrolled in terminal two-year programs (LAT Nov. 14, 1961). In addition to opening an independent campus, AVC also severed administrative ties with the AVUHSD in 1962. On July 1, the college came under

the authority of a newly established junior college district and a Board of Trustees, headed by former college president Barker (LAT Dec 12, 1961, AVC 2016b).

AVC continued to expand capacity in the 1960s and 1970s to meet the demands of the growing communities of Lancaster, Quartz Hill, and Palmdale. In 1965, district voters approved a $1 million bond to improve services and double the school's capacity from 1,500 to 3,000 (LAT Oct 20, 1965). At the time of its opening, the campus was located in a still-undeveloped agricultural area outside Lancaster. By the mid-1970s, however, residential subdivisions had encroached on the alfalfa fields south and east of the college (AVC 2016b, Nationwide Environmental Title Research Online [NETR Online]). District officials authorized the construction of a new theater, music building, consumer education building, and arts building, all lining the perimeter of the Fine Arts Quad (AVC 2016a). The $1.2 contract was awarded to architects Albert C. Martin & Associates and general contractor Dermody, Inc. and Welker Construction Company (LAT Sept 1, 1968). In addition, a handful of technical and vocational education buildings were constructed at the north side of campus (AVC 2016: "First 34 Years"). In this period, new educational offerings at AVC included a certificate program for Registered Nurses and training for Lockheed Martin aerospace employees (AVC 2016c).

Since the 1970s AVC has continued to expand both its physical plant and its curriculum. In the 1990s, state financing funded the construction of new library and an administrative building among other facilities (AVC 2016a). Between 1994 and 2014, the mostly undeveloped northern end of the campus was built out to include several major buildings and new parking lots. Additional athletics fields were constructed on the western side of the grounds. The college also operates a satellite campus in Palmdale. Combined current enrollment at both campuses is over 18,000. AVC also offers upper-division and graduate-level courses through a joint program with CSU Bakersfield. (AVC 2016a).

e. Regional Geology

The project site is located in the Antelope Valley in the western Mojave Desert geomorphic province of California, which extends from the San Andreas and Garlock faults east to the Basin and Range and Colorado Desert (California Geological Survey 2002). The Mojave Desert formed following Paleozoic subsidence and sediment accumulation; Mesozoic plutonism, regional uplift, deformation and metamorphism; Cenozoic extension and volcanism; and ongoing crustal deformation associated with movements along the Garlock and San Andreas faults (Glazner et al. 2002).

The western Mojave Desert is situated on top of an uplifted basement block composed of Proterozoic metamorphic rocks overlain by Paleozoic to Mesozoic metasedimentary and volcanic rocks intruded by Cretaceous igneous rocks (Garfunkel 1974). The region is characterized by broad Quaternary alluvial basins with local exposures of uplifted and unroofed pre-Cenozoic basement rock and Neogene to Pleistocene volcanic domes and terrestrial sedimentary deposits (Dibblee 1967). The most significant geologic feature in the immediate vicinity of the proposed project area is the north-west-trending San Andreas fault, located south of the City of Lancaster. The surface geomorphic expression of the San Andreas fault forms a sharp transition between the relatively flat floor of the Mojave Desert and the rugged terrain of the San Gabriel Mountains to the south. Extensive surficial sedimentary deposits from alluvial fans, landslides, washes, etc., are present at the margin between the Mojave Desert and the San Gabriel Mountains.

f. Previously Identified Cultural and Paleontological Resources

Cultural Resources

California Historical Research Information System

On April 25, 2018, a search of the California Historical Research Information System (CHRIS) at South Central Coastal Information Center (SCCIC) at California State University, Fullerton was conducted to determine if previously identified archaeological or built environment resources are present on the project site. The search included a review of the NRHP, the CRHR, the California State Historical Landmarks list, the California Points of Historical Interest list, historic building surveys, the Archaeological Determinations of Eligibility list, and the California Inventory of Historical Resources list. The records search provided information about archaeological resources, historic resources, and reports within a 0.5-mile radius of the project site. The records search identified 21 reports of studies previously conducted within a 0.5-mile radius of the project site. Of these, two previous projects overlap with or were within the project site. The records search results also identified four previously recorded archaeological resources within the search radius; none of which were located within the project site. As shown in Table 4.4-1, the record search did not identify any built resources within the search radius. Two resources, CA-LAN-000765 and CA-LAN-003688H, are located adjacent to the project site.

Table 4.4-1 Previously Recorded Cultural Resources from the SCCIC Records Search

Primary Number	Trinomial	Resource Type	Description	Recorded/ Updated By and Year	CRHR Eligibility Status	Proximity to Project Site
P-19-000765	CA-LAN-000765	Prehistoric site	Lithic scatter and habitation debris	R.W. Robinson 1976	Unevaluated	Adjacent
P-19-002209	CA-LAN-002209H	Historic site	Lancaster Oil Well; foundation and trash scatter	S. Bholat 2006	Unevaluated	Outside
P-19-003688	CA-LAN-003688H	Historic site	Trash scatter	Beth Padon, Dough McIntosh, Keith Hamm 2007	Unevaluated	Adjacent
P-19-100316	N/A	Prehistoric isolate	Two flakes-one quartzite and one unidentified	B. Love 1988	Unevaluated	Outside

Paleontological Resources

Paleontological resources (fossils) are the remains and/or traces of prehistoric life. Fossils are typically preserved in layered sedimentary rocks and the distribution of fossils is a result of the sedimentary history of the geologic units within which they occur. Fossils occur in a non-continuous and often unpredictable distribution within some sedimentary units, and the potential for fossils to occur within sedimentary units depends on a number of factors. Although it is not possible to determine whether a fossil will occur in any specific location, it is possible to evaluate the potential for geologic units to contain scientifically significant paleontological resources, and therefore evaluate the potential for impacts to those resources and provide mitigation for paleontological resources if they do occur during construction.

Paleontological Resources Sensitivity

Paleontological sensitivity refers to the potential for a geologic unit to produce scientifically significant fossils. Direct impacts to paleontological resources occur when earthwork activities, such as grading or trenching, cut into the geologic deposits (formations) within which fossils are buried and physically destroy the fossils. Since fossils are the remains of prehistoric animal and plant life, they are considered to be nonrenewable. Such impacts have the potential to be significant and, under CEQA guidelines, may require mitigation. Sensitivity is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey.

The discovery of a vertebrate fossil locality is of greater significance than that of an invertebrate fossil locality, especially if it contains a microvertebrate assemblage. The recognition of new vertebrate fossil locations could provide important information on the geographical range of the taxa, their radiometric age, evolutionary characteristics, depositional environment, and other important scientific research questions. Vertebrate fossils are almost always significant because they occur more rarely than invertebrates or plants. Thus, geological rock units having the potential to contain vertebrate fossils are considered the most sensitive.

The Society of Vertebrate Paleontology outlines in their Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (SVP 2010) guidelines for categorizing paleontological sensitivity of geologic units within a project area. The SVP (2010) describes sedimentary rock units as having a high, low, undetermined, or no potential for containing significant nonrenewable paleontological resources. This criterion is based on rock units within which vertebrate or significant invertebrate fossils have been determined by previous studies to be present or likely to be present. Significant paleontological resources are fossils or assemblages of fossils, which are unique, unusual, rare, uncommon, diagnostically or stratigraphically important, and those which add to an existing body of knowledge in specific areas, stratigraphically, taxonomically, or regionally. While these standards were specifically written to protect vertebrate paleontological resources, all fields of paleontology have adopted these guidelines. Rincon has evaluated the paleontological sensitivity of the project site according to the following SVP (2010) categories; the results are discussed below:

High Potential (Sensitivity)

Rock units from which significant vertebrate or significant invertebrate fossils or significant suites of plant fossils have been recovered are considered to have a high potential for containing significant non-renewable fossiliferous resources. These units include but are not limited to: sedimentary formations and some volcanic formations which contain significant nonrenewable paleontological resources anywhere within their geographical extent and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Sensitivity comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Areas which contain potentially datable organic remains older than Recent, including deposits associated with nests or middens, and areas which may contain new vertebrate deposits, traces, or trackways are also classified as significant.

Low Potential (Sensitivity)

Sedimentary rock units that are potentially fossiliferous, but have not yielded fossils in the past or contain common and/or widespread invertebrate fossils of well documented and understood taphonomic, phylogenetic species and habitat ecology. Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils prior to the start of construction. Generally, these units will be poorly represented by specimens in institutional collections and will not require protection or salvage operations. However, as excavation for construction gets underway it is possible that significant and unanticipated paleontological resources might be encountered and would require a change of classification from Low to High Potential and, thus, require monitoring and mitigation if the resources are found to be significant.

Undetermined Potential (Sensitivity)

Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined fossiliferous potentials. Field surveys by a qualified vertebrate paleontologist to specifically determine the potentials of the rock units are required before programs of impact mitigation for such areas may be developed.

No Potential

Rock units of metamorphic or igneous origin are commonly classified as having no potential for containing significant paleontological resources.

In general terms, for geologic units with high sensitivity, full-time monitoring typically is recommended during any project-related ground disturbance. For geologic units with low sensitivity, protection or salvage efforts typically are not required. For geologic units with undetermined sensitivity, field surveys by a qualified paleontologist are usually recommended to specifically determine the paleontological potential of the rock units present within the study area. For geologic units with no sensitivity, a paleontological monitor is not required.

Geologic Units in the Project Area

The project site includes one (1) geologic unit mapped at the surface by Dibblee and Minch (2008): Quaternary alluvial deposits (Qa) of Holocene age. The Holocene alluvium is composed of silt, sand, and fine gravel deposited on alluvial fans emanating from the Ritter Ridge hills to the south (McLeod 2018). Holocene age alluvial sediments are typically too young to contain fossilized material (SVP 2010), but they may overlie sensitive older Quaternary (Pleistocene) deposits at an unknown depth. Quaternary alluvial, fluvial, and lacustrine deposits of Pleistocene age have yielded significant vertebrate fossil localities throughout California and the Mojave Desert, including taxa mammoth, horse, camel, bison, bird, rodent, reptile, and fish (Jefferson 2010, McLeod 2018, University of California Museum of Paleontology [UCMP] 2018).

Locality Record Search

A search of the paleontological locality records at the LACM resulted in no previously recorded fossil localities within the project site. However, several vertebrate localities have been recorded nearby from within the same or similar geologic units (McLeod 2018). Approximately 5-10 miles north of the project site, localities LACM 7853 and LACM 7884 yielded fossil specimens of camel (*Camelops hesternus*), rabbit (*Sylvilagus audubonii*), wood rat (*Neotoma*), deer mouse (*Peromyscus*), pocket

gopher (*Thomomys bottae*), kangaroo rat (*Dipodomys*), pocket mouse (Perognathus), ground squirrel (*Ammospermophilus leucurus*), whipsnake (*Masticophis*), leaf-nosed snake (*Phyllorhynchus*), lyre snake (*Trimorphodon biscutatus*), desert iguana (*Dipsosaurus dorsalis*), alligator lizard (*Elgaria*), desert spiny lizard, (*Sceloporus magister*), side-blotched lizard (*Uta stansburiana*), horned lizard (Phrynosomatidae), skink (*Plestiodon*), western whiptail (*Aspidoscelis tigris*), desert night lizard (*Xantusia vigilis*), and smelt (Osmeridae). Approximately 15 miles southeast of the project site, localities LACM 5942-5953 produced a fauna of small vertebrates from Quaternary older alluvium, including gopher snake (*Pituophis*), kingsnake (*Lampropeltis*), leopard lizard (*Gambelia wislizenii*), rabbit, pocket mouse, kangaroo rat, and pocket gopher.

4.4.2 Impact Analysis

a. Methodology and Significance Thresholds

Under CEQA, any project that may cause a substantial adverse change in the significance of a historical resource would also have a significant effect on the environment. According to Appendix G of the *State CEQA Guidelines*, impacts related to cultural resources from implementation of the 2016 FMP would be significant if it would:

1. Cause a substantial adverse change in the significance of an historical resource as defined in Section 15064.5
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5
3. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature of paleontological or cultural value
4. Disturb any human remains, including those interred outside of dedicated cemeteries

Historical Resources

Under CEQA, any project that may cause a substantial adverse change in the significance of a historical resource would also have a significant effect on the environment. Substantial adverse change to the significance of a historical resource is defined as physical demolition, destruction, alteration, or relocation of the resource or immediate surroundings such that its significance would be materially impaired. CEQA states that when a project will cause damage to a historical resource, reasonable efforts must be made to preserve the resource in place or left in an undisturbed state. Mitigation measures are required to the extent that the resource could be damaged or destroyed by a project. Projects that follow the Secretary of the Interior's Standards for the Treatments of Historic Properties are typically mitigated below the level of significance.

Archaeological Resources

Under CEQA, archaeological resources may meet the definition of a historical resource or unique archaeological resource. Any project that may cause a substantial adverse change in the significance of a historical resource would also have a significant effect on the environment. Substantial adverse change to the significance of a historical resource is defined as physical demolition, destruction, alteration, or relocation of the resource or immediate surroundings such that its significance would be materially impaired. CEQA states that when a project would cause damage to a unique archaeological resource, reasonable efforts must be made to preserve the resource in place or leave

it in an undisturbed state. Mitigation measures are required to the extent that the resource could be damaged or destroyed by a project.

Paleontological Resources

Rincon evaluated the paleontological sensitivity of the geologic units that underlie the project site using the results of the paleontological locality search (as described in the Paleontological Resources Sensitivity section above) and review of existing information in the scientific literature concerning known fossils within those geologic units. Rincon submitted a request to the Natural History Museum of Los Angeles County (LACM) for a list of known fossil localities from the project site and immediate vicinity (i.e., localities recorded on the United States Geological Survey [USGS] Lancaster West, CA 7.5-minute topographic quadrangle), and reviewed geologic maps and scientific publications.

b. Project Impacts and Mitigation Measures

Threshold 1:	Cause a substantial adverse change in the significance of an historical resource as defined in Section 15064.5

Impact CR-1 IMPLEMENTATION OF THE 2016 FMP COULD CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF POTENTIALLY HISTORIC RESOURCES ON THE PROJECT SITE THROUGH DEMOLITION, ALTERATION OF BUILDINGS AND NEW CONSTRUCTION. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

The cultural resources records search completed for the 2016 FMP did not identify any previously recorded or evaluated built environment resources in the project site. None of the individual buildings or the campus as a whole has been evaluated for historic significance.

The 2016 FMP is a strategy for modifying the physical campus in Lancaster to accommodate growth and change over the next 30 years, as shown in Table 2-2 of Section 2, *Project Description*. Implementation of the FMP over five phases would include new construction, building renovations, change of use, and site development projects. The FMP would facilitate demolition or alteration of various buildings on the project site that are over the age of 50 years old and have not been evaluated for historic significance, as shown in Table 4.4-2. In addition, there are buildings in the project site that will become 50 years old through the duration of the FMP. The 135-acre campus contains 205 permanent and temporary buildings, which display a mix of architectural styles. The earliest buildings on the campus were constructed between 1960 and 1969 and are modest examples of Mid-Century and Late Modern design. Little building construction occurred in the 1970s and 1980s. The majority of the extant buildings on the campus were constructed after 1990 and are contemporary in design

In accordance with NRHP and CRHR designation criteria, properties over 50 years of age which meet one or more of the of the NRHP or CRHR eligibility criteria are potentially historic. AVC has played a role in the development of Lancaster and the Antelope Valley since its founding in 1929, as described in Section 4.4-1(d), and the history of its development also reflects the history of the City and the region. While the project site has only been home to the Lancaster campus of AVC since 1961, it is still associated with the development of the region since that time. Some of the buildings on the project site may therefore qualify for historic significance either individually or collectively, based on this association and for other reasons such as their age. Changes to any buildings or associated features found to be CEQA historical resources would be considered potentially significant. Therefore, the proposed removal and renovation of buildings 50 years old or older at the

project site could potentially impact historic buildings, structures, and related features and has the potential to cause significant adverse impacts to historical resources.

Table 4.4-2 AVC Campus Buildings to be Demolished or Altered

AVC Building/Facility Name	Year Built	Action in 2016 FMP
Student Services	1961	Demolish
Student Center	1961	Demolish
Fine Arts 1	1969	Demolish
Fine Arts 2	1969	Demolish
Fine Arts 3	1969	Demolish
Fine Arts 4	1969	Demolish
Learning Center	1961	Demolish
Faculty Office 1	1960	Demolish
Faculty Office 2	1960	Demolish
Faculty Office 3	1967	Demolish
Lecture Hall	1960	Demolish
Liberal Studies 1	1967	Demolish
Liberal Studies 2	1967	Demolish
Matt/Engineering	1962	Demolish
Technical Education 1	1960	Demolish
Technical Education 2	1960	Demolish
SOAR High School	2009	Demolish
CSUB	1995	Demolish
Gymnasium	1961	Renovation/Change of Use
Business Education	2002	Renovation/Change of Use
Applied Arts	1995	Renovation/Change of Use
Field House	2009	Renovation/Change of Use

Mitigation Measures

The following mitigation measures shall be implemented as part of any project involving demolition or renovation of a building over 50 years of age at the time of construction to avoid and/or reduce impacts to potential historic resources from future projects in the FMP to the greatest extent feasible:

CR-1(a) Historical Assessments of Potential Historic Resources

Prior to any construction activities that may affect buildings over 50 years of age at the time of construction, a historical resources assessment shall be performed by an architectural historian or historian who meets the National Parks Service PQS in architectural history or history. The assessment shall include an intensive-level survey and archival research in accordance with the

California Office of Historic Preservation guidelines to identify any previously unrecorded potential historical resources within the project site or vicinity that may be affected by the proposed project. California Department of Parks and Recreation (DPR) Forms shall be prepared for all surveyed properties. Pursuant to CEQA, potential historical resources shall be evaluated for their eligibility for listing in the CRHR under a developed historic context. The findings of the study shall be incorporated into a historical resource assessment report and submitted to the AVCCD for review and approval.

CR-1(b) Secretary of the Interior's Standards for Relocation, Rehabilitation, or Alteration of Historic Resources

To ensure that construction activities requiring the relocation, rehabilitation, or alteration of any historical resource identified under Mitigation Measure CR-1(a) do not impair their significance, the Secretary of the Interior's Standards shall be used to the maximum extent possible. The application of the Standards shall be overseen by a qualified architectural historian or historic architect meeting the PQS. Prior to any construction activities that may affect the historical resource, a report identifying and specifying the treatment of character-defining features, the extent of adaptive reuse, and construction activities shall be provided to the AVCCD for review and approval.

CR-1(c) Documentation for Demolition or Significant Alteration of Historic Resources

If proposed on-site construction would result in the demolition or significant alteration of a historical resource identified under Mitigation Measure CR-1(a), it cannot be mitigated to a less than significant level and impacts would be significant and unavoidable. However, recordation of the resource prior to construction activities will assist in reducing adverse impacts to the resource to the greatest extent possible. Recordation shall take the form of Historic American Buildings Survey, Historic American Engineering Record or Historic American Landscape Survey (HABS/HAER/HALS) documentation, and shall be performed by an architectural historian or historian who meets the PQS. Documentation shall include an architectural and historical narrative; medium- or large-format black and white photographs, negatives, and prints; and supplementary information such as building plans and elevations, and/or historic photographs. Documentation shall be reproduced on archival paper and copies of this documentation, photographs, and negatives, along with architectural and historical narrative shall be submitted to the AVCCD, City of Lancaster, the West Antelope Valley Historical Society and the Lancaster Museum of Art and History, and any other local, state, or federal institutions deemed appropriate. The documentation report(s) shall be submitted and approved by the AVCCD prior to issuance of demolition permits.

CR-1(d) Interpretive Plan for Demolition of Historic Resources

If on-site construction would result in the demolition or significant alteration of a historical resource identified under Mitigation Measure CR-1(a), an interpretive plan shall be completed. A qualified architectural historian who meets the Secretary of the Interior's Professional Qualification Standards for History and/or Architectural History shall be selected by the lead agency to prepare an onsite interpretive plan, which shall consist of a public display, plaque, or other suitable interpretive approach, as approved by the lead agency. It shall focus on the significant historic themes associated with the historic properties to be demolished and shall include any collected research pertaining to the historic property, and images and details from the HABS/HAER/HALS documentation. The interpretive display shall be installed in an appropriate public location in the project site within one year of the date of completion of the proposed project. If no appropriate public location is available, an appropriate offsite public location for the display shall be identified.

The interpretive display shall remain in public view for a minimum of five years, and if removed, appropriately archived.

Significance After Mitigation

Implementation of Mitigation Measures CR-1(a) through CR-1(d) would reduce impacts to potential historic resources, but would not eliminate the significant impacts associated with demolition of potentially significant historic resources. Therefore, impacts would remain potentially significant and unavoidable for demolished historical resources.

Threshold 2:	Cause a substantial adverse change in the significance of an archaeological resources pursuant to Section 15064.5

Impact CR-2 IMPLEMENTATION OF THE 2016 FMP COULD CAUSE AN ADVERSE CHANGE IN THE SIGNIFICANCE OF PREVIOUSLY UNDISCOVERED ARCHAEOLOGICAL RESOURCES. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

The records search results indicate that the project site contains no known archaeological resources. However, two resources are recorded adjacent to the project site and two resources are recorded within the 0.5-mile search radius. Ground disturbance associated with future development or improvements facilitated by the 2016 FMP could potentially impact and cause adverse changes to unknown archaeological resources on the project site. The following measures are required to avoid and reduce potential impacts to archaeological resources from future projects facilitated by the 2016 FMP to a less than significant level.

Mitigation Measures

The following mitigation measures shall be implemented as part of each project requiring ground disturbance facilitated by the 2016 FMP.

CR-2(a) Archaeological Resources Assessment

As projects facilitated by the 2016 FMP are proposed, AVCCD shall determine the need for an updated archaeological resources study on a project by project basis. Situations where an archaeological resources study may not be required include, but are not limited to, project sites with zero ground visibility (site is completely developed), and projects in areas already heavily disturbed by past construction. When AVCCD determines an assessment to be warranted, the study shall be performed under the supervision of an archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards (PQS) in either prehistoric or historic archaeology. Assessments shall include a CHRIS records search from the South Central Coastal Information Center (SCCIC) no more than five years old, and of the Sacred Lands File (SLF) maintained by the Native American Heritage Commission (NAHC). The records searches will determine if the proposed project area was previously surveyed for archaeological resources, identify and characterize the results of previous cultural resource surveys, and disclose any cultural resources that have been recorded and/or evaluated. A Phase I pedestrian survey shall be undertaken in proposed project areas with exposed ground surface to locate any surface cultural materials. By performing a records search, consultation with the NAHC, and a Phase I survey, a qualified archaeologist will be able to classify the project area as having high, medium, or low sensitivity for archaeological resources. Should any resources be identified during future studies, additional cultural resources investigations such as a

Phase II evaluation, and Phase III data recovery may be necessary if a resource cannot be avoided after discovery.

CR-2(b) Archaeological and/or Native American Monitoring

If the cultural resources study(ies) required under MM CR-2(a) identify the presence of archaeological resources or archaeological sensitivity, archaeological monitoring shall be required. A qualified archaeologist shall monitor all ground-disturbing construction and pre-construction activities in areas within previously undisturbed soil. Native American monitoring may also be required. If the archaeological assessment identifies a project site as having medium sensitivity for archaeological resources, an archaeologist who meets the PQS shall be retained on an on-call basis rather than for full-time monitoring. The archaeologist shall inform all construction personnel prior to construction activities of the proper procedures in the event of an archaeological discovery. The training shall be held in conjunction with the project's initial onsite safety meeting and shall explain the importance and legal basis for the protection of significant archaeological resources. In the event that archaeological resources (artifacts or features) are exposed during ground-disturbing activities, MM CR-2(c) shall go into effect.

CR-2(c) Unanticipated Discovery of Archaeological Resources

If archaeological resources are encountered during ground-disturbing activities, work in the immediate area should be halted and an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work, such as data recovery excavation, may be warranted to mitigate any significant impacts to historical resources. After a potentially significant resource is found, monitoring shall occur at the location for any future ground disturbance at the discretion of a qualified archaeologist.

Significance After Mitigation

Implementation of Mitigation Measures CR-2(a) through CR-2(c) would reduce impacts to archeological resources to a less than significant level by requiring the identification and treatment of archaeological resources that may be impacted by future projects.

Threshold 3:	Directly or indirectly destroy a unique paleontological resource or unique geologic feature of paleontological or cultural value

Impact CR-3 IMPLEMENTATION OF THE 2016 FMP WOULD RESULT IN GROUND-DISTURBING ACTIVITIES, WHICH COULD HAVE THE POTENTIAL TO DESTROY PREVIOUSLY UNDISCOVERED SIGNIFICANT PALEONTOLOGICAL RESOURCES. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

Consistent with SVP (2010) guidelines, the paleontological sensitivity of the project site was determined based on a literature review and museum locality search. Holocene sedimentary deposits, particularly those younger than 5,000 years old, are generally too young to contain fossilized material. As described in the Setting, the Holocene alluvial deposits mapped in the project site have been determined to have a low paleontological resource potential at shallow to moderate depth because they are likely too young to contain fossilized material. At an unknown depth, the Holocene deposits may grade into older Quaternary alluvial deposits that would have the potential

to contain fossilized remains. Development of projects facilitated by the 2016 FMP would occur within previously disturbed land on the project site; therefore, it is unlikely that previously undisturbed strata with the potential to contain paleontological resources would be disturbed during construction. As such, impacts to paleontological resources are not anticipated as a result of implementation of the 2016 FMP. While further paleontological resource management is not recommended unless paleontological resources are unexpectedly encountered during ground disturbance, Mitigation Measure CR-3 is required in order to mitigate impacts to a less than significant level in the event of such unexpected discoveries.

Mitigation Measures

Mitigation Measure CR-3 shall be implemented as part of each project carried out under the 2016 FMP that involves ground disturbance.

CR-3 Unanticipated Discovery of Paleontological Resources

In the event an unanticipated fossil discovery is made during on-site grading or excavation, then in accordance with SVP (2010) guidelines, a qualified professional paleontologist shall be retained in order to examine the find and to determine if further paleontological resources investigation, such as salvage or paleontological monitoring, is warranted.

Significance After Mitigation

Mitigation Measure CR-3 would reduce impacts to paleontological resources to a less than significant level by requiring further investigation if unanticipated discoveries are made during ground disturbance.

Threshold 4:	Disturb any human remains, including those interred outside of dedicated cemeteries

Impact CR-4 GROUND DISTURBING ACTIVITIES ASSOCIATED WITH DEVELOPMENT UNDER THE 2016 FMP COULD RESULT IN DAMAGE TO OR DESTRUCTION OF PREVIOUSLY UNDISCOVERED HUMAN REMAINS BUT, WITH ADHERENCE TO EXISTING REGULATIONS, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

No human remains are known to be present within the Plan Area. If human remains are exposed during ground-disturbing activities, State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the county coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In accordance with this code, in the event of an unanticipated discovery of human remains, the county coroner would be notified immediately. If the human remains are determined to be prehistoric, the coroner will notify the NAHC, which will determine and notify a most likely descendant (MLD). The MLD would complete the inspection of the discovery and make recommendations to the landowner within 48 hours of being granted access to the project site. With adherence to existing regulations, impacts to human remains would be less than significant. No mitigation is required.

Mitigation Measures

No mitigation required.

c. Cumulative Impacts

Cumulative development from implementation of the 2016 FMP, as well as the projects discussed in Section 3.3 of this EIR, may affect cultural resources, as discussed below.

Historic Resources

Cumulative development on the project site and in surrounding areas has the potential to disturb potential historical resources. As shown in Figure 3-2 of this EIR, there are three "active projects" within one-half mile of the project site, but they are all proposed on vacant land, and it is unlikely that any historic resources exist on these sites that could, if negatively affected by development of the sites, contribute to cumulative impacts to historic resources. Additionally, potential impacts associated with individual development projects would be addressed on a case-by-case basis, and could be similarly mitigated if necessary. However, because impacts to historic resources from implementation of the 2016 FMP are potentially significant and unavoidable at the project level, cumulative impacts of the 2016 FMP and other future development are also potentially significant and unavoidable.

There are 13 buildings currently on the project site that are 50 years old and another four buildings that will become 50 years old through the duration of the FMP. These buildings are proposed to undergo renovation or demolition as part of the FMP. Any demolition or any significant alterations to any historical resources identified pursuant to implementation of mitigation measures CR-1(a) and CR-1(b), have the potential to contribute to significant cumulative impacts to historical resources. These potential impacts of the 2016 FMP would be reduced through implementation of mitigation measures CR-1(a) through CR-1(d), but this impact of the 2016 FMP would remain potentially significant and unavoidable.

Archaeological Resources

Cumulative development on the project site and throughout Lancaster would disturb areas that may potentially contain archaeological resources. While there is the potential for significant cumulative impacts to archaeological resources from such development, the 2016 FMP's impacts can be reduced to below a level of significance with implementation of mitigation measures CR-2(a) through CR-2(c), and potential impacts associated with other individual development projects would be addressed on a case-by-case basis, and could be similarly mitigated if necessary. Therefore, cumulative impacts to archaeological resources would be less than significant with mitigation incorporated.

Paleontological Resources

Cumulative development on the project site and throughout Lancaster would disturb areas that may potentially contain paleontological resources. While there is the potential for significant cumulative impacts to paleontological resources from such development, it is unlikely that construction of individual projects under the 2016 FMP would disturb previously undisturbed strata with a potential for buried paleontological resources, since the project site has already been fully developed, and surface soils in the area are generally too young to contain fossilized material. In the unlikely event of such discoveries on the project site, any 2016 FMP impacts can be reduced to below a level of significance with implementation of Mitigation Measure CR-3. Other future development in the area would have a similarly low potential to affect paleontological resources, but could contribute to significant cumulative impacts to paleontological resources. Such impacts, however, would be

addressed on a case-by-case basis, and could be similarly mitigated if necessary. Therefore, cumulative impacts to paleontological resources would be less than significant with mitigation incorporated.

Human Remains

Potential impacts to human remains are site specific, not cumulative in nature, and if human remains are exposed during ground-disturbing activities associated with other projects in the project site vicinity or elsewhere, the same existing regulations applicable to project carried out under the 2016 FMP would apply to these other projects. Therefore, significant cumulative impacts to human remains are not anticipated.

4.5 Greenhouse Gas Emissions

This section discusses the contribution of human activities to global climate change, and provides a summary of existing greenhouse gas (GHG) emissions both globally and locally. This section also describes the criteria for determining significance and analyzes the proposed 2016 FMP's potential impacts related to GHG emissions, including generation of GHG emissions and consistency with plans, policies, and regulations related to GHGs.

4.5.1 Environmental Setting

a. Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. The term "climate change" is often used interchangeably with the term "global warming," but "climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to a rising average global temperature. The baseline against which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate is continuously changing, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming during the past 150 years. Per the United Nations Intergovernmental Panel on Climate Change (IPCC), the understanding of anthropogenic warming and cooling influences on climate has led to a high confidence (95 percent or greater chance) that the global average net effect of human activities has been the dominant cause of warming since the mid-20th century (IPCC 2013).

Gases that absorb and re-emit infrared radiation in the atmosphere are GHGs. The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), fluorinated gases such as hydrofluorocarbons (HFC) and perfluorocarbons (PFC), and sulfur hexafluoride (SF_6). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

GHGs are emitted by both natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing associated with agricultural practices and landfills. Observations of CO_2 concentrations, globally-averaged temperature, and sea level rise are generally within the range of the extent of earlier IPCC projections. The recently observed increases in CH_4 and N_2O concentrations are smaller than those assumed in the scenarios in the previous assessments. Each IPCC assessment has used new projections of future climate change that have become more detailed as the models have become more sophisticated.

Man-made GHGs, many of which have greater heat absorption potential than CO_2, include fluorinated gases and SF_6 (California Environmental Protection Agency [CalEPA] 2006). Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years).

Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as "carbon dioxide equivalent" (CO_2e), and is the amount of a GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane CH_4 has a GWP of 25, meaning its global warming effect is 25 times greater than carbon dioxide on a molecule per molecule basis (IPCC 2007).

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat trapping effect of GHGs, Earth's surface would be about 34 degrees Celsius (°C) cooler (CalEPA 2006). However, it is believed that emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of those that occur naturally. The following discusses the primary GHGs of concern.

Carbon Dioxide

The global carbon cycle is made up of large carbon flows and reservoirs. Billions of tons of carbon in the form of CO_2 are absorbed by oceans and living biomass (i.e., sinks) and are emitted to the atmosphere annually through natural processes (i.e., sources). When in equilibrium, carbon fluxes among these various reservoirs are roughly balanced (United States Environmental Protection Agency [USEPA] 2014). CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration, with the first conclusive measurements made in the second half of the twentieth century. Concentrations of CO_2 in the atmosphere have risen approximately 40 percent since the industrial revolution. The global atmospheric concentration of CO_2 has increased from a pre-industrial value of about 280 parts per million (ppm) to 391 ppm in 2011 (IPCC 2007; National Oceanic and Atmospheric Administration [NOAA] 2017). The average annual CO_2 concentration growth rate was larger between 1995 and 2005 (average: 1.9 ppm per year) than it has been since the beginning of continuous direct atmospheric measurements (1960–2005 average: 1.4 ppm per year), although there is year-to-year variability in growth rates (NOAA 2017). Currently, CO_2 represents an estimated 74 percent of total GHG emissions (IPCC 2007). The largest source of CO_2 emissions, and of overall GHG emissions, is fossil fuel combustion.

Methane

Methane (CH_4) is an effective absorber of radiation, though its atmospheric concentration is less than that of CO_2 and its lifetime in the atmosphere is limited to 10 to 12 years. It has a GWP approximately 25 times that of CO_2. Over the last 250 years, the concentration of CH_4 in the atmosphere has increased by 148 percent (IPCC 2007), although emissions have declined from 1990 levels. Anthropogenic sources of CH_4 include enteric fermentation associated with domestic livestock, landfills, natural gas and petroleum systems, agricultural activities, coal mining, wastewater treatment, stationary and mobile combustion, and certain industrial processes (USEPA 2014).

Nitrous Oxide

Concentrations of nitrous oxide (N_2O) began to rise at the beginning of the industrial revolution and continue to increase at a relatively uniform growth rate (NOAA 2017). Microbial processes in soil and water produce N_2O. These include reactions that occur in fertilizers that contain nitrogen, fossil fuel combustion, and other chemical processes. Use of these fertilizers has increased over the last century. Agricultural soil management and mobile source fossil fuel combustion are the major

sources of N_2O emissions. The GWP of nitrous oxide is approximately 298 times that of CO_2 (IPCC 2007).

Fluorinated Gases (HFC, PFC, and SF_6)

Fluorinated gases, such as HFC, PFCs, and SF_6, are powerful GHGs that are emitted from a variety of industrial processes. Fluorinated gases are used as substitutes for ozone-depleting substances such as chlorofluorocarbons (CFC), hydrochlorofluorocarbons (HCFC), and halons, which have been regulated since the mid-1980s because of their ozone-destroying potential and are phased out under the Montreal Protocol (1987) and Clean Air Act Amendments of 1990. Electrical transmission and distribution systems account for most SF_6 emissions, while PFC emissions result from semiconductor manufacturing and as a by-product of primary aluminum production. Fluorinated gases are typically emitted in smaller quantities than CO_2, CH_4, and N_2O, but these compounds have much higher GWPs. SF_6 is the most potent GHG the IPCC has evaluated.

b. Greenhouse Gas Emissions Inventory

Worldwide anthropogenic emissions of GHGs were approximately 46,000 million metric tons (MMT, or gigatonnes) CO_2e in 2010 (IPCC 2014). CO_2 emissions from fossil fuel combustion and industrial processes contributed about 65 percent of total emissions in 2010. Of anthropogenic GHGs, carbon dioxide was the most abundant accounting for 76 percent of total 2010 emissions. Methane emissions accounted for 16 percent of the 2010 total, while nitrous oxide and fluorinated gases account for six and two percent respectively (IPCC 2014).

Total GHG emissions in the U.S. were 6,511.3 $MMTCO_2e$ in 2016 (USEPA 2018). Total U.S. emissions have increased by 2.9percent since 1990. Emissions decreased by 1.9 percent from 2015 to 2016 (USEPA 2018). The decrease from 2015 to 2016 was due to a decrease in the carbon intensity of fuels consumed to generate electricity due to a decrease in coal consumption, with increased natural gas consumption. Additionally, relatively mild winter conditions, especially in regions of the United States where electricity is important for heating, resulted in an overall decrease in electricity demand in most sectors. In 2016, fossil fuel combustion accounted for 76 percent of total U.S. CO_2 emissions. In 2016, the transportation and industrial end-use sectors accounted for 36 percent and 27 percent of CO_2 emissions from fossil fuel combustion (with electricity-related emissions distributed), respectively. Meanwhile, the residential and commercial end-use sectors accounted for 19 percent and 17 percent of CO_2 emissions from fossil fuel combustion, respectively (USEPA 2018b).

Based upon the California Air Resources Board (CARB) California Greenhouse Gas Inventory for 2000-2015, California produced 440.4 $MMTCO_2e$ in 2015 (CARB 2017a). The major source of GHG in California is transportation, contributing 39 percent of the state's total GHG emissions. Industrial sources are the second largest source of the state's GHG emissions (CARB 2017a). California emissions are due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG emissions, as compared to other states, is its relatively mild climate.

c. Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century.

Long-term trends have found that each of the past three decades has been warmer than all the previous decades in the instrumental record, and the decade from 2000 through 2010 has been the warmest. The global combined land and ocean temperature data show an increase of about 0.89°C (0.69°C–1.08°C) over the period 1901–2012 and about 0.72°C (0.49°C–0.89°C) over the period 1951–2012 when described by a linear trend. Several independently analyzed data records of global and regional Land-Surface Air Temperature (LSAT) obtained from station observations are in agreement that LSAT and sea surface temperatures have increased. In addition to these findings, there are identifiable signs that global warming is currently taking place, including substantial ice loss in the Arctic over the past two decades (IPCC 2013).

According to the CalEPA's *2010 Climate Action Team Biennial Report*, potential impacts of climate change in California may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CalEPA 2010). Below is a summary of some of the potential effects that could be experienced in California due to of climate change.

Air Quality

Higher temperatures, which are conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thereby ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (California Energy Commission [CEC] 2009).

Hydrology and Water Supply

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varied hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future water supplies in California. However, the average early spring snowpack in the Sierra Nevada decreased by about 10 percent during the last century, a loss of 1.5 million acre-feet of snowpack storage. During the same period, sea level rose eight inches along California's coast. California's temperature has risen 1°F, mostly at night and during the winter, with higher elevations experiencing the highest increase. Many southern California cities have experienced their lowest recorded annual precipitation twice within the past decade. In a span of only two years, Los Angeles experienced both its driest and wettest years on record (California Department of Water Resources [DWR] 2008, California Climate Change Center [CCCC] 2009).

This uncertainty complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The Sierra snowpack provides the majority of California's water supply by accumulating snow during the state's wet winters and releasing it slowly during the state's dry springs and summers. Based upon historical data and modeling DWR projects that the Sierra snowpack will experience a 25 to 40 percent reduction from its historic average by 2050. Climate change is also anticipated to bring

warmer storms that result in less snowfall at lower elevations, reducing the total snowpack (DWR 2008).

Sea Level Rise and Ocean Acidification

According to *The Impacts of Sea-Level Rise on the California Coast*, prepared by the CCCC, climate change has the potential to induce substantial sea level rise in the coming century (CCCC 2009). The rising sea level increases the likelihood and risk of flooding. The rate of increase of global mean sea levels over the 2001-2010 decade, as observed by satellites, ocean buoys and land gauges, was approximately 3.2 mm per year, which is double the observed 20th century trend of 1.6 mm per year (World Meteorological Organization [WMO] 2013). As a result, sea levels averaged over the last decade were about 8 inches higher than those of 1880 (WMO 2013). Sea levels are rising faster now than in the previous two millennia, and the rise is expected to accelerate, even with robust GHG emission control measures. The most recent IPCC report (2013) predicts a mean sea–level rise of 11-38 inches by 2100. This prediction is more than 50 percent higher than earlier projections of 7-23 inches, when comparing the same emissions scenarios and time periods. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply due to salt water intrusion.

In addition, the ocean absorbs about 30 percent of the CO_2 released to the atmosphere every year, so as atmospheric CO_2 levels increase, so do the levels in the ocean. When CO_2 is absorbed by seawater, a series of chemical reactions occur resulting in the increased concentration of hydrogen ions. This increase causes the seawater to become more acidic and causes carbonate ions, which are important building blocks for structures such as sea shells and coral skeletons, to be relatively less abundant. Decreases in carbonate ions can make building and maintaining shells and other calcium carbonate structures difficult for calcifying organisms such as oysters, clams, sea urchins, corals, and calcareous plankton. For example, the pteropod is a tiny sea creature about the size of a small pea. Pteropods are eaten by organisms ranging in size from tiny krill to whales and are a major food source for several ocean species. When pteropod shells are placed in sea water with pH and carbonate levels projected for the year 2100, the shells slowly dissolve after 45 days. Ocean acidification could have severe ramifications with regard to ocean and coastal economies and the current food web structure (NOAA 2013).

Agriculture

California has a $30 billion annual agricultural industry that produces half of the country's fruits and vegetables. Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase; crop-yield could be threatened by a less reliable water supply; and greater air pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (CCCC 2009).

Ecosystems and Wildlife

Climate change and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increasing concentrations of GHGs are likely to accelerate the rate of climate change. Scientists project that the average global surface temperature could rise by 1.0-4.5°F (0.6-2.5°C) in the next 50 years, and 2.2-10°F (1.4-5.8°C) in the next century, with substantial regional variation. Soil moisture is likely to decline in many regions, and intense

rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: (1) timing of ecological events; (2) geographic range; (3) species' composition within communities; and (4) ecosystem processes, such as carbon cycling and storage (Parmesan 2006).

4.5.2 Regulatory Setting

The following regulations address both climate change and GHG emissions.

a. International

United Nations Framework Convention on Climate Change

The United States is, and has been, a participant in the United Nations Framework Convention on Climate Change (UNFCCC) since it was formed in 1992. The UNFCCC is an international environmental treaty with the objective of "stabilization of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." This is generally understood to be achieved by stabilizing global GHG concentrations between 350 and 400 ppm in order to limit the global average temperature increases between 2 and 2.4°C above pre-industrial levels (IPCC 2007). For a current reference, atmospheric CO_2 concentrations reached 400 ppm in 2015 (USEPA 2016). The UNFCCC itself does not set limits on GHG emissions for individual countries or enforcement mechanisms. Instead, the treaty provides for updates, called "protocols," that would identify mandatory emissions limits.

Kyoto Protocol

Five years later, the UNFCCC brought nations together again to draft the *Kyoto Protocol* (1997). The Kyoto Protocol established commitments for industrialized nations to reduce their collective emissions of six GHGs (CO_2, CH_4, N_2O, SF_6, HFCs, and PFC) to 5.2 percent below 1990 levels by 2012. The United States is a signatory of the Kyoto Protocol, but Congress has not ratified it and the United States has not bound itself to the Protocol's commitments (United Nation 2018). The first commitment period of the Kyoto Protocol ended in 2012. Governments, including 38 industrialized countries, agreed to a second commitment period of the Kyoto Protocol beginning January 1, 2013 and ending on December 31, 2020 with the adoption of the Doha Amendment to the Kyoto Protocol on December 8, 2012 (UNFCCC 2018). Although the United States is responsible for emitting approximately 27 percent of global cumulative CO_2 emissions from 1850 to 2011 (World Resources Institute [WRI] 2014), the United States is the only Signatory that has not ratified the 192-Party Protocol (United Nations 2018).

Durban Platform for Enhanced Action

In Durban (17th session of the Conference of the Parties [COP] in Durban, South Africa in 2011), governments decided to adopt a universal legal agreement on climate change. Work began on that task immediately under a new group called the Ad Hoc Working Group on the Durban Platform for Enhanced Action. Progress was also made regarding the creation of a Green Climate Fund, for which a management framework was adopted (UNFCCC 2018, United Nations 2011).

Paris Agreement

In December 2015, the 21st session of the Conference of the Parties (COP21) adopted the Paris Agreement. The deal requires all countries that ratify it to commit to cutting greenhouse gas

emissions, with the goal of peaking greenhouse gas emissions "as soon as possible" (Worland 2015). The agreement includes commitments to (1) achieve a balance between sources and sinks of greenhouse gases in the second half of this century; (2) to keep global temperature increase "well below" 2 degrees Celsius (C) or 3.6 degrees Fahrenheit (F) and to pursue efforts to limit it to 1.5 C; (3) to review progress every five years; and (4) to spend $100 billion a year in climate finance for developing countries by 2020 (UNFCCC 2015). The agreement includes both legally binding measures, like reporting requirements, as well as voluntary or non-binding measures while, such as the setting of emissions targets for any individual country (Worland 2015).

b. Federal

The United States Supreme Court in *Massachusetts et al. v. Environmental Protection Agency et al*. ([2007] 549 U.S. 05-1120) held that the USEPA has the authority to regulate motor-vehicle GHG emissions under the federal Clean Air Act.

The USEPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines, and requires annual reporting of emissions. The first annual reports for these sources were due in March 2011.

On May 13, 2010, the USEPA issued a Final Rule that took effect on January 2, 2011, setting a threshold of 75,000 tons CO_2e per year for GHG emissions. New and existing industrial facilities that meet or exceed that threshold will require a permit after that date. On November 10, 2010, the USEPA published the "PSD and Title V Permitting Guidance for Greenhouse Gases." The USEPA's guidance document is directed at state agencies responsible for air pollution permits under the Federal Clean Air Act to help them understand how to implement GHG reduction requirements while mitigating costs for industry. It is expected that most states will use the USEPA's new guidelines when processing new air pollution permits for power plants, oil refineries, cement manufacturing, and other large pollution point sources.

On January 2, 2011, the USEPA implemented the first phase of the Tailoring Rule for GHG emissions Title V Permitting. Under the first phase of the Tailoring Rule, all new sources of emissions are subject to GHG Title V permitting if they are otherwise subject to Title V for another air pollutant and they emit at least 75,000 tons CO_2e per year. Under Phase 1, no sources were required to obtain a Title V permit solely due to GHG emissions. Phase 2 of the Tailoring Rule went into effect July 1, 2011. At that time new sources were subject to GHG Title V permitting if the source emits 100,000 tons CO_2e per year, or they are otherwise subject to Title V permitting for another pollutant and emit at least 75,000 tons CO_2e per year.

On July 3, 2012 the USEPA issued the final rule that retains the GHG permitting thresholds that were established in Phases 1 and 2 of the GHG Tailoring Rule. These emission thresholds determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities.

c. State

CARB is responsible for the coordination and oversight of State and local air pollution control programs in California. California has numerous regulations aimed at reducing the state's GHG emissions. These initiatives are summarized below.

Assembly Bill 1493

Assembly Bill (AB) 1493 (2002), California's Advanced Clean Cars program (referred to as "Pavley"), requires CARB to develop and adopt regulations to achieve "the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles." On June 30, 2009, USEPA granted the waiver of Clean Air Act preemption to California for its greenhouse gas emission standards for motor vehicles beginning with the 2009 model year. Pavley I took effect for model years starting in 2009 to 2016 and Pavley II, which is now referred to as "LEV (Low Emission Vehicle) III GHG" will cover 2017 to 2025. Fleet average emission standards would reach 22 percent reduction from 2009 levels by 2012 and 30 percent by 2016. The Advanced Clean Cars program coordinates the goals of the Low Emissions Vehicles (LEV), Zero Emissions Vehicles (ZEV), and Clean Fuels Outlet programs and would provide major reductions in GHG emissions. By 2025, when the rules will be fully implemented, new automobiles will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions from their model year 2016 levels (CARB 2011b).

Executive Order S-03-05

In 2005, the governor issued Executive Order (EO) S-03-05, establishing statewide GHG emissions reduction targets. EO S-3-05 provides that by 2010, emissions shall be reduced to 2000 levels; by 2020, emissions shall be reduced to 1990 levels; and by 2050, emissions shall be reduced to 80 percent below 1990 levels (CalEPA 2006). In response to EO S-03-05, CalEPA created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team (CAT) Report (CalEPA 2006). The 2006 CAT Report identified a recommended list of strategies that the state could pursue to reduce GHG emissions. These are strategies that could be implemented by various state agencies to ensure that the emission reduction targets in EO S-03-05 are met and can be met with existing authority of the state agencies. The strategies include the reduction of passenger and light duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology/infrastructure, increased use of alternative fuels, increased recycling, and landfill methane capture, etc. In April 2015 the governor issued EO B-30-15, calling for a new target of 40 percent below 1990 levels by 2030 (see also below).

Assembly Bill 32

California's major initiative for reducing GHG emissions is outlined in AB 32, the "California Global Warming Solutions Act of 2006," signed into law in 2006. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15 percent reduction below 2005 emission levels; the same requirement as under S-03-05), and requires CARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions.

After completing a comprehensive review and update process, CARB approved a 1990 statewide GHG level and 2020 limit of 427 $MMTCO_2e$. The Scoping Plan was approved by CARB on December 11, 2008, and included measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted over the last five years. Implementation activities are ongoing and CARB is currently the process of updating the Scoping Plan.

In May 2014, CARB approved the first update to the AB 32 Scoping Plan. The 2013 Scoping Plan update defines CARB's climate change priorities for the next five years and sets the groundwork to reach post-2020 goals set forth in EO S-03-05. The update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluates how to align the State's longer-term GHG reduction strategies with other State policy priorities, such as for water, waste, natural resources, clean energy and transportation, and land use (CARB 2014).

Senate Bill 32

Senate Bill 32 (SB 32) became effective on January 1, 2017 and requires CARB to develop technologically feasible and cost effective regulations to achieve the targeted 40 percent GHG emission reduction by 2030 set in EO B-30-15. On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. To meet reduction targets, the 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, as well as implementation of recently adopted policies such as SB 350 and SB 1383 (see below). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan Update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally-appropriate quantitative thresholds consistent with a statewide per capita goal of six metric tons (MT) CO_2e by 2030 and two MT CO_2e by 2050 (CARB 2017c). As stated in the 2017 Scoping Plan, these goals are appropriate for plan-level analyses (city, county, subregional, or regional level), but not for specific individual projects because they include all emissions sectors in the State.

Senate Bill X1 2 and Senate Bill 350

In April 2011, the governor signed SB 2X requiring California to generate 33 percent of its electricity from renewable energy by 2020. SB 350, the Clean Energy and Pollution Reduction Act of 2015, builds on the target set for 2020 and was approved in October 2015. SB 350 has two objectives: to increase the procurement of electricity from renewable sources from 33 percent to 50 percent by 2030 and to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.

Senate Bill 1383

Adopted in September 2016, SB 1383 requires CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. The bill requires the strategy to achieve the following reduction targets by 2030:

1. Methane – 40% below 2013 levels
2. Hydrofluorocarbons – 40% below 2013 levels
3. Anthropogenic black carbon – 50% below 2013 levels

The bill also requires the California Department of Resources Recycling and Recovery (CalRecycle), in consultation with the State board, to adopt regulations that achieve specified targets for reducing organic waste in landfills.

Senate Bill 97

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in California Environmental Quality Act (CEQA) documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts.

CARB Resolution 07-54

CARB Resolution 07-54 establishes 25,000 MT of GHG emissions as the threshold for identifying the largest stationary emission sources in California for purposes of requiring the annual reporting of emissions. This threshold is just over 0.005 percent of California's total inventory of GHG emissions for 2004.

Senate Bill 375

Senate Bill 375, signed in August 2008, enhances the state's ability to reach AB 32 goals by directing CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles for 2020 and 2035. In addition, SB 375 directs each of the state's 18 major Metropolitan Planning Organizations (MPO) to prepare a "sustainable communities strategy" (SCS) that contains a growth strategy to meet these emission targets for inclusion in the Regional Transportation Plan (RTP). On September 23, 2010, CARB adopted final regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. SCAG was assigned the target of eight percent reduction in GHGs from transportation sources by 2020 and a 13 percent reduction in GHGs from transportation sources by 2035. In the SCAG region, SB 375 also provides the option for the coordinated development of subregional plans by the subregional councils of governments and the county transportation commissions to meet SB 375 requirements.

Executive Order B-30-15

On April 29, 2015, the governor issued an executive order to establish a statewide mid-term GHG reduction target of 40 percent below 1990 levels by 2030. According to CARB, reducing GHG emissions by 40 percent below 1990 levels in 2030 ensures that California will continue its efforts to reduce carbon pollution and help to achieve federal health-based air quality standards. Setting clear targets beyond 2020 also provides market certainty to foster investment and growth in a wide array of industries throughout the State, including clean technology and clean energy. CARB is currently working to update the Scoping Plan to provide a framework for achieving the 2030 target. The updated Scoping Plan is expected to be completed and adopted by CARB in 2016 (CARB 2015b).

For more information on the Senate and Assembly Bills, Executive Orders, and reports discussed above, and to view reports and research referenced above, please refer to the following websites: www.climatechange.ca.gov and www.arb.ca.gov/cc/cc.htm.

California Environmental Quality Act

Pursuant to the requirements of SB 97, the Resources Agency has adopted amendments to the *State CEQA Guidelines* for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted *CEQA Guidelines* provide general regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or

qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts. To date, a variety of air districts have adopted quantitative significance thresholds for GHGs.

d. Local

While the City of Lancaster has not yet an adopted Climate Action Plan, the City has posted a Draft Climate Action Plan (CAP) on its website for public access. Although AVC is not subject to the City's Draft CAP, it presents measures the City is pursuing to contribute to regional and statewide achievement of GHG reduction goals, and it presents a guide of how AVC may conform to or complement these pursuits. According to the Draft CAP, the City's primary strategy in reducing GHG emissions is greater participation in the Lancaster Choice Energy (LCE). LCE is Lancaster's locally-operated, locally-controlled electrical power provider. LCE was designed from community choice aggregation of electrical providers to offer residents and businesses within the City a viable alternative to traditional investor-owned utilities. LCE offers two generation mix options: Clear Choice, which provides electricity with a 38 percent renewable generation mix, and Smart Choice, which provides a 100 percent renewable generation mix (City of Lancaster 2016b).

The City's Draft CAP provides four different future scenarios, which reflect future GHG reduction goals expressed below:

- 15 percent reduction below 2005 emissions levels by 2020 (Target: 752,430 $MTCO_2e$)
- 40 percent reduction below 1990 emissions levels by 2030 (Target: 451,460 $MTCO_2e$)
- Interpolated target between 2030 and 2050 (Target: 300,980 $MTCO_2e$)
- 80 percent reduction below 2005 emissions levels by 2050 (Target: 150,490 $MTCO_2e$)

The four different scenarios projected in the Draft CAP assume that LCE has a different amount of alternative energy in their portfolio by 2050. These scenarios result in varying amounts of GHG reductions. The scenarios include: 60 percent, 80 percent, and 100 percent renewable energy by 2050, and implementation of the Renewable Energy Purchase Plan which calls for achieving 100 percent renewable energy prior to 2050 and uses a cleaner renewable energy mix. The scenario with the largest GHG emission reductions would still fall short of the City's 2050 target by approximately 400,000 $MTCO_2e$. Therefore, the Draft CAP identifies potential GHG emission reduction strategies to further reduce GHG emissions in excess of expressed reduction targets. The strategies that are most relevant for the 2016 FMP are listed below (City of Lancaster 2016c):

- **Measure 4.1.3a: Bike Sharing**
  - Install bike sharing infrastructure throughout the City to provide an alternative method of transportation.
- **Measure 4.1.3b: Car Sharing**
  - Implement a car sharing program to provide an alternative method of public transit.
- **Measure 4.4.1a: Recycled Water Line Expansion**
  - Expand the recycled water line to increase the use of recycled water at City parks, schools, and major commerce centers.
- **Measure 4.7.3a: Xeriscaping**
  - Develop a program to provide assistance to members of the public with respect to xeriscaping their properties.

4.5.3 Impact Analysis

a. Significance Thresholds and Methodology

Significance Thresholds

Based on Appendix G of the State CEQA Guidelines, impacts related to GHG emissions from the proposed project would be significant if the project would:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The vast majority of individual projects do not generate sufficient GHG emissions to create a project-specific impact by directly influencing climate change. However, physical changes caused by a project can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project's contribution towards an impact is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15064[h][1]).

For future projects, the significance of GHG emissions may be evaluated based on locally adopted quantitative thresholds, or consistency with a regional GHG reduction plan (such as a Climate Action Plan). The Antelope Valley Air Quality Management District (AVAQMD) has adopted GHG emissions significance thresholds for daily and annual output. According to the AVAQMD, potential development associated with the 2016 FMP would have a significant impact related to GHG emissions if it would result in more than 100,000 $MTCO_2e$ per year or 548,000 pounds per day (AVAQMD 2016). In addition, in order to determine whether or not the 2016 FMP's GHG emissions are "cumulatively considerable," this analysis considers the 2016 FMP's consistency with applicable GHG emission reductions strategies contained in SCAG's RTP/SCS. Although the 2016 FMP is not subject to the City's Draft CAP, this analysis also considers the 2016 FMP's consistency with GHG reduction strategies contained in the Draft CAP.

Methodology

Calculations of CO_2, CH_4, and N_2O emissions are provided to identify the magnitude of potential project effects. The analysis focuses on CO_2, CH_4, and N_2O because these make up 98.9 percent of all GHG emissions by volume (IPCC 2007) and are the GHG emissions that the project would emit in the largest quantities. Fluorinated gases, such as HFCs, PFCs, and SF_6, were also considered for the analysis. However, because the project is a master plan for a predominantly educational development, the quantity of fluorinated gases would not be significant since fluorinated gases are primarily associated with industrial processes. Emissions of all GHGs are converted into their equivalent GWP in terms of CO_2 (CO_2e). Minimal amounts of other GHGs (such as chlorofluorocarbons [CFCs]) would be emitted; however, these other GHG emissions would not substantially add to the total calculated CO_2e amounts. Calculations are based on the methodologies discussed in the California Air Pollution Control Officers Association (CAPCOA) *CEQA and Climate Change* white paper (CAPCOA 2008) and include the use of the California Climate Action Registry (CCAR) General Reporting Protocol (CCAR 2009).

GHG emissions associated with the proposed project were calculated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 (see Appendix C for calculations).

Construction Emissions

Although construction activity is addressed in this analysis, CAPCOA does not discuss whether any of the suggested threshold approaches adequately address impacts from temporary construction activity. As stated in the CEQA and Climate Change white paper, "more study is needed to make this assessment or to develop separate thresholds for construction activity" (CAPCOA 2008). Nevertheless, air districts such as the South Coast Air Quality Management District (SCAQMD) have recommended amortizing construction-related emissions over a 30-year period (SCAQMD 2008).

Construction would generate temporary GHG emissions primarily due to the operation of construction equipment onsite as well as from vehicles transporting construction workers to and from the project site and heavy trucks to export earth materials offsite. Site preparation and grading typically generate the greatest amount of emissions due to the use of grading equipment and soil hauling. CalEEMod provides an estimate of emissions associated with the construction period, based on parameters such as the duration of construction activity, area of disturbance, and anticipated equipment-use during construction.

Construction emissions quantified in this analysis represent a conservative "worst case" scenario of all projects under the 2016 FMP occurring concurrently over a two-year period. However, projects would not occur concurrently, and would instead be staggered over the 12-year life of the 2016 FMP. Therefore, construction-related emissions calculated in CalEEMod represent a conservative estimate.

Operational Emissions

CalEEMod provides operational emissions of CO_2, N_2O, and CH_4. Emissions from energy use include electricity and natural gas use. The emissions factors for natural gas combustion are based on USEPA's AP-42, (*Compilation of Air Pollutant Emissions Factors*) and CCAR. Electricity emissions are calculated by multiplying the energy use times the carbon intensity of the utility district per kilowatt hour. The default electricity consumption values in CalEEMod include the CEC-sponsored California Commercial End Use Survey (CEUS) and Residential Appliance Saturation Survey (RASS) studies.

Emissions associated with area sources, including consumer products, landscape maintenance, and architectural coating were calculated in CalEEMod and utilize standard emission rates from CARB, USEPA, and emission factor values provided by the local air district.

Emissions from waste generation were also calculated in CalEEMod and are based on the IPCC's methods for quantifying GHG emissions from solid waste using the degradable organic content of waste. Waste disposal rates by land use and overall composition of municipal solid waste in California was primarily based on data provided by CalRecycle.

Emissions from water and wastewater usage calculated in CalEEMod were based on the default electricity intensity from the CEC's 2006 Refining Estimates of Water-Related Energy Use in California using the average values for southern California.

For mobile sources, CO_2 and CH_4 emissions were quantified in CalEEMod. Because CalEEMod does not calculate N_2O emissions from mobile sources, N_2O emissions were quantified using the California Climate Action Registry General Reporting Protocol (CCAR 2009) direct emissions factors for mobile combustion (see Appendix C for calculations). The estimate of total daily trips associated

with the proposed project was based on trip generation rates from the project Transportation Impact Study (TIS; Fehr & Peers 2018, Appendix B) and was calculated and extrapolated to derive total annual mileage in CalEEMod. Emission rates for N_2O emissions were based on the vehicle mix output generated by CalEEMod and the emission factors found in the California Climate Action Registry General Reporting Protocol.

A limitation of the quantitative analysis of emissions from mobile combustion is that emission models, such as CalEEMod, evaluate aggregate emissions, meaning that all vehicle trips and related emissions assigned to a project are assumed to be new trips and emissions generated by the project itself. Such models do not demonstrate, with respect to a regional air quality impact, what proportion of these emissions are actually "new" emissions, specifically attributable to the project in question. For most projects, the main contributor to regional air quality emissions is from motor vehicles. However, the quantity of vehicle trips appropriately characterized as "new" is usually uncertain as traffic associated with a project may be relocated trips from other locales. Because the trips associated with the 2016 FMP in this analysis are associated with an increase in enrollment and staffing at AVC, all trips are assumed to result in new emissions and not emissions associated with relocated trips.

b. Project Impacts and Mitigation Measures

Threshold 1:	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment

Impact GHG-1 Construction and operation of development envisioned under the 2016 FMP would not result in GHG emissions exceeding AVAQMD thresholds. Impacts would be less than significant.

As stated above, GHG emissions associated with implementation of the 2016 FMP were calculated using CalEEMod based on the expected increase of 2,962 FTES (from 12,946 FTES in 2018 to 15,908 FTES in 2030), demolition of approximately 111,000 square feet of existing buildings, and construction of approximately 254,000 square feet of new buildings, including 134,000 square feet of lecture and lab spaces, 68,000 square feet of general office space, 51,000 square feet of library space, and a 3,000-square foot pool. The following summarizes the 2016 FMP's overall GHG emissions, which include construction emissions (including demolition emissions) and operational emissions (see Appendix C for full CalEEMod worksheets).

Construction Emissions

As discussed under Significance Thresholds and Methodology, CalEEMod calculations represent a "worst case" scenario that assumes all construction activity would occur concurrently over a two-year period. However, planned construction and demolition activities would actually be spread out over the 12-year lifespan of the 2016 FMP. Therefore, the CalEEMod model results present a conservative estimate for construction-related emissions. Construction activity occurring under the 2016 FMP would generate an estimated 639 $MTCO_2e$ (as shown in Table 4.5-1). Amortized over a 30-year period as per SCAQMD recommendations, construction facilitated by the 2016 FMP would generate an estimated 21.3 $MTCO_2e$ per year.

Table 4.5-1 Estimated Annual Construction Emissions of Greenhouse Gases

Emission Source	Annual Emissions ($MTCO_2e$)
Construction	639.0
Amortized over 30 years	21.3
See Appendix C for calculations and for GHG emission factor assumptions	

Operational Emissions

Indirect and Stationary Direct Emissions

Operational indirect and stationary direct emissions resulting from energy use, mobile emissions, area emissions, and water use were calculated for the total number of new students, square footage, and residential units under the 2016 FMP. Existing GHG emissions from the buildings that would be demolished under the 2016 FMP were then calculated in CalEEMod and subtracted from the emissions associated with proposed new development. Within CalEEMod, a college land use was assumed for the existing structures in order to calculate emissions based on total removed square footage. Mobile emissions were calculated based on new vehicle trips generated by implementation of the 2016 FMP, which were taken from the TIS for the 2016 FMP prepared by Fehr & Peers (2018), and included in Appendix B. The TIS based its trip generation estimates on the projected FTES increase. See Appendix C for CalEEMod Calculations.

Area Source Emissions

CalEEMod was used to calculate direct area source GHG emissions generated on the campus under full implementation of the 2016 FMP (See Appendix C for calculations). This includes consumer product use, architectural coatings, and landscape maintenance equipment. As shown in Table 4.5-2, total net emissions from the 2016 FMP would be less than 0.1 $MTCO_2e$ per year.

Table 4.5-2 Estimated Annual Area-Related Greenhouse Gas Emissions

Emission Source	Annual Emissions ($MTCO_2e$)
Architectural Coating	0.0
Consumer Products	0.0
Landscaping	<0.1
Total	<0.1
Emissions Reduction from Existing Buildings to be Demolished	<-0.1
Net Emissions	**<0.1**
See Appendix C for calculations and for GHG emission factor assumptions	

Energy Use Emissions

Operation of the new buildings proposed under the 2016 FMP would consume both electricity and natural gas (see Appendix C for calculations). The generation of electricity through combustion of fossil fuels typically yields CO_2, and to a smaller extent, N_2O and CH_4. As discussed above, annual electricity and natural gas emissions can be calculated using default values from the CEC-sponsored CEUS and RASS studies which are built into CalEEMod.

As shown in Table 4.5-3, electricity consumption associated with the 2016 FMP would generate 571.1 $MTCO_2e$ per year. Natural gas use would generate 186.2 $MTCO_2e$ per year. Thus, overall energy use within the 2016 FMP, at full implementation, would generate 757.3 $MTCO_2e$ per year. However, the existing buildings on campus that would be demolished under the 2016 FMP would account for 321.3 $MTCO_2e$ per year. Therefore, net emissions from energy consumption would be 436 $MTCO_2e$ per year.

Table 4.5-3 Estimated Annual Energy-Related Greenhouse Gas Emissions

Emissions Source	Annual Emissions ($MTCO_2e$)
Electricity	571.1
Natural Gas	186.2
Total	**757.3**
Emissions Reduction from Existing Buildings to be Demolished	-321.3
Net Emissions	**436.0**
See Appendix C for calculations and for GHG emission factor assumptions	

Solid Waste Emissions

It is anticipated that development facilitated by the 2016 FMP would generate approximately 280 tons of solid waste per year according to the CalEEMod output. As shown in Table 4.5-4, based on this estimate, solid waste generated through implementation of the 2016 FMP would generate 143 $MTCO_2e$ per year. However, incorporating the emissions from existing buildings to be demolished, total net emissions from solid waste would be 76.2 $MTCO_2e$ per year.

Table 4.5-4 Estimated Annual Solid Waste Greenhouse Gas Emissions

Emission Source	Annual Emissions ($MTCO_2e$)
Solid Waste	143.2
Emissions Reduction from Existing Buildings to be Demolished	-67.0
Net Emissions	**76.2**
See Appendix C for calculations and for GHG emission factor assumptions	

Water Use Emissions

Operation of the development facilitated under the 2016 FMP is estimated to use approximately 40 million gallons of water per year based on the land use types and number of students. Based on the amount of electricity used to supply this amount of water, this operational aspect of the 2016 FMP would generate 167 $MTCO_2e$ per year. Existing buildings to be demolished currently account for 60.1 $MTCO_2e$ per year of GHG emissions. Therefore, as shown in Table 4.5-5, net emissions would be 106.5 $MTCO_2e$ per year.

Table 4.5-5 Estimated Annual Water Use Greenhouse Gas Emissions

Emission Source	Annual Emissions ($MTCO_2e$)
Water Use	166.6
Emissions Reduction from Existing Buildings to be Demolished	-60.1
Net Emissions	**106.5**
See Appendix C for calculations and for GHG emission factor assumptions	

Transportation Emissions

Mobile source GHG emissions were estimated using the TIS for the 2016 FMP prepared by Fehr & Peers (2018), and included in Appendix B, and by the total vehicle miles traveled (VMT) estimated in CalEEMod. Based on the CalEEMod model estimate, the potential increase of up to 2,962 additional full-time equivalent students, and the operation of approximately 145,000 square feet of net new buildings would generate approximately 10.6 million VMT annually. Trip estimates account for transit/walk reductions, pass by reductions, and internal capture reduction as defined in the TIS (Fehr & Peers 2018).

Table 4.5-6 shows estimated mobile emissions of GHGs for the 2016 FMP based on its estimated annual VMT. As noted above, CalEEMod does not calculate N_2O emissions related to mobile sources. As such, N_2O emissions were calculated based on the 2016 FMP's VMT using calculation methods provided by the California Climate Action Registry General Reporting Protocol (2009). As shown in Table 4.5-6, full implementation of the 2016 FMP would result in 4,862 $MTCO_2e$ associated with mobile emissions.

Table 4.5-6 Estimated Mobile Source Greenhouse Gas Emissions

Emission Source	Annual Emissions CO_2e (metric tons)
Mobile Emissions (CO_2 and CH_4)	4,638.3
Mobile Emissions (N_2O)	223.7
Total Mobile Emissions	**4,862.0**
See Appendix C for calculations and for GHG emission factor assumptions	

Combined Annual GHG Emissions

Table 4.5-7 combines the construction, operational, and mobile GHG emissions projected to occur as a result of the 2016 FMP. As noted above, construction emissions (approximately 640 $MTCO_2e$) are amortized over 30 years. The 2016 FMP's combined annual emissions would total just over 5,500 $MTCO_2e$. These emissions projections indicate that the majority of the 2016 FMP's added GHG emissions (88 percent) are associated with mobile source emissions.

Table 4.5-7 Combined Annual Emissions of Greenhouse Gases

Emission Source	Annual Emissions ($MTCO_2e$)
Construction	21.3
Operational	
Area	<0.1
Energy	436.0
Solid Waste	76.2
Water Use	106.5
Mobile	4,862.0
Net Emissions	**5,502.1**
Threshold	100,000
Threshold Exceeded	**No**

See Appendix C for calculations and for GHG emission factor assumptions

As shown in Table 4.5-7, implementation of the 2016 FMP would result in total emissions of approximately 5,500 $MTCO_2e$ per year. These emissions would not exceed the applicable AVAQMD threshold of 100,000 $MTCO_2e$ per year. Therefore, GHG emissions from buildout of the 2016 FMP would result in a less than significant impact.

Mitigation Measures

No mitigation required.

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

Impact GHG-2 Implementation of the 2016 FMP would not conflict with applicable SCAG RTP/SCS GHG reduction strategies, and would be generally consistent with example mitigation measures contained in the 2017 Scoping Plan. Implementation of the 2016 FMP would also not conflict with potential GHG emission reduction strategies from the City of Lancaster's Draft CAP. Impacts would be less than significant.

Table 4.5-8 and Table 4.5-9 offer side-by-side comparisons demonstrating that the 2016 FMP would be consistent with the GHG reduction strategies set forth by the SCAG's RTP/SCS and would generally be consistent with applicable example mitigation measures contained in Appendix B of the 2017 Scoping Plan. As shown in Table 4.5-8, the 2016 FMP incorporates measures similar to those of the 2017 Scoping Plan that would achieve greater energy efficiency, water conservation and efficiency, and reduction of solid waste.

Table 4.5-8 2016 FMP Consistency with 2017 Scoping Plan – Appendix B Example Mitigation Measures

Mitigation Measure	Consistent with the 2016 FMP (Y/N/na[1]
Construction	
Enforce idling time restrictions for construction vehicles	Yes – While this measure is not included in the 2016 FMP it is State law (CCR Title 13, Section 2449), and would therefore be enforceable during construction activities.
Require construction vehicles to operate with the highest tier engines commercially available	No – This measure is not included in the 2016 FMP.
Divert and recycle construction and demolition waste, and use locally-sourced building materials with a high recycled material content to the greatest extent feasible	No – The climate of Antelope Valley, with its large swings in temperature from day to night and periodic heavy winds, creates a need for durable building materials, making it difficult to reuse construction and demolition waste. However, implementation of the 2016 FMP would not prevent the reuse or recycling of construction and demolition waste. In addition, although AVC does not plan to pursue LEED certification of their buildings, they plan instead to spend available resources on product sustainable strategies that maximize the benefits to the campus and environment.
Minimize tree removal, and mitigate indirect GHG emissions increases that occur due to vegetation removal, loss of sequestration, and soil disturbance	Yes – Implementation of the 2016 FMP would involve infill development on an already-developed site. While implementation of the 2016 FMP would lead to the removal of some trees, it would also minimize tree removal where possible and introduce new trees and other vegetation to the project site.
Utilize existing grid power for electric energy rather than operating temporary gasoline/diesel powered generators	Yes – Electrical service to the project site would be provided by Southern California Edison (SCE), so projects carried out under the 2016 FMP would connect to the existing power grid.
Increase use of electric and renewable fuel powered construction equipment and require renewable diesel fuel where commercially available	Yes – The 2016 FMP includes the relocation of photovoltaic systems and their continued operation, which would maintain the availability of renewable energy to the project site during construction.
Require diesel equipment fleets to be lower emitting than any current emission standard	No – This measure is not included in the 2016 FMP.
Operation	
Comply with lead agency's standards for mitigating transportation impacts under SB 743	Yes – The 2016 FMP would contribute to the goals of transit-oriented development as identified under SB 743 by improving internal pedestrian connectivity to nearby transit services.
Require on-site EV charging capabilities for parking spaces serving the project to meet jurisdiction-wide EV proliferation goals	No – New EV charging stations are not envisioned under the 2016 FMP.
Allow for new construction to install fewer on-site parking spaces than required by local municipal building code, if appropriate	Yes – Implementation of the 2016 FMP will not impact the existing parking supply, and would not be required to comply with any parking requirements in the local municipal building code.
Dedicate on-site parking for shared vehicles	No –Dedicated on-site parking for shared vehicles is not envisioned under the 2016 FMP.

Mitigation Measure	Consistent with the 2016 FMP (Y/N/na[1]
Provide adequate, safe, convenient, and secure on-site bicycle parking and storage in multi-family residential projects and in non-residential projects	Yes – The 2016 FMP includes several sustainability themes, one of which is Bicycle Network & Storage, and acknowledges the need for additional bicycle parking.
Provide on- and off-site safety improvements for bike, pedestrian, and transit connections, and/or implement relevant improvements identified in an applicable bicycle and/or pedestrian master plan	Yes – Areas adjacent to the campus would be serviced by existing transit facilities, and the 2016 FMP includes pedestrian safety improvements and connectivity such as sidewalks and paths throughout the campus.
Require on-site renewable energy generation	Yes – The use of solar photovoltaic panels would continue under the 2016 FMP.
Prohibit wood-burning fireplaces in new development, and require replacement of wood-burning fireplaces for renovations over a certain size developments	Yes – Implementation of the 2016 FMP would not include the development of new lodging facilities that could contain wood-burning fireplaces.
Require cool roofs and "cool parking" that promotes cool surface treatment for new parking facilities as well as existing surface lots undergoing resurfacing	Yes – Implementation of the 2016 FMP would retain the existing tree canopy on campus that aids in reducing associated energy consumption for buildings, as well as the continued use of solar photovoltaic panels installed over, and shading, parking spaces.
Require solar-ready roofs	Yes – The use of solar photovoltaic panels on top of, and shading, parking spaces would continue under the 2016 FMP.
Require organic collection in new developments	No – This measure is not included in the 2016 FMP.
Require low-water landscaping in new developments (see CALGreen Divisions 4.3 and 5.3 and the Model Water Efficient Landscape Ordinance [MWELO], which is referenced in CALGreen). Require water efficient landscape maintenance to conserve water and reduce landscape waste.	Yes – The 2016 FMP would use a water-saving irrigation system, minimize turf areas, and use drought-tolerate plants.
Achieve Zero Net Energy performance building standards prior to dates required by the Energy Code	Yes – As stated in the 2016 FMP, although AVC does not have a specific LEED requirement or plan to pursue certification of its buildings, the 2016 FMP places emphasis on using available resources on productive sustainable strategies that maximize the benefits to the campus and environment.
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	No – AVC does not have a specific LEED requirement or plan to pursue any other third-party green building certification of its buildings.
Require the design of bike lanes to connect to the regional bicycle network	Yes – The 2016 FMP includes bike paths that are accessible by the regional bicycle network.
Expand urban forestry and green infrastructure in new land development	Yes – The 2016 FMP would not include the development of undeveloped land. While implementation of the 2016 FMP would lead to the removal of some trees, it would also minimize tree removal where possible and introduce new trees and other vegetation to the project site.
Require preferential parking spaces for park and ride to incentivize carpooling, vanpooling, commuter bus, electric vehicles, and rail service use	No – The 2016 FMP would not Require preferential parking spaces for park and ride.
Require a transportation management plan for specific plans which establishes a numeric target for non-single occupancy vehicle (SOV) travel and overall VMT	n/a – The 2016 FMP is not a specific plan.

Mitigation Measure	Consistent with the 2016 FMP (Y/N/na[1]
Develop a rideshare program targeting commuters to major employment centers	No – The 2016 FMP would not include this measure.
Require the design of bus stops/shelters/express lanes in new developments to promote the usage of mass-transit	Yes – Implementation of the 2016 FMP would improve one northbound and one southbound bus stop on 30th Street West between West Avenue J-9 and West Avenue J-12.
Require gas outlets in residential backyards for use with outdoor cooking appliances such as gas barbeques if natural gas service is available	n/a – The 2016 FMP does not include any residential uses.
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	n/a – The 2016 FMP does not include any residential uses.
Require the design of the electric outlets and/or wiring in new residential unit garages to promote electric vehicle usage	n/a – The 2016 FMP does not include any residential uses.
Require electric vehicle charging station (Conductive/inductive) and signage for non-residential developments	No – This measure is not required under the 2016 FMP.
Provide electric outlets to promote the use of electric landscape maintenance equipment to the extent feasible on parks and public/quasi-public lands	No – This measure is not included in the 2016 FMP.
Require each residential unit to be "solar ready," including installing the appropriate hardware and proper structural engineering	n/a – The 2016 FMP does not include any residential uses.
Require the installation of energy conserving appliances such as on-demand tank-less water heaters and whole-house fans	Yes – As a sustainability design features, the 2016 FMP would include use of properly insulated buildings, building orientation, replacement of old heating systems with energy efficient boiler systems, and high-efficiency lighting.
Require that each residential and commercial building be equipped with energy efficient AC units and heating systems with programmable thermostats/timers	Yes - The 2016 FMP would include proper building insulation and would involve the replacement of energy efficient boiler systems.
Require large-scale residential developments and commercial buildings to report energy use, and set specific targets for per-capita energy use	No – This measure is not included in the 2016 FMP.
Require each residential and commercial building to utilize low flow water fixtures such as low flow toilets and faucets (see CALGreen Divisions 4.3 and 5.3 as well as Appendices A4.3 and A5.3)	Yes – The 2016 FMP would include use of low-flow water fixtures.
Require the use of energy-efficient lighting for all street, parking, and area lighting	Yes – The 2016 FMP would include installation and use of high-efficiency lighting, such as LED, fluorescent lighting, etc., where possible.
Require the landscaping design for parking lots to utilize tree cover and compost/mulch	No – This measure is not included in the 2016 FMP.
Incorporate water retention in the design of parking lots and landscaping, including using compost/mulch	No – This measure is not included in the 2016 FMP.

Mitigation Measure	Consistent with the 2016 FMP (Y/N/na[1]
Require the development project to propose an off-site mitigation project which should generate carbon credits equivalent to the anticipated GHG emission reductions. This would be implemented via an approved protocol for carbon credits from California Air Pollution Control Officers Association (CAPCOA), the California Air Resources Board, or other similar entities determined acceptable by the local air district	No – This measure is not included in the 2016 FMP. However, as discussed in Impact GHG-1 of this EIR, emissions generated during construction and operation of the 2016 FMP would not exceed emission thresholds identified by the AVAQMD.
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	No – This measure is not included in the 2016 FMP. However, as discussed in Impact GHG-1 of this EIR, emissions generated during construction and operation of the 2016 FMP would not exceed emission thresholds identified by the AVAQMD.
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	No – This measure is not included in the 2016 FMP. However, as discussed in Impact GHG-1 of this EIR, emissions generated during construction and operation of the 2016 FMP would not exceed emission thresholds identified by the AVAQMD.

[1] na = not applicable

As discussed above, the 2016 FMP would be generally consistent with example mitigation measures contained in the 2017 Scoping Plan through several sustainability goals. These 2016 FMP goals include: setting high bars for building performance with consistent monitoring and routine reporting; promoting a culture of reduce, reuse, and recycle; nurturing environmental stewardship and literacy across the campus and educating and preparing students for the green workforce; becoming a leader in energy efficiency and increasing the levels of on and off-site renewable energy; managing building and landscape water use to conserve water; and promoting healthy living culture, and providing a safe and healthy environment.

Table 4.5-9 analyzes the 2016 FMP's consistency with SCAG's RTP/SCS applicable GHG reduction strategies. As shown therein, the 2016 FMP would be consistent with the land use development and transportation oriented GHG reduction strategies contained in SCAG's RTP/SCS.

Table 4.5-9 2016 SCAG RTP/SCS Consistency

Reduction Strategy	2016 FMP Consistency
Land Use Actions and Strategies	
Reflect the Changing Population and Demands The SCAG region, home to about 18.3 million people in 2012, currently features 5.9 million households and 7.4 million jobs. By 2040, the Plan projects that these figures will increase by 3.8 million people, with nearly 1.5 million more homes and 2.4 million more jobs. High Quality Transit Areas (HQTA) will account for three percent of regional total land, but will accommodate 46 percent and 55 percent of future household and employment growth respectively between 2012 and 2040. The 2016 RTP/SCS land use pattern contains sufficient residential capacity to accommodate the region's future growth, including the eight-year regional housing need. The land use pattern	**Consistent** The 2016 FMP would accommodate the projected increase in campus enrollment by almost 3,000 students through 2030. It is possible that nearby commercial land uses can provide temporary employment opportunities for the future students anticipated by the 2016 FMP. Additionally, the campus is immediately adjacent to several transit stops along 30th Street West, some of which provide connections to the Lancaster Metrolink station, providing means of both local and regional mobility.

Reduction Strategy	2016 FMP Consistency
accommodates about 530,000 additional households in the SCAG region by 2020 and 1.5 million more households by 2040. The land use pattern also encourages improvement in the jobs-housing balance by accommodating 1.1 million more jobs by 2020 and about 2.4 million more jobs by 2040.	
Focus New Growth Around Transit The 2016 RTP/SCS land use pattern reinforces the trend of focusing growth in the region's High Quality Transit Areas (HQTAs). Concentrating housing and transit in conjunction concentrates roadway repair investments, leverages transit and active transportation investments, reduces regional life cycle infrastructure costs, improves accessibility, avoids greenfield development, and has the potential to improve public health and housing affordability. HQTAs provide households with alternative modes of transport that can reduce VMT and GHG emissions.	**Consistent** Implementation of the 2016 FMP would not include development of previously undeveloped land. In addition, the 2016 FMP would not hinder the use of nearby public transit facilities. The AVC campus internal pedestrian and bicycle network also encourages modes of alternative transportation and public transit.
Plan for Growth Around Livable Corridors The Livable Corridors strategy seeks to revitalize commercial strips through integrated transportation and land use planning that results in increased economic activity and improved mobility options. Since 2006, SCAG has provided technical assistance for 19 planning efforts along arterial roadway corridors. These corridor planning studies focused on providing a better understanding of how corridors function along their entire length. Subsequent research has distinguished the retail density and the specific kinds of retail needed to make these neighborhood nodes destinations for walking and biking. From a land use perspective, Livable Corridors strategies include a special emphasis on fostering collaboration between neighboring jurisdictions to encourage better planning for various land uses, corridor branding, roadway improvements and focusing retail into attractive nodes along a corridor.	**Not Applicable** The 2016 FMP would not involve the development of mixed-use land uses along an existing transportation network. However, several public transit facilities are located immediately adjacent to the AVC campus along 30th Street West, which provide access to the surrounding communities and commercial centers.
Provide more options for short trips 38 percent of all trips in the SCAG region are less than three miles. The 2016 RTP/SCS provides two strategies to promote the use of active transport for short trips. Neighborhood Mobility Areas are meant to reduce short trips in a suburban setting, while "complete communities" support the creation of mixed-use districts in strategic growth areas and are applicable to an urban setting.	**Consistent** The AVC campus includes an internal pedestrian and bicycle network that encourages the use of alternative modes of transportation and is located immediately adjacent to several public transit stops along 30th Street West. Walking or biking would be viable modes of transportation to reach numerous destinations or public transit.
Protect Natural and Farm Lands Many natural and agricultural land areas near the edge of existing urbanized areas do not have plans for conservation and they are susceptible to the pressures of development. Many of these lands, such as riparian areas, have high per-acre habitat values and are host to some of the most diverse yet vulnerable species that play an important role in the overall ecosystem.	**Consistent** The 2016 FMP would not involve the development of any undeveloped lands that could result in the conversion of natural or farm lands to urban uses.

Reduction Strategy	2016 FMP Consistency
Transportation Strategies	
Manage Congestion Federal regulations for Metropolitan Transportation Planning and Programming require the development, establishment, and implementation of a congestion management plan (CMP) that is fully integrated into the regional planning process. The CMP is part of SCAG's integrated approach to improving and optimizing the transportation system, to provide for the safe and effective management of the regional transportation system through the use of monitoring and maintenance, demand reduction, land use, operational management strategies, and strategic capacity enhancements. The CMP requires that roadway projects that significantly increase the capacity for single-occupancy vehicles (SOV) be addressed through a CMP that provides appropriate analysis of reasonable, multimodal travel demand reduction and operational management strategies for the corridor. If alternative strategies are neither practical nor feasible, appropriate management strategies must be considered in conjunction with roadway capacity improvement projects that would increase SOV capacity.	**Consistent** Implementation of the 2016 FMP would not result in an increase in SOV capacity on nearby roadways. Moreover, as discussed in the TIS conducted by Fehr & Peers in July 2018, implementation of the 2016 FMP would not result in a significant impact to any CMP arterial or freeway monitoring station and the projected level of additional transit riders generated by the 2016 FMP would not result in a significant impact on public transit services in the vicinity. Furthermore, the level of service (LOS) analysis contained in the TIA determined that the project would not result in significant impacts at any of the 18 study intersections under the "Existing with Project" scenario or "Future with Project" scenario.
Transit Since 1991, the SCAG region has spent more than $50 billion dollars on public transportation. This includes high profile investments in rail transit and lower profile, vital investments in operations and maintenance. Looking toward 2040, the 2016 RTP/SCS maintains a significant investment in public transportation across all transit modes and also calls for new household and employment growth to be targeted in areas that are well served by public transportation to maximize the improvements called for in the Plan.	**Consistent** The AVC campus is immediately adjacent to several public transit stations located along 30th Street West. Furthermore, the internal pedestrian and bicycle network would encourage future students to utilize modes of active transportation or public transit infrastructure.
Active Transportation The 2016 RTP/SCS includes $12.9 billion for active transportation improvements, including $8.1 billion in capital projects and $4.8 billion as part of the operations and maintenance expenditures on regionally significant local streets and roads. The Active Transportation portion of the 2016 Plan updates the Active Transportation portion of the 2012 Plan, which has goals for improving safety, increasing active transportation usage and friendliness, and encouraging local active transportation plans. It proposes strategies to further develop the regional bikeway network, assumes that all local active transportation plans will be implemented, and dedicates resources to maintain and repair thousands of miles of dilapidated sidewalks. To accommodate the growth in walking, biking and other forms of active transportation regionally, the 2016 Active Transportation Plan also considers new	**Consistent** The AVC campus is immediately adjacent to several public transit stations located along 30th Street West. Coupled with the internal pedestrian and bicycle network, future students would be encouraged to utilize modes of active transportation or public transit infrastructure. Furthermore, the 2016 FMP acknowledges the need for additional bicycle parking facilities, which may be installed in the future.

Reduction Strategy	2016 FMP Consistency
strategies and approaches beyond those proposed in 2012.	
Zero-Emissions Vehicles While SCAG's policies are technology neutral with regard to supporting zero and/or near zero-emissions vehicles, this section will focus on zero-emissions vehicles. Since SCAG adopted the 2012 RTP/SCS, the Governor's Office released the Zero Emissions Vehicle (ZEV) Action Plan for 2013 and 2015. These plans identified state level funding to support the implementation of Plug-in Electric Vehicle (PEV) and Hydrogen Fuel Cell refueling networks. As part of the 2016 RTP/SCS, SCAG modeled PEV growth specific to Plug-in Hybrid Electric Vehicles (PHEV) in the SCAG region. These are electric vehicles that are powered by a gasoline engine when their battery is depleted. The 2016 RTP/SCS proposes a regional charging network that will increase the number of PHEV miles driven on electric power. In many instances, these chargers may double the electric range of PHEVs. A fully funded regional charging network program would result in a reduction of one percent per capita greenhouse gas emissions.	**Consistent** Development envisioned under the 2016 FMP would comply with all applicable requirements of the California Green Building Code standards pertaining to supporting zero-emissions vehicle use.

Source: SCAG 2016b

As discussed under Section 4.5.2.d, *Local [Regulatory Setting],* the City of Lancaster currently has a Draft CAP which contains policies intended to reduce GHG emissions within the City of Lancaster. Although AVCCD is not subject to City regulations and policies, and the Draft CAP has not been adopted by the City, the 2016 FMP would be consistent with the applicable GHG reduction goals and policies expressed in the Lancaster Draft CAP. Table 4.5-10 provides a side-by-side analysis of the 2016 FMP and applicable GHG reduction goals and policies contained in Lancaster's Draft CAP.

Table 4.5-10 2016 FMP Consistency with Lancaster's Draft CAP

Strategy	FMP Consistency
Measure 4.1.3a: Bike Sharing Install bike sharing infrastructure throughout the City to provide an alternative method of transportation.	**Consistent** Under implementation of the 2016 FMP, the campus would be designed to have exterior vehicle circulation for access and parking while the interior of the campus would be primarily designated for pedestrian and bicycle access. This would improve pedestrian and bicycle access throughout campus, which would complement the City's efforts to encourage bike sharing as an alternative method of transportation.
Measure 4.1.3b: Car Sharing Implement a car sharing program to provide an alternative method of public transit.	**Consistent** Implementation of the 2016 FMP would not result in a reduction in existing supply of carpool parking spots. Additionally, a bus stop is currently provided on the east side of the project site on 30th Street West. Although the 2016 FMP does not actively encourage a car sharing program, the 2016 FMP would not encourage the use of single occupancy vehicles or inhibit the City from implementing its own car sharing program.
Measure 4.4.1a: Recycled Water Line Expansion Expand the recycled water line to increase the use of recycled water at City parks, schools, and major commerce centers.	**Consistent** The 2016 FMP would further promote the utilization of water conservation planning strategies such as installing water efficient plumbing fixtures, efficient building system usage, and water efficient landscaping. Furthermore, the 2016 FMP contains sustainability themes and topics, one of which is using non-potable water.
Measure 4.7.3a: Xeriscaping Develop a program to provide assistance to members of the public with respect to xeriscaping their properties.	**Consistent** The 2016 FMP contains landscape guidelines that provide the preferred landscape typology planned under the 2016 FMP. This typology is made up of ornamental grasses, hardy shrubs, and grass-like succulents, and is thought of as a background landscape that uses minimal resources by having low water use and maintenance requirements. This typology is planned for the campus' edges, the building perimeters, and along pedestrian corridors.

As discussed above, the 2016 FMP would be consistent with relevant CAT strategies, 2008 Attorney General Greenhouse Gas Reduction Measures, and Lancaster Draft CAP measures. Moreover, as discussed in Section 4.5.2, Regulatory Setting, AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020. The AVAQMD significance thresholds are designed to achieve reductions consistent with AB 32 statewide GHG reduction goals. As described above, the proposed project would not exceed AVAPCD efficiency thresholds. Thus, the proposed project would not conflict AB 32 policies to reduce GHG emissions.

SB 32 further codified the State's GHG emission reduction target of 40 percent below 1990 levels by 2030. As stated in the 2013 Scoping Plan Update, which maps out how the State will achieve the AB 32 target, and the recently adopted 2017 Scoping Plan, which maps out how the State will achieve the SB 32 target, it is up to local agencies and governments to establish policies and thresholds to ensure land use development is consistent with statewide targets. Although the 2017 Scoping Plan also states that per capita community emissions of no more than six $MTCO_2e$ by 2030 and no more than two $MTCO_2e$ by 2050 would be consistent with statewide emission reduction targets, the 2017 Scoping Plan does not provide project-level thresholds for land use development. However, GHG emissions targets in SB 32 represent future extensions of AB 32 targets, and because the project

would not exceed AB 32 targets, it would also not conflict with SB 32 policies. Therefore, the GHG emissions of the project would not conflict with statewide policies adopted for the purpose of reducing GHG emissions, such as AB 32. Implementation of the 2016 FMP would also not conflict with applicable potential GHG emission reduction strategies from the City of Lancaster's Draft CAP. The project would not conflict with State or local GHG reduction regulations, and impacts would be less than significant.

Mitigation Measures

No mitigation required.

c. Cumulative Impacts

As discussed in Section 3, *Environmental Setting*, cumulative development in Lancaster and the region, including development facilitated by the 2016 FMP, would include dwelling units and non-residential development that would generate GHG emissions from vehicle trips and other sources. Analyses of GHG emissions are cumulative in nature, as they affect the accumulation of GHGs in the earth's atmosphere. Projects falling below the impact thresholds discussed above are therefore considered to have a less than significant impact, both individually and cumulatively. As indicated above in Impact GHG-1, GHG emissions associated with the 2016 FMP would be less than significant without mitigation, and the 2016 FMP's impacts are therefore also cumulatively less than significant.

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4.6 Hazards and Hazardous Materials

This section evaluates potential impacts related to hazards and hazardous materials resulting from implementation of the proposed 2016 FMP, including the potential presence of lead and asbestos in buildings proposed for demolition, soil and groundwater contamination, and effects on existing emergency management plans. Historical aerial photographs and topographic maps were reviewed for the project site.

4.6.1 Environmental Setting

a. Project Site Setting and Existing Hazards

On-site Development History

Initial development on the project site began in the 1960's, and since then, renovations and new construction have occurred. Based on historic, publicly available aerial imagery, in 2003 approximately half of the current-day campus was built. Uses in 2003 consisted of the athletic fields in the southwest quadrant of campus, and services buildings/classrooms in the southeast. Between 2006 and current day conditions, the northeast quadrant of the campus was built, consisting of additional classrooms, service buildings, and parking lots. Between 2003 and 2006, a residential neighborhood was constructed immediately to the northwest of the campus. The project site appears to have been completely developed by approximately 2011. Since then, the project site has resembled its present-day general configuration, with sports fields in the southwest part of campus, smaller buildings in the northeast part of campus, and larger buildings in the southeast part of campus. Parking lots generally line the northeast, east, and southern boundaries of the campus.

Oil and Gas Wells, Pipelines, and Facilities

Based on review of the National Pipeline Mapping System, it appears that there are no natural gas transmission lines or hazardous liquid pipelines (liquid fuel) near the project site [Pipeline and Hazardous Materials Safety Administration (PHMSA) 2018] . The nearest Gas Transmission or Hazardous Liquid Pipeline is a Southern California Gas Company (SoCal Gas) line located approximately three miles away, east of Interstate 14. Based on review of the Division of Oil, Gas, and Geothermal Resources (DOGGR) website, no oil & gas wells or facilities are located on the project site.

Asbestos Containing Materials

Asbestos was used as insulation in walls or ceilings or as a component in adhesives in older buildings (pre-1979). Asbestos can pose a health risk when very small particles become airborne. Historical aerial photographs show that many of the buildings present on-site were constructed prior to 1979. Therefore these structures may contain asbestos containing materials (ACM).

Lead-Based Paint

Lead is a highly toxic metal that was used for many years in products found in and around homes, including paint. Lead-based paint (LBP) was commonly used in residential construction prior to the enactment of federal regulations limiting its use in the late 1970s. Exposure to lead can cause a range of health effects, from behavioral problems and learning disabilities, to seizures and death.

The primary source of lead exposure in residential settings is deteriorating LBP. Lead dust can form when LBP is dry scraped, dry sanded, or heated. Dust also forms when painted surfaces bump or rub together. LBP that is in good condition is usually not a hazard. The 2016 FMP shows that many of the buildings present on-site were constructed prior to 1970; therefore, these structures may contain LBP.

Educational Facilities

Several schools are located near the project site. Students of the Academic Rise (SOAR) High School is located on the AVC campus, Bethel Christian School and Church is located directly across W. Avenue K and under 0.05 miles south, Westwind Elementary School is located approximately 0.20 miles to the northwest, Nancy Cory Elementary School is located 0.25 miles to the southwest, and Amargosa Middle School is located 0.30 miles to the northeast. Information regarding each of the educational facilities identified is shown below in Table 4.6-1.

Table 4.6-1 Educational Facilities in Project Vicinity

Facility Name	Facility Address	Distance from AVC (miles)
SOAR High School	3041 W. Avenue K, Lancaster, CA 93536	*On Campus
Bethel Christian School	3100 W Avenue K, Lancaster, CA 93536	<0.05
Westwind Elementary	44044 36th Street W., Lancaster, CA 93536	0.20
Nancy Cory Elementary	3540 W. Avenue K-4, Lancaster, CA 93536	0.25
Amargosa Middle School	44333 27th Street W., Lancaster, CA 93536	0.30

Source: National Center for Education Statistics 2018, 2016-2017 School Years; Google Earth

b. Records Research

Known On-site Hazardous Material Sites

The following databases were reviewed in May 2018 for records relating to any known hazardous materials contamination on the project site:

- **California State Water Resources Control Board (SWRCB) - Geotracker database.** GeoTracker is the SWRCB data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater. GeoTracker contains records for sites that require cleanup, such as Leaking Underground Storage Tank (LUST) Sites, Department of Defense Sites, and Cleanup Program Sites. GeoTracker also contains records for various unregulated projects as well as permitted facilities including: Irrigated Lands, Oil and Gas production, operating Permitted USTs, and Land Disposal Sites.
- **Department of Toxic Substances Control (DTSC) - Envirostor database.** EnviroStor is the DTSC's data management system for tracking cleanup, permitting, enforcement and investigation efforts at hazardous waste facilities and sites with known contamination or sites where there may be reasons to investigate further.
- **Department of Toxic Substances Control - The Cortese List.** The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies, and developers to comply with the CEQA requirement to provide information about the location of

hazardous materials release sites. Government Code section 65962.5 requires the California Environmental Protection Agency to develop at least annually an updated Cortese List. DTSC is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List.

The SWCRB's Geotracker Database, DTSC's Envirsotor Database, and the online Cortese List did not identify any release sites in the AVC campus area (SWRCB 2018, DTSC 2018a, DTSC 2018b).

Known Adjacent Hazardous Material Sites

The Cortese list did not identify any release sites in the City of Lancaster. The search of the SWRCB Geotracker database and DTSC Envirsotor did not result in any listed release sites on or within a half mile radius of the AVC campus.

c. Regulatory Setting

The management of hazardous materials and hazardous wastes is regulated at federal, state, and local levels, including through programs administered by the USEPA; agencies that are part of the California Environmental Protection Agency (CalEPA), such as the Department of Toxic Substances Control (DTSC); federal and state occupational safety agencies; and the Los Angeles County Certified Unified Program Agency (CUPA) Health Hazardous Materials Division (HHMD).

Definition of Hazardous Materials

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined in Title 22 of the CCR as follows:

> "A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed (CCR, Title 22, Section 66261.10)."

Chemical and physical properties cause a substance to be considered hazardous. Such properties include toxicity, ignitability, corrosiveness, and reactivity. CCR, Title 22, Sections 66261.20 through 66261.24 defines the aforementioned properties. The release of hazardous materials into the environment can contaminate soils, surface water, and groundwater supplies.

Federal Regulations

The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA)

These acts established a program administered by the U.S. EPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle to grave" system of regulating hazardous wastes. Among other things, the use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by HSWA.

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (enacted 1980), amended by the Superfund Amendments and Reauthorization Act (SARA) (1986)

This law provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Among other things, CERCLA established requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled revision of the National Contingency Plan (NCP), which provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the National Priorities List (NPL).

Hazardous Materials Transportation Act

The transportation of hazardous materials is regulated by the Hazardous Materials Transportation Act (49 CFR § 101 et seq.), which is administered by the Research and Special Programs Administration of U.S. DOT. The Hazardous Materials Transportation Act governs the safe transportation of hazardous materials by all modes. The DOT regulations that govern the transportation of hazardous materials are applicable to any person who transports, ships, causes to be transported or shipped, or who is involved in any way with the manufacture or testing of hazardous materials packaging or containers. The DOT regulations govern every aspect of the movement of hazardous materials, including packaging, handling, labeling, marking, placarding, operational standards, and highway routing.

Lead-Based Paint Elimination Final Rule 24 Code of Federal Regulations (CFR)

Regulations for lead-based paint (LBP) are contained in the Lead-Based Paint Elimination Final Rule 24 Code of Federal Regulations (CFR) 33, governed by the U.S. Housing and Urban Development (HUD), which requires sellers and lessors to disclose known LBP and LBP hazards to prospective purchasers and lessees. Additionally, all LBP abatement activities must be in compliance with California and Federal Occupational Safety and Health Administration (OSHA) requirements, and with the State of California Department of Health Services requirements. Only LBP trained and certified abatement personnel are allowed to perform abatement activities. All lead LBP removed from structures must be hauled and disposed of by a transportation company licensed to transport this type of material at a landfill or receiving facility licensed to accept the waste.

State Regulations

Department of Toxic Substances Control (DTSC)

As a department of CalEPA, DTSC is the primary agency in California that regulates hazardous waste, cleans up existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of RCRA and the California Health and Safety Code.

DTSC also administers the California Hazardous Waste Control Law (HWCL) to regulate hazardous wastes. While the HWCL is generally more stringent than RCRA, until the USEPA approves the California program, both state and federal laws apply in California. The HWCL lists 791 chemicals and approximately 300 common materials that may be hazardous; establishes criteria for identifying, packaging, and labeling hazardous wastes; prescribes management controls; establishes

permit requirements for treatment, storage, disposal, and transportation; and identifies some wastes that cannot be disposed of in landfills.

Government Code Section 65962.5 requires the DTSC, the State Department of Health Services, the SWRCB, and CalRecycle to compile and annually update lists of hazardous waste sites and land designated as hazardous waste sites throughout the state. The Secretary for Environmental Protection consolidates the information submitted by these agencies and distributes it to each city and county where sites on the lists are located. Before the lead agency accepts an application for any development project as complete, the applicant must consult these lists to determine if the site at issue is included.

If any soil is excavated from a site containing hazardous materials, it is considered a hazardous waste if it exceeds specific criteria in Title 22 of the CCR. Remediation of hazardous wastes found at a site may be required if excavation of these materials is performed, or if certain other soil disturbing activities would occur. Even if soil or groundwater at a contaminated site does not have the characteristics required to be defined as hazardous waste, remediation of the site may be required by regulatory agencies subject to jurisdictional authority. Cleanup requirements are determined on a case-by-case basis by the agency taking jurisdiction.

Local Regulations

Los Angeles County Certified Unified Program

The Los Angeles County Department of Public Works is a Unified Program Agency and a Participating Agency (PA) to the Los Angeles County CUPA, which is managed by the Los Angeles County Fire Department (LACFD) Health Hazardous Materials Division. The LACFD is the CUPA for the majority of both incorporated and unincorporated parts of the Los Angeles County. The CUPA programs primarily consist of six hazardous materials and hazardous waste programs which are designed to consolidate and coordinate, as well as administer, permits, inspection activities, and enforcement activities throughout the County. The Hazardous Materials Management Program, within the CUPA programs, ensures compliance with statutory provisions and regulations relating to hazardous materials inventories and emergency plans. These plans address emergency responses to hazardous materials releases and threatened releases, as well as provisions for avoidance of accidents involving certain hazardous materials. The CUPA is responsible for hazardous spills of substances for materials such as heavy metals, pesticides, and herbicides. The CUPA is responsible for regulatory oversight of investigations and cleanups at sites affected by substances other than petroleum products from underground storage tanks.

City of Lancaster Hazardous Waste Management Plan

The City of Lancaster prepared a Hazardous Waste Management Plan (HWMP) for operations that generate hazardous waste, or potentially hazardous waste, for the City. Procedures and policies outlined in the HWMP are designed to meet the needs of the generating activities and to facilitate compliance with all applicable Federal, State, and local laws governing hazardous waste management. The primary object of the HWMP is to describe the process for identification, handling, tracking, collection, accumulation, and recycling/treatment/disposal of hazardous waste generated at the City of Lancaster's Maintenance Yard (City of Lancaster 2009a).

City of Lancaster Hazardous Waste Ordinance

To comply with State and County legislation, Lancaster passed a hazardous waste ordinance in order to establish procedures, standards, and criteria for the regulation of hazardous waste facilities within the City's jurisdiction. The major emphasis of the hazardous waste ordinance is to protect the public health, safety, and welfare of the residents of Lancaster against all types of perilous releases from any type of hazardous waste facility, and also to allow the City greater local control by regulating hazardous waste facilities through the conditional use permit process.

The conditional use permit provision of the City's Zoning Ordinance allows the City to review each application separately and place conditions on individual projects to ensure that the project is compatible with the General Plan and the Zoning Ordinance, and that it does not adversely affect neighboring land uses. The Hazardous Waste Facilities section was added to the Zoning Ordinance in 1990, and established procedures, standards, and criteria for applicants to follow. The permit process requires a detailed application, proper environmental assessment, and public hearings before both the Planning Commission and City Council. This ordinance ensures that site development occurs in an orderly, safe, and environmentally sound manner. The requirements of this Ordinance are consistent with State law, as well as the regulations contained in the County HWMP. (City of Lancaster 2009a)

City of Lancaster General Plan 2030 – Plan for Public Health and Safety

The Plan for Public Health and Safety of the City of Lancaster General Plan 2030 includes specific goals, objectives, and specific actions to maintain health and safety. Those that are applicable to the proposed project are listed below.

Goal 4 To provide a secure manmade environment which offers a high level of protection from natural and manmade hazards to life, health, and property.

Objective 4.5 Protect life and property from the potential detrimental effects (short and long term) of the creation, transportation, storage, treatment, and disposal of hazardous materials and wastes within the City of Lancaster.

Policy 4.5.1 Ensure that activities within the City of Lancaster transport, use, store, and dispose of hazardous materials in a responsible manner which protects the public health and safety.

Specific Actions 4.5.1(a) Implement the goals and policies of the Los Angeles County Certified Unified Program Agency; Health Hazardous Materials Division by ensuring the availability of safe and legal options for the management of hazardous waste within the City.

4.6.2 Impact Analysis

a. Methodology

Assessment of impacts is based on environmental conditions on the project site, a search of publicly available government databases, and other applicable laws and regulations related to hazards and hazardous materials issues.

b. Significance Thresholds

The following thresholds are based on Appendix G of the *State CEQA Guidelines*. A significant impact related to hazards and hazardous materials would occur if the 2016 FMP would do any of the following:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
2. 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
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school
4. 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, create a significant hazard to the public or the environment
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area
6. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area
7. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan
8. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands

The evaluation of risk and safety hazards from public and private airports (criteria 5 and 6) as well as wildfires (criterion 8) are not analyzed in this EIR, because they were analyzed and determined to have no impact in the Initial Study (see Appendix A).

c. Project Impacts and Mitigation Measures

Threshold 1:	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

Impact HAZ-1 BASED ON THE TYPES OF FACILITIES PROPOSED, AND CONTINUATION OF THE ROUTINE TRANSPORT, USE, AND DISPOSAL OF HAZARDOUS MATERIALS IMPLEMENTATION OF THE 2016 FMP WOULD CREATE THE POTENTIAL FOR UPSET CONDITIONS INVOLVING THE RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT. HOWEVER, COMPLIANCE WITH MITIGATION MEASURE HAZ-1, EXISTING REGULATIONS, AND ON-CAMPUS PROGRAMS WOULD ENSURE POTENTIAL IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Transport, Use, and Disposal

Implementation of the 2016 FMP would increase the transport, use, storage, and disposal of hazardous materials and petroleum products commonly used at construction sites, such as diesel fuel, lubricants, paints and solvents, and asphalt and cement products containing strong basic or acidic chemicals. Hazardous waste generated during construction may consist of welding materials, fuel and lubricant containers, paint and solvent containers, and discarded asphalt and cement

products. During operation, classrooms/facilities that store hazardous materials could potentially experience accidents or upset conditions that result from their routine use. The discussion below has been broken down into operational and construction impacts based on implementation of the 2016 FMP.

Operational Impacts

The uses envisioned under the 2016 FMP are essentially an expansion of the existing college campus uses, with the inclusion of several new uses such an academic commons, arts complex, campus security building, and instruction buildings. Campus operations and maintenance currently utilize relatively small amounts of hazardous materials, such as chemicals associated with laboratory research, heating and cooling system fluids, fuel for maintenance equipment, solvents, cleaning products, pesticides/fertilizers, and other similar chemicals. These materials would not be substantially different from household chemicals and solvents already in general and wide use throughout the City and in the vicinity of the project site.

The protocols established for current and future campus operational and maintenance activities adhere to applicable local, state, and federal laws regulating the use and transport of hazardous materials. For example, the Los Angeles County Fire Department and the State of California OSHA (Cal OSHA) regulate the use, storage, and handling of hazardous materials on the project site. The Los Angeles County Fire Department is also responsible for enforcing all local, state, and federal codes related to the safe occupancy of buildings. These codes inherently safeguard life and property from the hazards of fire; the fire/explosion hazards arising from the storage, handling, and use of hazardous substances, materials, and devices; and hazardous conditions due to the use or occupancy of buildings. Cal OSHA protects workers and the public from occupational safety hazards through its Occupational Safety and Health program and provides consultative assistance to employers to help ensure a safe working environment.

The new uses under the 2016 FMP may include the use of chemicals for arts or science classes, or other types of fuels, solvents, or hazardous substances during day to day operations. Chemical safety training is required for all students who work with chemicals, in order to minimize the occurrence of accidental chemical releases and ensure that, when one does occur, it is handled in a safe manner. Material Safety Data Sheets (MSDS), which outline procedures to address spills and leaks for individual chemicals, are reviewed during training conducted under the federal Hazard Communication Standard (29 CFR 1910.1200) and the Laboratory Standard (29 CFR 1910.1450). Copies of MSDSs are received with shipments of new materials and are maintained in each applicable work location. The AVC website (https://www.avc.edu/administration/facilities/emergency) also publicizes procedures to follow in the event of facility and non-facility emergencies. In addition, the AVCCD's Administrative Procedures outline specific procedures to follow if chemicals if any hazardous substances spill or release (AVC 2018b).

The 2016 FMP would involve the transport, use, or disposal of hazardous substances, but these activities would not be substantial, and the operational use of all hazardous materials would be in compliance with existing regulations. Operational impacts would be less than significant.

Construction Impacts

Development of the 2016 FMP would temporarily increase the transport, use, storage, and disposal of hazardous materials and petroleum products commonly used at construction sites, such as diesel fuel, lubricants, paints and solvents, and asphalt and cement products containing strong basic or

acidic chemicals. Hazardous waste generated during construction may consist of welding materials, fuel and lubricant containers, paint and solvent containers, and discarded asphalt and cement products.

The most common construction-related hazardous materials incidents involve minor spills or drips. Small fuel or oil spills are possible, but would have a negligible impact on public health. All hazardous materials would be stored, handled, and disposed of according to the manufacturers' recommendations, and spills would be cleaned up in accordance with applicable regulations. Under the existing regulations discussed in Section 4.6.1c, hazardous materials spills or releases, including petroleum products such as gasoline, diesel, and hydraulic fluid, regardless of quantity spilled, must be immediately reported if the spill has entered or threatens to enter a water of the State, or has caused injury to a person or threatens injury to public health. Immediate notification must be made to the local emergency response agency, or 911, and the OES Warning Center. For non-petroleum products, additional reporting may be required if the release exceeds federal reportable quantity thresholds over a release period of 24 hours as detailed in HSC Section 25359.4 and in 40 CFR 302.4.

ASBESTOS AND LEAD-BASED PAINT

Implementation of the 2016 FMP would involve demolition of approximately 20 structures and renovation of four structures. These structures are listed in Table 4.6-2. In addition, Table 4.6-2 shows the approximate date when construction of the buildings occurred.

Table 4.6-2 Demolition/Renovation Projects and Approximate Age of Construction

Projects	Approximate Age of Construction
Demolition	
Student Services	1960-1969
Student Center	1960-1969
Fine Arts 1, 2, 3, 4	1960-1969
Learning Center	1960-1969
Faculty Office 1, 2, and 3	1960-1969
Lecture Hall	1960-1969
Liberal Studies 1 and 2	1960-1969
Math/Engineering	1960-1969
Technical Education 1 and 2	1960-1969
Learning Center	1960-1969
SOAR High School	2007
CSUB	1970-1979
Renovation	
Applied Arts	1990-1999
Business Education	2000-2009
Gymnasium	1960-1969
Field House	2000-2009

Source: AVCCD 2016

As shown in Table 4.6-2, the majority of structures proposed for demolition were built between 1960 and 1969. Per OSHA Asbestos Standards, presumed Asbestos Containing Material (PACM) is

also treated as asbestos, and includes thermal system insulation and surfacing material found in buildings constructed no later than 1980. In addition, asphalt and vinyl materials installed no later than 1980 are considered to be asbestos containing materials (OSHA Standard 1910.1001).

Although asbestos is not considered a hazardous waste while in use as part of a structure, the demolition of on-site structures could result in the release of ACM wastes and lead based paint. Based on the age of several on-site buildings (built prior to 1980), these buildings may contain lead-based paint that could be disturbed by proposed demolition activities. Demolition and renovation of these structures without proper assessment and abatement of lead based paint and ACM could create a significant hazard to the public or environment, resulting in a potentially significant impact. Mitigation Measure HAZ-1 requires completion of an asbestos and lead based paint survey to identify whether abatement procedures are required, prior to demolition or renovation activities.

Mitigation Measures

HAZ-1 Lead-based Paint and Asbestos Containing Material Surveys

Prior to the issuance of any demolition permits, a lead-based paint (LBP) and asbestos containing material (ACM) survey shall be completed by a Cal/OSHA certified professional, for all structures planned for renovation or demolition. ACM surveys shall follow the requirements listed in AVAPCD's Rule 1403 for demolition and renovation activities. LBP surveys shall follow United States EPA and Cal OSHA guidelines. Based on the results of the LBP and ACM surveys, abatement may be required prior to demolition or renovation. If abatement is required, all recommendations of the surveys shall be followed to properly dispose of identified hazardous materials.

Significance After Mitigation

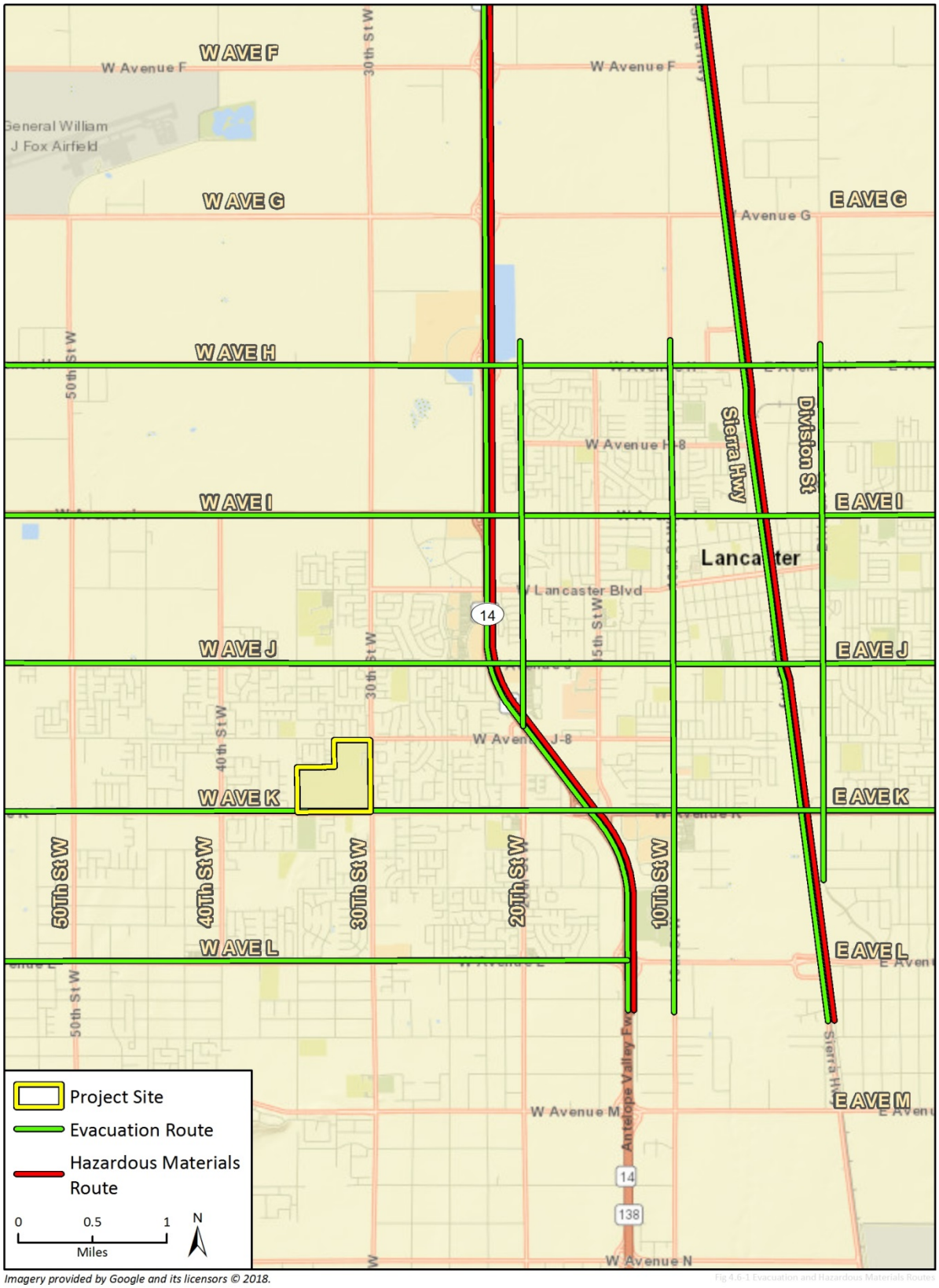
With implementation of Mitigation Measure HAZ-1, proper surveying related to ACM's and LBP would be followed (and if necessary, abatement procedures), thereby reducing the potential to expose employees, workers, and students to subject hazardous materials. Impacts related to the exposure to ACM's and LBP would be less than significant.

Threshold 2:	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

Impact HAZ-2 IMPLEMENTATION OF THE 2016 FMP WOULD NOT 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. COMPLIANCE WITH EXISTING REGULATIONS WOULD REDUCE THIS IMPACT TO A LESS THAN SIGNIFICANT LEVEL.

Figure 4.6-1 illustrates designated hazardous material transportation routes in the vicinity of the project site and in the City of Lancaster. Although the project site is not located near any freight/rail line tracks or City-designated hazardous materials transportation routes, the campus is bounded by local roadways, on which accidents involving hazardous materials could occur. Such accidents could potentially create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Figure 4.6-1 Hazardous Materials Transportation Routes and City Evacuation Routes



Although transportation of hazardous materials could result in accidental spills, leaks, toxic releases, fire, or explosion, the U.S Department of Transportation (DOT) prescribes strict regulations for the safe transportation of hazardous materials, as described in Title 49 of the CFR and the Hazardous Materials Transportation Act (HMTA). HMTA administers container design, and labeling and driver training requirements. These standard accident and hazardous materials recovery training and procedures are enforced by the State and followed by private state-licensed, certified, and bonded transportation companies and contractors. Compliance with applicable regulations related to the handling and storage of hazardous materials would minimize the risk of public exposure to these substances, resulting in a less than significant impact.

Vehicles that service the site during construction may transport contaminated soil or other wastes away from the site for disposal. During site operation, vehicles may transport fuels, pesticides, fertilizers, cleaners, classroom chemicals, or other chemicals routinely used on campus at classrooms, offices, food service facilities, residences, and at athletic fields. These vehicles, along with other commercial vehicles transporting hazardous materials near the site would utilize W Avenue K, 30th Street W, and W Avenue J-8 and other nearby roadways.

In the unlikely event of an accident involving the transport of hazardous wastes and materials on roadways abutting the site, the health of construction workers, residents in the community, or University students could be adversely affected. However, local agencies must respond to the incident in accordance with their specific assignment of duties and procedures (i.e., LA County CUPA, Health Hazardous Materials Division, Fire Department, Police Department, etc.) U.S. EPA and DOT laws and regulations have also been promulgated to track and manage the safe interstate transportation of hazardous materials and waste.

The U.S. EPA administers permitting, tracking, reporting, and operations requirements established by the RCRA. As mentioned above, the DOT regulates the transportation of hazardous materials through implementation of the HMTA. Enforcement of these acts and rapid response by local agencies would ensure that hazards to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be less than significant.

Mitigation Measures

No mitigation required.

Threshold 3:	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school

Impact HAZ-3 IMPLEMENTATION OF THE 2016 FMP WOULD EMIT HAZARDOUS EMISSIONS OR HANDLE HAZARDOUS OR ACUTELY HAZARDOUS MATERIALS, SUBSTANCES, OR WASTE WITHIN 0.25 MILE OF AN EXISTING OR PROPOSED SCHOOL. COMPLIANCE WITH EXISTING REGULATIONS WOULD ENSURE POTENTIAL IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As listed in Table 4.6-1, three K-12 educational facilities are located within 0.25 mile of the project site and fourth school, Amargosa High School, is located approximately 0.30 miles away. As discussed in Impact HAZ-1 and HAZ-2, implementation of the 2016 FMP would result in the regular transport, use, and disposal of small quantities of hazardous materials/substances. However, as discussed, the impacts of these uses would not be substantial and compliance with existing regulations would reduce impacts to a less than significant level.

Implementation of the 2016 FMP may slightly increase transport of hazardous materials on roads in the vicinity of the project site, including within 0.25 mile of schools. However, all materials must be used, stored, and disposed of in accordance with applicable federal, State, and local laws (including the HMTA), which would effectively reduce the potential impacts associated with hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or potential future school. In addition, as discussed in Impact HAZ-1 and HAZ-2, local agencies such as the LA County CUPA, Health Hazardous Materials Division, and Fire and Police Department, would continue to provide oversight in case of potential releases. Therefore, potential hazardous materials impacts within 0.25 mile of existing or proposed schools from implementation of the2016 FMP would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Threshold 4:	Be located on a site that is included on a list of hazardous material 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

Impact HAZ-4 IMPLEMENTATION OF THE 2016 FMP WOULD NOT LOCATE NEW DEVELOPMENT NEAR HAZARDOUS MATERIALS SITES. THEREFORE, FUTURE DEVELOPMENT AS ENVISIONED IN THE 2016 FMP WOULD NOT CREATE A HAZARD TO THE PUBLIC AND THE ENVIRONMENT AND THERE WOULD BE NO IMPACT.

As discussed in Section 4.6.1(b), *Records Searches*, the DTSC - Envirostor online database, the SWRCB - Geotracker online database, the Cortese List database, and federal superfund site database were reviewed for potential hazardous material sites and contamination at the project site. Based on this review, the project site is not listed as a hazardous materials site. In addition, per the reviewed databases, no listed hazardous material sites/facilities or active clean ups were identified within a half-mile radius of the project site.

The project site does not have any on-site or adjacent sites with identified hazardous materials or contamination issues. Therefore, the 2016 FMP would not create a significant hazard to the public or environment by siting new development on hazardous materials sites, and there would be no impact.

Mitigation Measures

No mitigation required.

Threshold 7:	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan

Impact HAZ-5 IMPLEMENTATION OF THE 2016 FMP WOULD NOT IMPAIR IMPLEMENTATION OF OR PHYSICALLY INTERFERE WITH AN ADOPTED EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN SINCE THE 2016 FMP WOULD NOT INTERFERE WITH DESIGNATED EVACUATION ROUTES IN THE VICINITY OF THE PROJECT SITE AND APPLICABLE EMERGENCY RESPONDERS/SERVICES WOULD CONTINUE TO PROVIDE OVERSIGHT IN CASE OF EMERGENCY. THEREFORE, THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

AVC maintains an Area Evacuation Map (AVC 2015) that includes a comprehensive set of procedures/figures to ensure a proper evacuation in the event of a wide range of on-campus

incidents. The evacuation map includes directional routes to safely evacuate facilities towards the peripheries of the campus, as well as a map dividing the campus into different zones for designated routine evacuation practice/drills. Although the 2016 FMP would accommodate new campus development that would alter the existing layout of the campus, AVC would continue to update and generate new evacuation maps to illustrate how to safely exit the campus. In addition, the AVC website includes emergency drill procedures to follow in the event of campus emergencies, information regarding where to go and what to do in case of emergencies, drill schedules/calendar, handicapped evacuees, duties and assignments of assisting AVC employees, and also lock down (active shooter) emergency procedures. Complete campus emergency procedures are available on the AVC website (https://www.avc.edu/information/emergency/).

The City of Lancaster currently contracts with the Los Angeles County Fire Department (LACFD) for fire and paramedic services, which would be called upon to service the site in case of fire emergencies. In addition, police department services are contracted through the Los Angeles County Sherriff's Department, and provide the City with responders for safety, enforcement, and emergency situations. These services would continue to be provided to the project site over the life of the 2016 FMP, and implementation would not interfere or impair these services.

As shown in Figure 4.6-1, General Plan emergency evacuation routes near the project site include the following east-west trending roads: Avenue J, Avenue K, and Avenue L; and the following north-south trending roads: 10th Street West, and 20th Street West, north of SR 14. As discussed in Section 2.0, *Project Description*, the only off-site component of the 2016 FMP would be the new campus entry at the intersection of 30th Street West and West Avenue J-12. Neither of these roadways are designated emergency routes; therefore, implementation of this aspect of the 2016 FMP would not impair or interfere with these routes. Construction equipment and materials needed for development would access the site from either 30th Street West or West Avenue K. No full road closures would occur on either of these streets during campus entry construction or any utility line work along the right of way. Any required half lane closures, re-routes, detours, etc., would be temporary, and last only the length of proposed construction. In addition, as discussed in Section 2, *Project Description*, AVC would implement its standard best practices relating to construction traffic, which include flag persons for directing traffic, avoiding peak travel times, and posting of alternate routes. These practices would help ensure that streets are adequately accessible for emergency responders and during potential emergency evacuations.

The Los Angeles County CUPA HHMD Emergency Operations Section provides 24-hour emergency services in response to hazardous materials spills or releases in the HHMD CUPA jurisdiction areas, including the City of Lancaster (LACFD 2018). The existing Antelope Valley College Emergency response procedures, combined with support from the Los Angeles CUPA HHMD Emergency Operations Section programs, would ensure adequate emergency response and/or emergency evacuation. Because implementation of the 2016 FMP would not impair any adopted emergency response or evacuations plans, this impact would be less than significant.

Mitigation Measures

No mitigation required.

d. Cumulative Impacts

Cumulative development on the project site and in the site vicinity could potentially expose future area residents, employees, and visitors to hazards and hazardous materials used during construction and operational activities. However, as discussed in this section, existing policies, programs, and

regulations govern the transport, use, and disposal of hazardous materials, which minimizes the potential to expose workers, residents, or students to hazardous substances.

The magnitude of hazards for individual projects carried out under the 2016 FMP were found in this section of the EIR to be less than significant based upon existing environmental conditions and compliance with existing standard operating procedures. Hazard evaluations for other cumulative projects would need to be completed on a case-by-case basis. If lead and asbestos are found in buildings planned for demolition or renovation, or if soil and groundwater contamination are discovered on sites planned for future development, these conditions would be required to comply with existing applicable local, state and federal regulations, and implement appropriate mitigation if necessary. Compliance with applicable rules and regulations and implementation of appropriate mitigation measures, if necessary, would avoid potential cumulatively significant hazards and hazardous materials impacts associated with cumulative development.

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4.7 Noise

This section evaluates the potential impacts of the 2016 FMP on existing noise conditions. Both temporary construction noise and long-term noise generated by operation of the proposed project are evaluated.

4.7.1 Setting

a. Overview of Noise

Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz).

Sound pressure level is measured on a logarithmic scale with the 0 dB level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dBA, and a sound that is 10 dBA less than the ambient sound level has no effect on ambient noise. Because of the nature of the human ear, a sound must be about 10 dBA greater than the reference sound to be judged as twice as loud. In general, a 3 dBA change in community noise levels is noticeable, while 1-2 dB changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while arterial streets are in the 50-60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels typically attenuate at a rate of approximately 6 dBA per doubling of distance from point sources (such as industrial machinery). Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dBA per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dBA per doubling of distance. Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA. The exterior-to-interior reduction of residential homes is generally 25 dBA with windows closed (Federal Transit Administration [FTA] 2006).

In addition to the actual instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). Typically, Leq is summed over a one-hour period. Lmax is the highest root mean squared (RMS) sound pressure level within the measuring period, and Lmin is the lowest RMS sound pressure level within the measuring period.

The time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than that which occurs during the day. Community noise is usually measured using Day-Night Average Level (Ldn), which is the 24-hour average noise level with a 10-dBA penalty for noise occurring during nighttime (10 p.m. to 7 a.m.) hours, or Community Noise Equivalent Level

(CNEL), which is the 24-hour average noise level with a 5 dBA penalty for noise occurring from 7 p.m. to 10 p.m. and a 10 dBA penalty for noise occurring from 10 p.m. to 7 a.m. Noise levels described by Ldn and CNEL usually do not differ by more than 1 dBA. In practice, CNEL and Ldn are often used interchangeably. The relationship between peak hourly Leq values and associated Ldn or CNEL values depends on the distribution of traffic over the entire day. There is no precise way to convert a peak hourly Leq to Ldn or CNEL. However, in urban areas near heavy traffic, the peak hourly Leq is typically 2-4 dBA lower than the daily Ldn/CNEL (California State Water Resources Control Board [SWRCB] 1999).

b. Fundamentals of Ground-borne Vibration

Vibration is sound radiated through the ground. The rumbling sound caused by the vibration of room surfaces is called ground-borne noise. The ground motion caused by vibration is measured as particle velocity in inches per second and, in the United States, is referenced as vibration decibels (VdB).

The background vibration velocity level in residential areas is usually around 50 VdB. The vibration velocity level threshold of perception for humans is approximately 65 VdB. According to the FTA *Transit Noise and Vibration Impact Assessment*, a vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration from traffic is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings (FTA 2006).

The general human response to different levels of ground-borne vibration velocity levels is described in Table 4.7-1.

Table 4.7-1 Human Responses to Different Levels of Ground-borne Vibration

Vibration Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception for many humans.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find transit vibration at this level annoying.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

Source: FTA 2006

c. Regulatory Setting

State

California Government Code Section 65302

The California Government Code encourages each local government entity to implement a noise element as part of its general plan. In addition, the California Governor's Office of Planning and

Research (OPR) has developed *Guidelines for the Preparation and Content of the Noise Element of the General Plan*. The guidelines include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure. The recommendations established by OPR for noise-compatible land uses are listed in Figure 4.7-1 (OPR 2017).

AVCCD does not have an adopted a planning document similar to a Noise Element; however, for the purposes of this assessment recommendations included in OPR's (2017) Guidelines have been used to assess the compatibility of both existing and proposed land uses on the project site (school) and surrounding areas (described in subsection 2.5.2, Surrounding Land Uses, of Section 2, Project Description) with post-project noise levels.

Title 24

Title 24 of the California Code of Regulations codifies sound transmission control requirements, establishing uniform minimum noise insulation performance standards for dwellings. Specifically, Title 24 states that interior noise levels attributable to exterior noise sources shall not exceed 45 dBA CNEL in any habitable room of a new building.

Local

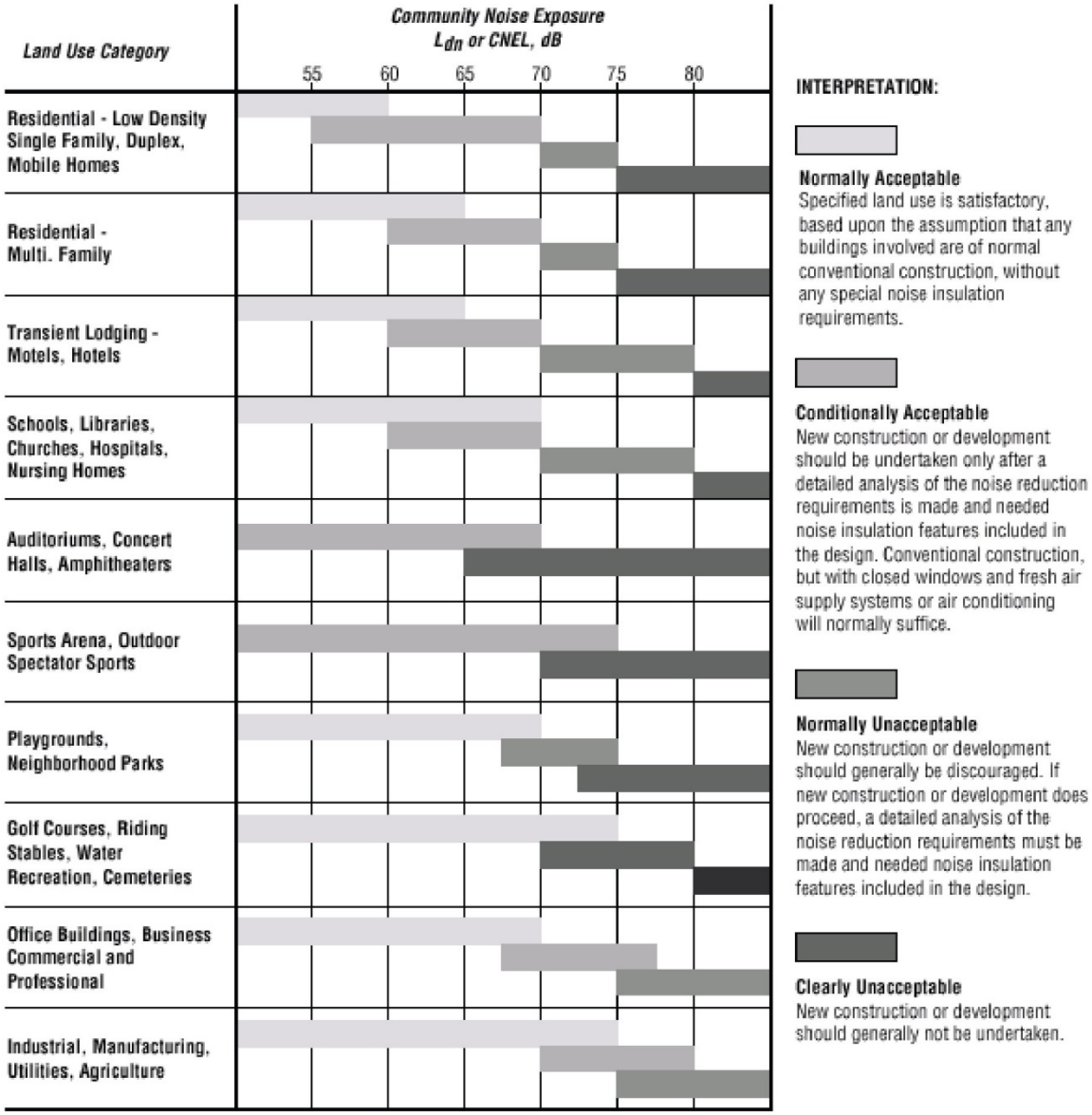
Neither AVCCD nor the California Community Colleges Chancellor's Office (Community College system) has adopted any policies and standards identifying acceptable noise levels at campus receptors. While AVCCD is not subject to City of Lancaster policies or regulations, the 2016 FMP's noise-related impacts would affect noise-sensitive receptors in Lancaster. These impacts are therefore, in some cases, analyzed in this section of the EIR according to applicable portions of the City's Noise Ordinance (Chapter 8.24, *Noise Regulations* of the City of Lancaster Municipal Code [LMC]), other portions of the LMC, and the City of Lancaster General Plan.

City of Lancaster

MUNICIPAL CODE

Per Section 8.24.040, *Loud, unnecessary and unusual noises prohibited—Construction and building*, of the LMC, construction activities are limited to the hours of 7:00 a.m. to 8:00 p.m., Monday through Saturday. Construction activities or repair work of any kind, including earth excavating (filling or moving), and the use of an air compressor, jack hammer, power-driven drill, riveting machine, excavator, diesel-powered truck, tractor or other earth-moving equipment, hard hammers on steel or iron or any other machine tool, device or equipment which makes loud noises within 500 feet of an occupied dwelling, apartment, hotel, mobile home or other place of residence is prohibited outside of the permitted construction hours.

Figure 4.7-1 Noise Compatibility Land Uses Matrix



Source: Governor's Office of Planning and Research, General Plan Guidelines, 2017.

Section 8.24.050, *Exceptions,* states that any work completed with the express written permission of the City Engineer shall be allowed during those prohibited times.

Section 17.20.160, *Design and performance standards,* subsection four states that uses which generate noise in Zone S (school) by the nature of their function and/or processes shall be required to demonstrate that the noise levels emitted from the use shall not exceed 65 dBA at any property line which abuts a residential zone or use. Site design methods which may be utilized to reduce noise include:

a. The use of building setbacks and dedication of noise easements to increase the distance between the noise source and receiver;
b. The location of uses and orientation of buildings which are compatible with higher noise levels adjacent to noise generators or in clusters to shield more noise-sensitive areas and uses;
c. The placement of noise-tolerant land uses, such as parking areas, between the noise source and receiver;
d. The placement of noise-tolerant structures to shield noise-sensitive areas

When adjacent to a residential zone or use the following noise-related requirement shall also be applied:

1. **Buffering.** When abutting property which is residentially zoned, a masonry wall of less than 6 feet in height shall be provided at the property line in accordance with the provisions for walls specified in Section 17.28.030C to minimize conflicts between public uses and residential uses. A 10-foot landscaped setback shall be placed next to the wall. This requirement shall be modified, where necessary to preclude interference with line-of-sight of a driver within 10 feet of any street, highway or alley, down to a maximum height of 42 inches. The design of the wall shall be considered as part of the site plan review. The site and any buildings thereof shall be designed to locate noise- and odor-generating equipment and activity in a manner which will have a minimal impact on abutting property which is residentially zoned or used. Such techniques may include, but are not limited to, no windows on the building wall(s) facing residentially zoned property, insulating structures housing equipment against noise, limitation of the hours of equipment operation, and other controls designed for specific problems. It shall be the burden of the applicant to prove that his project will not have a detrimental effect on neighboring residential property at the time of site plan review.

GENERAL PLAN

The Lancaster General Plan's *Plan for Public Health and Safety* provides a general overview of noise generators of the City as well as an objective and supporting policies and specific actions to help reduce noise impacts to noise-sensitive receptors. The following are the objective, policies, and specific actions relevant to the project (City of Lancaster 2009b):

Objective 4.3 Promote noise compatible land use relationships by implementing the noise standards identified in Table 4.7-2 to be utilized for design purposes in new development, and establishing a program to attenuate existing noise problems.

Table 4.7-2 Noise Compatible Land Use Objectives

Land Use	Maximum Exterior Noise Level (dBA, CNEL)	Maximum Interior Noise Level (dBA, CNEL)
Residential (Rural, Single-Family, Multi-family)	65	45
Schools	–	–
Classrooms	65	45
Playgrounds	70	–
Libraries		50
Hospitals/Convalescent Facilities	–	–
Living Areas	–	50
Sleeping Areas	–	40
Commercial and Industrial	70	–
Office Areas	–	50

Source: City of Lancaster 2009b

Policy 4.3.1 Ensure that noise-sensitive land uses and noise generators are located and designed in such a manner that City noise objectives will be achieved.

Specific Action 4.3.1(a) Where new development is proposed for areas within which the exterior or interior noise levels outlined in Table 4.7-2 of Objective 4.3 are likely to be exceeded by existing or planned land uses, require a detailed noise attenuation study to be prepared by a qualified acoustical engineer, in order to determine appropriate mitigation and ways to incorporate such mitigation into project design.

Specific Action 4.3.1(d) When proposed projects include uses that could be potentially significant noise generators, require noise analyses to be prepared by an acoustical expert, including specific recommendations for mitigation when:

1. The project is located in close proximity to noise sensitive land uses or land which is planned for noise sensitive land uses, or
2. The proposed noise source could violate the noise provisions of the General Plan or Municipal Code.

Policy 4.3.2 Wherever feasible, manage the generation of single event noise levels from motor vehicles, trains, aircraft, commercial, industrial, construction, and other activities such that single event noise levels are no greater than 15 dBA above the noise objectives included in the Plan for Public Health and Safety.

Specific Action 4.3.2(d) As a condition of approval, limit non-emergency construction activities to daylight hours between sunrise and 8:00 p.m.

d. Sensitive Receptors

Noise exposure standards for various types of land uses reflect the varying noise sensitivities associated with each of these uses. Residences, schools, libraries, hospitals/convalescent facilities/medical facilities are most sensitive to noise intrusion and, therefore have, more stringent noise exposure standards than manufacturing or agricultural uses that are not subject to impacts such as sleep disturbance. The sensitive receptors closest to the project site include:

- Single-family residences adjacent to the project site, located approximately 50 feet northwest of the northern boundary of the project site
- Single-family residences located approximately 100 feet north of the northern boundary of the project site, across Avenue J 8 (as well as to the northeast, east, and south)
- A church and school located approximately 165 feet south of the project site
- A church located approximately 165 feet east of the project site
- Single-family residences located approximately 350 feet west of the project site's western boundary

The nearby sensitive receptors are shown in Figure 4.7-2. (Note: the single-family residences located near the project site [opposite side of W Avenue J 8, 30th Street W, and W Avenue K] to the northeast, east, and south are not shown, but are equidistant to the identified single-family residences to the north at a distance of approximately 100 feet).

e. Existing Noise Environment

Project Site and Vicinity

Major sources of noise on the project site and in its vicinity generally include: motor vehicles, aircraft, and construction activities. The predominant noise source in and around the project site is motor vehicles driving along area roadways. Motor vehicle noise is of concern because it is characterized by a high number of individual events, which often create a sustained noise level. Roadways near the project site that are major sources of noise include W Avenue J 8, 30th Street W, 35th Street W, and W Avenue K.

The general environment of the project site and its vicinity is characterized by residential neighborhoods, institutional uses and open space/park uses with low ambient noise levels during the evening and nighttime hours. All boundaries of the project site are adjacent to residential areas, where the primary noise sources include local traffic within the residential neighborhood. The project site is separated from these areas by the following streets: W Avenue J 8 to the north, 30th Street W to the east, W Avenue K to the south, and 35th Street W to the west. Additionally, the project site is separated from the residential neighborhood to its northwest by two on-campus roads: Technology Drive (a north-south roadway aligned with 32nd Street W) and Champions Way (an east-west roadway aligned with W Avenue J 11).

There are four aircraft-related land uses located within 6 miles of the project site. These include:

- General William J. Fox Airfield, located approximately 4.0 miles northwest of the project site
- Bohunk's Airpark, located approximately 4.6 miles north-northwest of the project site
- Palmdale Regional Airport/Plant 42 Airport, located approximately 5.2 miles southwest of the project site
- Sterks Ranch Airport, located approximately 5.6 miles north-northeast of the project site

Figure 4.7-2 Sound Measurement Locations and Sensitive Receptors

Imagery provided by Google and its licensors © 2018.

Due to the distance between the aircraft-related land uses and the project site, any aircraft flown at these locations would be sufficiently high over the project site to preclude substantial noise effects on the proposed project.

On-Site Noise Level Measurements

In order to establish existing noise conditions, noise level measurements were collected on June 20, 2018 at six locations on or near the project site using an ANSI Type II integrating sound level meter in accordance with standard protocols. Five of the six sound level measurements were collected during morning peak traffic conditions (between 7:00 a.m. and 9:00 a.m.), with one after the morning peak hour, between 9:20 a.m. and 9:30 a.m. The sound level measurements provide an estimate of the general noise environment in the vicinity of the project site. The sound level measurement locations are shown in Figure 4.7-2. Locations were selected at a central area of campus, near a less traveled roadway adjacent to the campus, and along the most heavily traveled roadways adjacent to campus. These measurements are representative of the lowest and highest sound levels associated with the roadways adjacent to the project site and were selected to capture ambient noise levels. Location 1 is near the intersection of 30th Street W and W Avenue K at the southeastern corner of the project site. Location 2 is adjacent to the Seventh Day Adventist Church and 30th St W. Location 3 is adjacent to the neighborhood to the north of the project site, across W Avenue J 8 from the project site. Location 4 is in the central area of campus, near the library. Location 5 is adjacent to the neighborhood approximately 350 feet west of the project site. Location 6 is adjacent to a church and school, across W Avenue K from AVC's Performing Arts Theater Building. Location 1, Location 2, Location 3, and Location 6 are representative of existing traffic noise levels along major roadways. Location 5 is representative of the existing noise environment at nearby sensitive receptors, but not along a major roadway. Location 4 is representative of sound levels at the central area of campus. Table 4.7-3 identifies the sound level measurement locations and measured sound levels.

Table 4.7-3 Sound Level Measurement Results (dBA)

Measurement Location	Primary Noise Source	Sample Time	Leq Measured[1]	Lmax[1]	Lmix[1]
1 – Church and School Sensitive Receptors, adjacent to W Avenue K	Traffic along W Avenue K	7:34 a.m. – 7:44 a.m.	73	84	47
2 –Church Sensitive Receptor, adjacent to 30th St W	Traffic along 30th Street W	7:52 a.m. – 8:02 a.m.	68	81	46
3 – Existing Single-Family Residences, adjacent to W Avenue J 8	Traffic along W Avenue J 8	8:08 a.m. – 8:18 a.m.	68	88	43
4 – Central Campus, near the Existing Library	Birds and students talking	8:40 a.m. – 8:50 a.m.	50	70	41
5 – Adjacent to 30th St W, adjacent to Eastern Boundary of the Project Site	Traffic along 30th St W	8:57 a.m. – 9:07 a.m.	65	79	42
6 – Adjacent to Existing Single-Family Residences west of the Project Site	Birds and traffic along W Avenue K	9:20 a.m. – 9:30 a.m.	45	64	36

[1] Sound levels measured are rounded to the nearest whole decibel (dBA).

See Figure 4.7-2 for noise measurement locations

See Appendix E for ambient noise monitoring data sheets

Source: Field visit on June 20, 2018 using ANSI Type II Integrating Sound Level Meter

As shown in Table 4.7-3, measured sound levels along roadways near the project site are between 65 dBA Leq and 73 dBA Leq. The noise measurement taken on campus, at the existing library, (Location 4) was measured at 50 dBA Leq and the measurement at the residences west of the project site, away from main roadway traffic, was measured at 45 dBA Leq.

4.7.2 Impact Analysis

a. Methodology and Significance Thresholds

The analysis of noise impacts considers the effects of both temporary construction-related noise and operational noise associated with long-term project-related activities, including project-generated traffic and stationary noise sources. Construction noise estimates are based upon noise levels reported by the FTA (2006) in the *Transit Noise and Vibration Impact Assessment*, the Federal Highway Administration's (FHWA, 2006) *Construction Noise Handbook*, and the distance to nearby sensitive receptors.

Assumptions regarding the equipment used during construction activity facilitated by the 2016 FMP are based on the default equipment lists provided by CalEEMod, as analyzed in Section 4.5, *Greenhouse Gas Emissions* (see Appendix C for equipment analyzed and Appendix F for phasing noise calculations). In order to analyze a reasonable worst case scenario for construction activity, this analysis assumes that all equipment used during each phase of project construction would operate simultaneously and continuously for up to 70 percent of the work day. Reference noise levels from the FTA, FHWA, and University of Washington are used to estimate noise levels at nearby sensitive receptors based on a standard noise attenuation rate of 6 dB per doubling of distance (line-of-sight method of sound attenuation for point sources of noise). Construction noise level estimates do not account for the presence of intervening structures or topography, which may reduce noise levels at receptor locations. Therefore, the noise levels presented herein represent a conservative, reasonable worst-case estimate of actual temporary construction noise.

Noise associated with existing and future traffic along area highways and roadways was estimated using the US Department of Housing and Urban Development (HUD) Day/Night Noise Level (DNL) Calculator (noise model data is provided in Appendix G). The model calculations are based on traffic data from the *Antelope Valley Community College District 2016 Facilities Master Plan Draft Transportation Impact Study* (TIS) prepared by Fehr & Peers (July 2018; Appendix B).

Modeling of traffic noise by Rincon indicates that, regardless of the existing traffic volume on a given roadway, a 1 percent increase in traffic volume would raise traffic noise by less than 0.1 dBA, while a 10 percent increase would raise traffic noise by approximately 0.4 dBA, and a 20 percent increase would raise traffic noise by about 0.8 dBA. This analysis uses recommendations contained in the FTA's *Transit Noise and Vibration Impact Assessment* (2006) as guidance to determine whether or not the project's effect on roadway noise would represent a substantial permanent increase to nearby noise-sensitive receptors. Using the FTA criteria, the allowable noise exposure increase is based on the existing ambient noise level. Roadways with lower ambient noise levels have a higher allowable increase, while roadways with a higher ambient noise level are allowed a lower noise increase. Traffic-related noise increases would constitute a significant impact if roadway noise levels would increase by more than the levels indicated below.

Pursuant to Appendix G of the State *CEQA Guidelines*, significant noise impacts would occur if the project would result in any of the following conditions:

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

The evaluation of airport land use consistency and excessive noise (Significance Thresholds 5 and 6) are not analyzed in this EIR, as they were analyzed and determined to have no impact in the Initial Study for this project (see Appendix A).

The quantitative standards used for each threshold are described below.

For Thresholds 1 and 4, as they relate to temporary construction noise impacts, temporary construction noise is considered to produce a potentially significant impact if it would exceed 15 dBA above the noise levels identified in the Lancaster General Plan Land Use Compatibility Objectives, summarized in Table 4.7-2 and described in Policy 4.3.2. While AVCCD is not subject to City of Lancaster General Plan and City Standards, this City standard is used in this case to determine if noise level increases would produce a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

For Threshold 2, an impact would be potentially significant if an existing or proposed receptor would be exposed to vibration levels above the following FTA standard:

- 75 VdB at residences and buildings where people normally sleep
- 100 VdB for fragile buildings

For Thresholds 1 and 3, as they relate to long-term noise, an impact would be potentially significant if operational noise, including traffic noise, would cause existing receptors to be exposed to a substantial increase in noise, as determined by the FTA-established standards as summarized Table 4.7-4, and/or if the noise levels exceed the land use compatibility noise levels identified in Table 4.7-2 for proposed on-site noise-sensitive buildings (e.g., the proposed arts complex).

The FTA has recommended noise criteria related to traffic-generated noise. These recommendations are contained in the FTA *Transit Noise and Vibration Impact Assessment*, which can be used as guidance to determine whether or not a change in traffic would result in a substantial permanent increase in noise. Under the FTA standards, the allowable noise exposure increase is reduced with increasing ambient existing noise exposure, such that higher ambient noise levels have a lower allowable noise exposure increase. Table 4.7-4 shows the significance thresholds for increases in traffic-related noise levels. These standards are applicable to project impacts on existing sensitive receptors (as defined under *Sensitive Receptors* below).

Table 4.7-4 Significance of Changes in Operational Roadway Noise Exposure

Existing Noise Exposure (dBA Ldn or Leq)	Allowable Noise Exposure Increase (dBA Ldn or Leq)
45-49	7
50-54	5
55-59	3
60-64	2
65-74	1
75+	0

Source: FTA 2006

The FTA also recommends vibration impact thresholds to determine whether ground-borne vibration would be "excessive." According to the FTA, ground-borne vibration impact criteria for residential receptors are 72 VdB for frequent events, 75 VdB for occasional events, and 80 VdB for infrequent events. With regard to ground-borne vibration impacts on structures, the FTA states that ground-borne vibration levels in excess of 100 VdB would damage fragile buildings (FTA 2006).

b. Project Impacts and Mitigation Measures

Threshold 4: A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project

Impact N-1 CONSTRUCTION OF INDIVIDUAL PROJECTS ACCOMMODATED BY THE 2016 FMP WOULD INTERMITTENTLY GENERATE TEMPORARY CONSTRUCTION NOISE AT NEARBY NOISE-SENSITIVE RECEPTOR LOCATIONS. BECAUSE AVCCD IS NOT SUBJECT TO THE CITY'S MUNICIPAL CODE, WHICH LIMITS CONSTRUCTION TO DAYTIME HOURS, MITIGATION WOULD BE REQUIRED TO ENSURE THAT CONSTRUCTION OF PROJECTS CARRIED OUT UNDER THE 2016 FMP WOULD NOT HAVE SIGNIFICANT NEGATIVE IMPACTS ON NOISE-SENSITIVE RECEPTORS, SUCH AS PRODUCING EXCESSIVE NOISE LEVELS DURING NORMAL SLEEPING HOURS. MITIGATION MEASURE N-1 WOULD REQUIRE AVCCD TO CARRY OUT CONSTRUCTION DURING THE SAME HOURS AS REQUIRED UNDER THE CITY'S MUNICIPAL CODE AND CONTAINS OTHER MEASURES TO REDUCE CONSTRUCTION NOISE IMPACTS. IMPLEMENTATION OF THIS MEASURE WOULD REDUCE TEMPORARY NOISE IMPACTS FROM CONSTRUCTION OF PROJECTS CARRIED OUT UNDER THE 2016 FMP TO A LESS THAN SIGNIFICANT LEVEL.

Residences and other noise-sensitive land uses adjacent to potential development would be the most affected by construction noise associated with individual projects carried out under the 2016 FMP. Since there are no specific plans or time scales for individual development projects, it is not possible to determine exact noise levels, locations, or time period for construction. However, construction noise would be highest and of the longest duration in areas in and near the campus core, where most future development and redevelopment is anticipated to occur, as shown on Figure 2-4 in Section 2, Project Description. For example, the central-east and southern-east areas of campus may experience a considerable amount of construction over the life of the 2016 FMP, based on the location of proposed new facilities in Figure 2-4. In addition, the 2016 FMP envisions new facilities at the central northern area of campus, south of the existing north parking lot.

Construction noise impacts usually result when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), when construction occurs in areas immediately adjacent to noise sensitive land uses, or when the duration of construction extends over long periods of time. Major noise-generating construction activities could include demolition, site grading and excavation, paving, and landscaping. These activities could occur in areas adjacent to existing or future noise-sensitive receptors.

The highest construction noise levels would be generated during grading and building construction, with lowest levels occurring during architectural coating. Table 4.7-5 presents the noise levels (Leq) generated by common types of construction equipment used during construction (see also Appendix F). Typical hourly, average, construction-generated noise levels at a distance of 50 feet from the noise source are estimated to be 86 dBA during the demolition phase, 87 dBA during the grading phase, 89 dBA during the building construction phase, 86 dBA during the paving phase, and 74 dBA during the architectural coating phase. These noise levels drop off at a rate of about 6 dBA for each doubling of distance between the noise source and the receptor, as reflected in Table 4.7-5, which shows noise levels at the distances of 50 feet, 100 feet, 165 feet, and 350 feet from the construction equipment. In addition, although not included in the calculations, intervening structures or terrain would also attenuate noise and reduce levels.

Table 4.7-5 Unmitigated Combined Average Noise Levels (Leq) During Different Phases of Construction

		Combined Maximum Hourly Noise Level (dBA Leq)[2]			
Construction Phase	**Equipment[1]**	**50 feet**	**100 feet**	**165 feet**	**350 feet**
Demolition	Excavator Concrete Saw Dozer	86	80	76	70
Grading	Grader Excavator Dozer Tractor Backhoe	87	81	76	70
Building Construction	Crane Generator Forklift (All other equipment > 5 HP) Welder Tractor Backhoe	89	83	79	72
Paving	Paving Equipment (All other equipment > 5 HP) Paver Roller	86	80	76	69
Architectural Coating	Air Compressor	74	68	63	57

[1] Individual noise levels from the construction equipment are shown in Appendix H.

[2] Noise levels are rounded to the nearest whole Leq, dBA noise level

Source: FHWA 2006, Section 9, Table 9.1 Roadway Construction Noise Model (RCNM) Default Noise Emission Reference Levels and Usage Factors

Temporary construction noise levels associated with development facilitated by the 2016 FMP would exceed existing ambient noise at noise-sensitive receptors adjacent to potential construction sites. Ambient noise levels are 50 dBA Leq at the on-site campus library and 68 dBA Leq at an adjacent church east of the project site and single family residences north of the project site. The highest construction noise levels would be associated with the building construction phase, and would be approximately 89 dBA Leq at 50 feet from the noise source. The lowest construction noise levels would be associated with the architectural coating phase, and would be approximately 74 dBA Leq at 50 feet from the noise source. Measured ambient noise levels could increase approximately 4 dBA to 27 dBA at nearby noise-sensitive receptors during construction. Table 4.7-6 provides a summary of estimated construction noise levels minus measured ambient noise levels at nearby sensitive receptors.

Although construction noise is temporary in nature, and construction activities would generally be located at least 50 feet from sensitive receptors, construction-related noise levels would be greater than 15 dBA above ambient noise levels, and could significantly impact noise-sensitive receptors if it produced excessive noise levels during normal sleeping hours. Mitigation Measure N-1 is therefore required, in order to limit construction to daytime hours when in proximity to noise-sensitive receptors and to take other measures to reduce construction noise levels.

Table 4.7-6 Sound Level Difference between Construction Noise and Measured Ambient Noise Levels

Sensitive Receptor and Location[1]	Estimated Maximum Construction Noise Levels at Sensitive Receptors (dBA Leq)[2] [1]	Approximate Distance from Construction Activities	Leq Measured (dBA Leq)[3] [2]	Difference (dBA Leq) [1] – [2]
Church and School Sensitive Receptors, adjacent to W Avenue K (NM 1)	79	165 feet	73	6
Church Sensitive Receptor, adjacent to 30th St W (NM 2)	79	165 feet	68	9
Existing Single-Family Residences, adjacent to W Avenue J 8 (NM 3)	72	350 feet	68	4
Existing Single-Family Residences, adjacent to Champions Way	89	50 feet	68[4]	21
Adjacent to Existing Single-Family Residences west of the Project Site (NM 6)	72	350 feet	45	27

[1] The closest noise measurement location is identified, if applicable, as "(NM X)"
[2] See Table 4.7-5 for estimated construction noise levels at sensitive receptor distances
[3] See Table 4.7-3 for ambient noise measurement results
[4] Assumed existing noise level, based on noise levels measured at NM 2 and NM 3

Mitigation Measures

N-1 Construction-Related Noise Reduction Measures

The following measures shall be implemented during construction of all phases of the 2016 FMP:

a. **Mufflers.** During all project site excavation and grading, all construction equipment, fixed or mobile, shall be operated with closed engine doors and shall be equipped with properly operating and maintained mufflers consistent with manufacturers' standards.

b. **Mobile and Stationary Equipment.** All stationary construction equipment shall be placed so that emitted noise is directed away from the nearest sensitive receptors. All mobile and stationary internal-combustion-powered equipment and machinery shall also be equipped with suitable exhaust and air-intake silencers in proper working order.

c. **Equipment Staging Areas.** Equipment staging shall be located in areas that will create the greatest distance feasible between construction-related noise sources and noise-sensitive receptors.

d. **Construction Routes.** All construction-related traffic shall be routed away from residential areas, to the extent feasible.

e. **Temporary Noise Barriers.** If construction activity takes place within 100 feet of any off-campus noise-sensitive receptors such as neighboring residences; or any on-campus noise-sensitive receptors such as classrooms, physical education facilities, performing arts facilities; a temporary barrier no less than 6 feet high made of wood or other similar materials shall be constructed to limit the amount of noise affecting the sensitive receptor. However, if the sensitive receptor is not in use during construction, no temporary barrier shall be required**.**

f. **Construction Timing.** Per Section 8.24.040 of the LMC, construction shall be limited to the hours of 7:00 a.m. to 8:00 p.m., Monday through Saturday when construction occurs within 500 feet of an occupied dwelling, apartment, hotel, mobile home or other place of residence.

Significance After Mitigation

Mitigation Measures N-1 would reduce noise from construction activity associated with implementation of the proposed 2016 FMP, and would prohibit them during normal sleeping hours when in proximity to noise-sensitive receptors. Therefore, construction noise impacts would be less than significant with mitigation incorporated.

Threshold 2:	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels

Impact N-2 DEVELOPMENT ACCOMMODATED BY THE 2016 FMP WOULD GENERATE INTERMITTENT VIBRATION LEVELS DURING INDIVIDUAL CONSTRUCTION ACTIVITIES. HOWEVER, VIBRATION LEVELS WOULD NOT EXCEED FTA STANDARDS DURING CONSTRUCTION OR OPERATION OF PROJECTS CARRIED OUT UNDER THE PROPOSED 2016 FMP. THIS IMPACT IS LESS THAN SIGNIFICANT WITH INCORPORATED MITIGATION.

Vibration from construction activities could have an impact on nearby vibration-sensitive land uses. The FTA *Transit Noise and Vibration Impact Assessment* (2006) sets a 75 VdB threshold for occasional events affecting residences and buildings where people normally sleep and a 100 VdB threshold for minor cosmetic damage to fragile buildings (vibration levels below 100 VdB produce no damage to buildings). The primary sources of man-made vibration during construction are blasting, grading, pavement breaking and demolition. The primary vibratory source during

construction on the project site would likely be large bulldozers used to demolish existing structures and large trucks loaded with supplies and debris. Table 4.7-7 identifies vibration velocity levels for the common types of equipment that could be used on the project site during construction. As shown in Table 4.7-7, typical approximate vibration levels from operation of bulldozers, loaded trucks, and jackhammers, are 48 to 78 VdB at a distance of 50 feet. As such, existing and future residences located within approximately 50 feet of potential future construction carried out under the 2016 FMP may intermittently be disturbed by vibration noise. However, vibration levels would not exceed 100 VdB, which can cause minor damage in fragile buildings.

Table 4.7-7 Vibration Source Levels for Construction Equipment

	Approximate Vibration Decibels (VdB) at Distance from Construction			
Equipment	**50 Feet**	**100 Feet**	**165 Feet**	**350 Feet**
Large Bulldozer	78	69	62	53
Loaded Truck	77	68	61	51
Jackhammer	70	61	54	44
Small Bulldozer	48	39	33	23

Source: FTA 2006

As required under Mitigation Measure N-1(f), construction would be limited to the hours of 7:00 a.m. to 8:00 p.m., Monday through Saturday when in proximity to noise-sensitive receptors. These restrictions on hours of construction would keep vibration from any such construction activities exceeding 72 VdB at the nearest sensitive receptor from interfering with people's sleep. In addition, construction would not exceed the 100 VdB threshold and damage fragile buildings.

Mitigation Measures

Implementation of Mitigation Measure N-1 (f) would reduce vibration-related impacts to less than significant levels by limiting construction hours outside of normal sleeping hours; additional mitigation is not required.

Significance After Mitigation

Mitigation Measure N-1 (f) would prevent construction activity associated with implementation of the proposed 2016 FMP from producing excessive vibration during normal sleeping hours when in proximity to vibration-sensitive receptors. Therefore, construction vibration impacts would be less than significant with mitigation incorporated.

Threshold 1:	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
Threshold 3:	A substantial permanent increase in ambient noise levels above those existing prior to implementation of the project

Impact N-3 DEVELOPMENT ACCOMMODATED BY THE 2016 FMP WOULD INCREMENTALLY INCREASE TRAFFIC ALONG ROADWAYS IN AND AROUND THE PROJECT SITE, THUS EXPOSING EXISTING LAND USES TO INCREASED NOISE. HOWEVER, INCREASES IN TRAFFIC WOULD NOT EXPOSE NOISE-SENSITIVE RECEPTORS TO NOISE LEVELS EXCEEDING APPLICABLE STANDARDS. IMPACTS RELATED TO OPERATIONAL TRAFFIC NOISE WOULD BE LESS THAN SIGNIFICANT.

The exposure of existing residences to roadway noise was analyzed based on Existing (2018) plus Project traffic levels from the TIS prepared for the 2016 FMP by Fehr & Peers, dated July 2018 (Appendix B). Based on the zip codes of currently enrolled students, existing trip distribution from the project site is assumed at the following percentages in each direction: 10 percent trips north, 5 percent trips west, 50 percent trips south, and 35 percent trips west (see Section 4.8, *Transportation and Traffic*, for further information) (Fehr & Peers 2018).

Roadway noise was modeled using the HUD DNL Calculator based on AM Peak Hour traffic volumes multiplied by 10 to equate to average daily traffic (ADT), an accepted industry standard. Traffic volumes along roadways bordering the project site (and also corresponding to the noise measurement locations shown in Figure 4.7-2) are provided in Table 4.7-8 (Fehr & Peers 2018). HUD DNL utilizes the Ldn/DNL method, which adds 10 dBA to actual nighttime (10:00 p.m. to 7:00 a.m.) noise levels to account for the greater sensitivity to noise during that time period.

Table 4.7-8 Daily Existing and Existing plus Project Peak Hour Traffic Volumes Passing Noise Measurement Locations

Roadway (Closest Noise Measurement Location)	Traffic Volumes			
	Existing (2018) Peak Hour[1]	Existing (2018) ADT[2]	Existing (2018) plus Project Peak Hour[1]	Existing (2018) plus Project ADT[2]
W Avenue K, between 32nd Street W and 30th Street W (NM 1)	1,933	19,330	2,046	20,460
30th Street W, between W Avenue K and W Avenue J 8 (NM 2 and NM 5)	1,766	17,660	1,920	19,200
W Avenue J 8 , between 35th Street W and 30th Street W (NM 3)	1,208	12,080	1,251	12,510
West of 35th Street W, between W Avenue K and W Avenue J 8 (NM 6)	118	1,180	118	1,180

Notes: ADT = average daily traffic

[1] The highest and/or nearest vehicle count for the same roadway where the noise measurement was taken was used for existing and project-related traffic

[2] AM Peak Hour traffic volumes were multiplied by 10 to equate to ADT

Source: Fehr & Peers 2018

Because adjacent roadways are defined as arterial roads (except for 35th Street W, which is considered a collector street), this analysis assumes default traffic volumes consisting of 95 percent cars, 3 percent medium duty trucks, and 2 percent heavy duty trucks. The assumed traffic volumes for 35th Street W is 97 percent cars, 2 percent medium duty trucks, and 1 percent heavy duty trucks. Based on these assumptions, ADT for Existing and Existing plus Project would include the following for each roadway analyzed:

- **Existing**
  - 30th Street W: 16,777 passenger cars, 530 medium duty trucks, and 353 heavy duty trucks
  - W Avenue J 8: 11,476 passenger cars, 362 medium duty trucks, and 242 heavy duty trucks
  - W Avenue K: 18,363 passenger cars, 580 medium duty trucks, and 353 heavy duty trucks
  - 35th Street W: 1,144 passenger cars, 24 medium duty trucks, and 12 heavy duty trucks
- **Existing plus Project**
  - 30th Street W: 18,240 passenger cars, 576 medium duty trucks, and 384 heavy duty trucks
  - W Avenue J 8: 11,885 passenger cars, 375 medium duty trucks, and 250 heavy duty trucks
  - W Avenue K: 19,437 passenger cars, 614 medium duty trucks, and 409 heavy duty trucks
  - 35th Street W: 1,144 passenger cars, 24 medium duty trucks, and 12 heavy duty trucks

The HUD default of 15 percent nighttime trips, and an assumed speed limit of 50 miles per hour (mph) for 30th Street W, 45 mph for W Avenue J 8, 50 mph for W Avenue K, and 40 mph for 35th Street W, was used. To calibrate the HUD DNL model to the on-site noise environment, these results were compared to the on-site noise measurements taken by Rincon Consultants on June 20, 2018, as summarized in Table 4.7-9.

Table 4.7-9 HUD DNL Calculator Estimates Comparison to Measured Noise Levels for Existing and Existing plus Traffic Levels

Roadway (Closest Noise Measurement Location)	HUD DNL Calculator Estimates (dBA, Ldn)[1] [1]	Measured Noise Levels (dBA)[2] [2]	Difference (dBA) [1 – 2]
Existing Traffic Levels			
W Avenue K, between 32nd Street W and 30th Street W (NM 1)	76	73	3
30th Street W, between W Avenue K and W Avenue J 8 (NM 2 and NM 5)	73/73	68/65	5/8
W Avenue J 8 , between 35th Street W and 30th Street W (NM 3)	73	68	5
West of 35th Street W, between W Avenue K and W Avenue J 8 (NM 6)	43	45	2
Existing plus Project Traffic Levels			
W Avenue K, between 32nd Street W and 30th Street W (NM 1)	76	73	3
30th Street W, between W Avenue K and W Avenue J 8 (NM 2 and NM 5)	73/73	68/65	5/8
W Avenue J 8 , between 35th Street W and 30th Street W (NM 3)	73	68	5
West of 35th Street W, between W Avenue K and W Avenue J 8 (NM 6)	43	45	2

Notes: HUD = United States Department of Housing and Development, DNL = Day/Night Level, ADT = average daily traffic

[1]See Table 4.7-8 for existing ADT

[2] See Table 4.7-3 for measured noise levels, taken by Rincon on June 20, 2018

The modeled noise levels are approximately 2 dBA to 8 dBA above the measured noise level. These differences are due to lower traffic levels counted during noise measurements (see Appendix E). For example, Noise Measurement Location 5 had 67 passenger vehicles and no medium or heavy duty trucks during the noise measurement. Multiplying the 67 vehicles by 4 to equate to an estimated hour level of traffic (268 vehicles), and multiplying again by 10 to equate to ADT, equals 2,680 vehicles. The TIS estimated 1,766 AM Peak Hour vehicles. Multiplied by 10, this would equal 17,660 ADT). Because approximately 85 percent fewer vehicles were counted during the noise measurement, the measured noise levels are not representative of the HUD DNL Calculator modeled noise levels, based on the TIS. The HUD DNL Calculator was used on the Existing plus Project traffic counts summarized above using the same defaults and assumptions.

The increase from Existing traffic-generated noise levels to Existing plus Project traffic-generated noise levels is summarized in Table 4.7-10.

Table 4.7-10 Existing and Existing Plus Project Modeled Noise Levels (dBA Ldn)

Roadway (Closest Noise Measurement Location)	Traffic-Generated Noise Levels (dBA)		Difference	Allowable Noise Exposure Increase[1]	Threshold Exceeded?
	Existing (2018)	Existing (2018) plus Project			
W Avenue K, between 32nd Street W and 30th Street W (NM 1)	75.7	75.9	0.2	0	No[2]
30th Street W, between W Avenue K and W Avenue J 8 (NM 2 and NM 5)	72.5	72.8	0.3	1	No
W Avenue J 8 , between 35th Street W and 30th Street W (NM 3)	72.6	72.7	0.1	1	No
West of 35th Street W, between W Avenue K and W Avenue J 8 (NM 6)	43.2	43.2	0.0	7	No

[1] See Table 4.7-4 above

[2] Although there is a 0.2 dBA dBA, Ldn increase, it would not be a perceivable noise level increase

Source: Fehr & Peers 2018, FTA 2006, HUD 2018

As shown above, traffic generated by implementation of the 2016 FMP would create no detectable noise level increase compared to existing traffic noise. The 2016 FMP would therefore have a less than significant impact from increasing traffic noise at existing receptors.

Mitigation Measures

No mitigation required.

Threshold 1:	Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
Threshold 3:	Result in a substantial permanent increase in ambient noise levels above levels existing without the project

Impact N-4 DEVELOPMENT ACCOMMODATED BY THE 2016 FMP WOULD INCREASE ON-SITE OPERATIONAL NOISE LEVELS IN AND AROUND THE PROJECT SITE, THUS EXPOSING EXISTING AND FUTURE LAND USES TO INCREASED NOISE. THE OPERATION OF AN INCREASED NUMBER OF AVC FACILITIES, INCLUDING THE STUDENT CENTER, ACADEMIC COMMONS, INSTRUCTOR BUILDINGS, AND OTHER STATIONARY SOURCES (E.G., HVAC EQUIPMENT), WOULD NOT GENERATE EXCESSIVE NOISE LEVELS AT RESIDENTIAL RECEPTORS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Operation of new on campus development proposed by the 2016 FMP (academic and other institutional facilities) would generate noise. Sources of noise could include heating/air conditioning (HVAC) systems, ground-mounted mechanical equipment, conversations, and other activities generally associated with facilities on a college campus. Parking lots can also generate noise from cars driving, sweepers, doors slamming, and engines starting up. Table 4.7-11 shows major operational activity that would occur adjacent to sensitive residential receptors to consider uses with nighttime noise restrictions. Fifty feet would be the approximate lowest distance of a sensitive receptor to a new facility, as shown in Table 4.7-11.

Table 4.7-11 Distance of New Operational Activity to Nearest Sensitive Receptor

Building	Phase	Approximate Distance (feet) to Nearest Receptor	Direction and Receptor
Tennis Courts	1A	50	North, Single-Family Residences
Campus Security	1A	250	South, Church
CTE Instruction	1B	400	West, Single-Family Residences
CSUB	2	550	North, Single-Family Residences
Applied Arts	4	500	East, Church

Source: AVC 2018

Maximum noise levels discussed below represent a worst-case scenario of noise impacts during project operation. In the discussion below, these maximum operational noise levels are compared to the City's noise/land use compatibility standards shown in Table 4.7-2, but AVCCD is not subject to these standards or the City's Municipal Code. The comparison is made solely to characterize potential operational noise impacts at off-site noise-sensitive receptors, since noise levels within City standards may safely be assumed to protect against exposure to excessive noise levels.

Rooftop Mechanical Equipment

Newly-constructed and renovated buildings on the project site could have additional rooftop heating, ventilating, and air conditioning (HVAC) mechanical equipment. Rooftop HVAC units generate noise levels of approximately 59 dBA at 75 feet. Since the shortest distance between a sensitive receptor and new development using HVAC mechanical equipment throughout all phases of the 2016 FMP would be approximately 250 feet, noise levels attributable to rooftop mechanical

equipment would be lower than 59 dBA at the nearest sensitive receptor, which is below the City's exterior noise level standard of 65 dBA for residential uses, as shown in Table 4.7-2.

Ground-Mounted Mechanical Equipment

While no ground-mounted mechanical equipment, including uninterruptible power sources (UPS) are specifically called for any under the FMP, this type of equipment could be used on the project site in the future. A UPS differs from an emergency power system or standby generator in that it would provide near-instantaneous back-up power to protect against the loss of data stored on hardware in the event that the primary electrical power supply fails (Pacific Gas and Electric Company 2000). Most UPS systems generate noise levels between 28 and 38 dBA at a distance of 75 feet from the source, and between 32 and 42 dBA at a distance of 50 feet, which would be quieter than the normally acceptable range shown in Table 4.7-2 for residential areas. Furthermore, uninterruptible power supplies would rarely be used; only during temporary power outages and periodic tests. Since the shortest distance between a sensitive receptor and new development throughout all phases of the FMP would be approximately 50 feet, noise levels attributable to uninterruptible power supplies would not exceed the City's exterior noise level standard of 65 dBA for sensitive receptors.

Conversations

Outdoor events and informal conversations within open space areas on the project site would contribute to ambient noise. Open space improvements include, but are not limited to, the Student Plaza, a courtyard south of the proposed Instructor Building 1, a Garden Ribbon north of Instructor Building 2, a courtyard at the Arts Complex, a courtyard at the central area of the Instructor Building 3, and outdoor learning areas east of the CTE Instruction building. According to the Occupational Safety and Health Administration, normal conversations range from 50 to 60 dBA (Occupational Safety and Health Administration 2011). Noise generated by conversations at new outdoor facilities accommodated by the 2016 FMP would be consistent with the existing campus environment and would not substantially affect ambient noise levels.

Tennis Courts

According to a study completed by the Technical University of Munich (1999), tennis shots can range from 46.1 to 54.8 dBA at a distance of approximately 10 feet, depending on being "soft" and "hard" shots (Filippou 1999). Noise from these tennis courts, at a distance of 50 feet would attenuate to approximately 32.1 to 40.8 dBA (6 dBA standard attenuation rate) to the nearest noise-sensitive receptor. These noise levels would be consistent with the existing campus environment and would not substantially affect ambient noise levels on the project site or at the closest noise-sensitive receptors.

Combined Operational Noise

All of the operational noise sources discussed above are already present on the project site, and the 2016 FMP would maintain the current campus development footprint. On-site operational noise from implementation of the 2016 FMP would therefore not result in a substantial permanent increase in ambient noise levels above levels existing without the project. Additionally, although AVCCD is not subject to standards from the City's General Plan or Municipal Code, on-site operational noise associated with the 2016 FMP would not exceed the City's noise/land use

compatibility standards. For these reasons, operational noise impacts of the 2016 FMP would be less than significant.

Mitigation Measures

Operational noise impacts of the 2016 would be less than significant. Therefore, mitigation is not required.

c. Cumulative Impacts

As discussed in Section 3, *Environmental Setting*, cumulative development in Lancaster, including development called for under the 2016 FMP, would add college facilities, non-college housing, and other non-residential development in the City. This cumulative development would increase the amount and density of development in the City, which would incrementally increase noise.

As discussed in Section 4.8, *Transportation and Traffic*, development facilitated by the 2016 FMP would generate an estimated increase of 3,236 ADT in addition to ambient traffic volumes. These trips would be distributed on multiple roadways in the vicinity of the project site. Table 4.7-12 shows the percentage difference in traffic during AM and PM peak hours when comparing future (2030) traffic volumes with and without project buildout (addition of 2016 FMP-related traffic or "Project Traffic") on roadways adjacent to sensitive receptors, including 30th Street W, W Avenue J 8, W Avenue K, and 35th Street W. Traffic volumes for these roadways were calculated by adding turning volumes at intersections 2, 5, and 7 shown in figures of Appendix A2 and Appendix A5 of the TIS (see Appendix B).

Table 4.7-12 Traffic Volumes on Local Roadways during AM and PM Peak Hours

Roadway	Future Year (2030) without Project Buildout	Future Year (2030) with Project Buildout	Percentage Difference in Traffic Volumes
AM Peak Hour			
30th Street W	1,877	2,031	8.2
W Avenue J 8	1,495	1,538	2.9
W Avenue K	2,032	2,145	5.6
35th Street W	147	147	0
PM Peak Hour			
30th Street W	1,705	1,860	9.1
W Avenue J 8	1,330	1,373	3.2
W Avenue K	1,625	1,726	6.2
35th Street W	91	91	0

Source: Fehr & Peers 2018

As shown in Table 4.7-12, development accommodated by the 2016 FMP in combination with local and regional growth, including the projects listed in Section 3.3, Cumulative Development, would generate a maximum increase of 9.1 percent in traffic volume along roadways with sensitive receptors. The amount of traffic generated by the 2016 FMP would fall below levels that would produce a perceptible increase in roadway noise levels of 3 dBA or more (double the traffic). Therefore, impacts related to operational traffic noise would be less than significant.

Other noise impacts association with operation of development called for under the 2016 FMP would be less than significant without mitigation, or be less than significant after mitigation.

Construction and non-traffic operational noise from off-site development would be subject to the City's standards, including Section 8.24.040 of the LMC, which limits construction to the days and hours of 7:00 a.m. to 8:00 p.m., Monday through Saturday. Therefore, cumulative noise impacts from implementation of the 2016 FMP and other existing and future development would be less than significant.

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4.8 Transportation and Traffic

This section analyzes the potential for the 2016 FMP to cause significant impacts to existing traffic and transportation facilities. The analysis in this section is based on a *Transportation Impact Study* (TIS) prepared for the 2016 FMP by Fehr & Peers in July 2018. The full study is provided in Appendix B of this EIR.

4.8.1 Setting

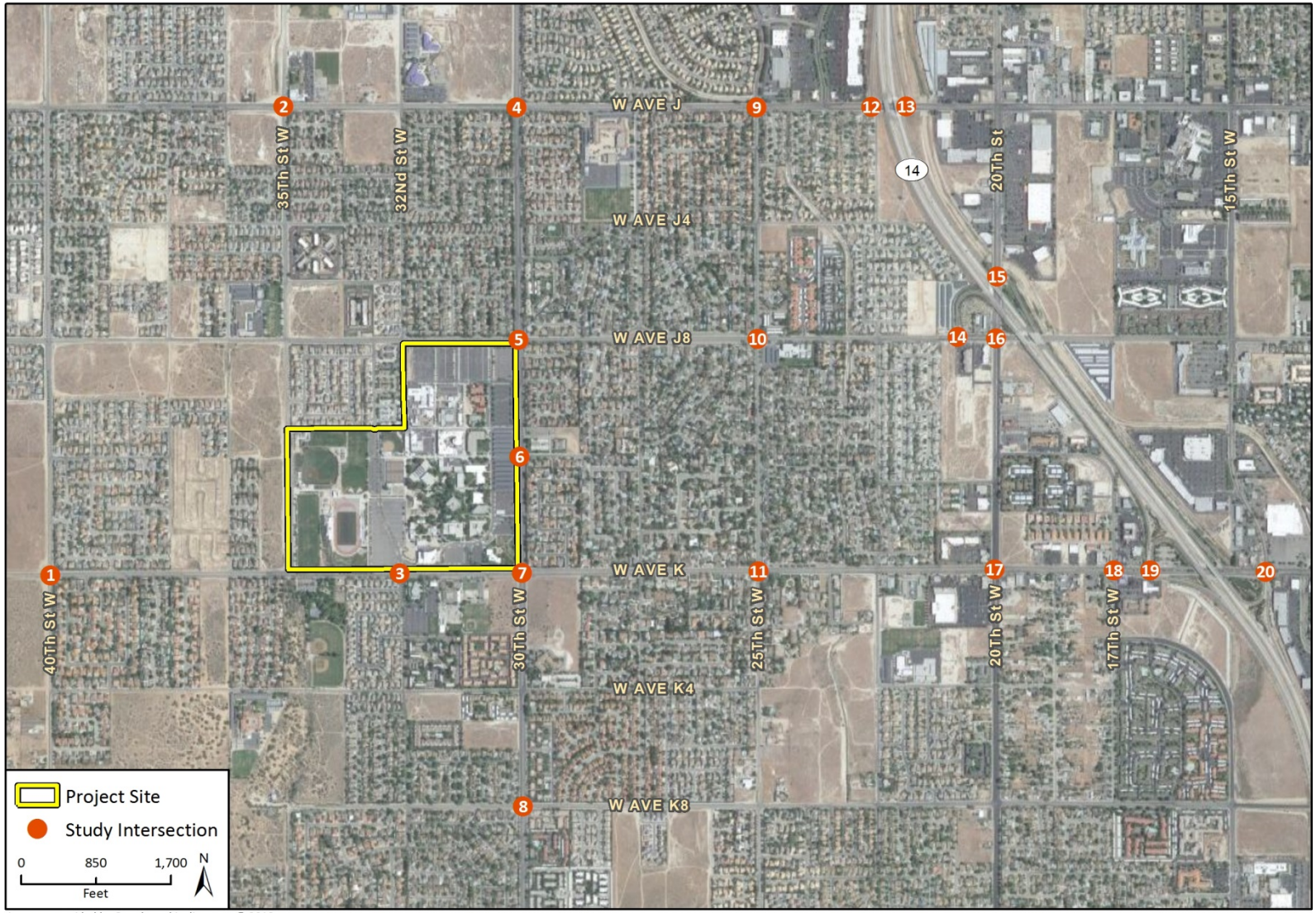
a. Existing Street System

The project site is the Lancaster campus of Antelope Valley College (AVC), which is located at 3041 West Avenue K in the City of Lancaster, Los Angeles County, in the block of land bounded roughly by West Avenue K on the south, 35th Street West on the west, West Avenue J-8 on the north, and 30th Street West on the east. For this traffic impact analysis, eighteen study intersections in the City of Lancaster were defined for the overall project study area (shown in Figure 4.8-1):

1. 40th Street & West Avenue K (signalized)
2. 35th Street & West Avenue J-8 (all-way stop-controlled)
3. 32nd Street West/Campus Driveway & West Avenue K (signalized)
4. 30th Street West & West Avenue J (signalized)
5. 30th Street West & West Avenue J-8 (signalized)
6. 30th Street West & West Avenue J-12/New Driveway (currently two-stop-controlled, to be signalized with the project)
7. 30th Street West & West Avenue K (signalized)
8. 30th Street West & West Avenue K-8 (signalized)
9. 25th Street West & West Avenue J (signalized)
10. 25th Street West & West Avenue J-8 (signalized)
11. 25th Street West & West Avenue K (signalized)
12. SR-14 Southbound Off Ramp & West Avenue J (signalized)
13. 20th Street West & SR-14 Northbound Off Ramp (signalized)
14. 20th Street West & West Avenue J-8 (signalized)
15. 20th Street West & West Avenue K (signalized)
16. 17th Street West & West Avenue K (signalized)
17. SR-14 Southbound Ramps & West Avenue K (signalized)
18. 15th Street/SR-14 Northbound Ramps & West Avenue K (signalized)

These intersections were evaluated for the morning (7 a.m. to 10 a.m.), midday (12 p.m. to 2 p.m.), and evening (4 p.m. to 7 p.m.) peak periods. Most roadways in the project study area are local roadways. The following describes the major roadways in the study area.

Figure 4.8-1 Studied Intersections



Imagery provided by Google and its licensors © 2018.
Additional data provided by Fehr & Peers 2018.

Fig 4.8-1 Study Intersections

Freeways

State Route (SR) 14

State Route 14 runs in the north/south direction, east of the project site, through the City of Lancaster. In the vicinity of the project site, the freeway provides three lanes in each direction. Ramps are provided at West Avenue J, West Avenue J-8, and West Avenue K.

North/South Streets

40th Street West

40th Street West runs in the north/south direction, west of the project site. 40th Street West has two travel lanes in the northbound direction and one travel lane in the southbound direction. Parking is not permitted on either side of the street in the study area. The posted speed limit is 50 miles per hour (mph).

35th Street West

35th Street West has one travel lane in each direction with left-turn pockets present at major intersections south of West Avenue J-6 and one bicycle lane in each direction north of West Avenue J-6. Parking is not permitted on either side of the street within the study area. The posted speed limit is 40 mph.

30th Street West

30th Street West has two travel lanes and one bicycle lane in each direction and a center turn lane south of West Avenue J-12 within the study area. Street parking is available on the east side of the street, south of West Avenue K-4 and north of West Avenue J-4, as well as on the west side of the street south of West Avenue K. The posted speed limit is 50 mph.

25th Street West

25th Street West runs in the north/south direction, east of the project site. 25th street West has two travel lanes and one bicycle lane in each direction, with a center turn lane, within the study area. Parking is not permitted on either side of the street. The posted speed limit is 45 mph.

20th Street West

20th Street West runs in the north/south direction, east of the project site. 20th Street West has two travel lanes and one bicycle lane in each direction, with a center turn lane south of West Avenue J-12, within the study area. There is a raised median north of West Avenue J-12. 20th Street West has three travel lanes in each direction north of West Avenue J-8. Parking is not permitted on either side of the street. The posted speed limit is 45 mph.

15th Street West

15th Street West runs in the north/south direction, east of the project site. 15th Street West has two travel lanes in each direction with a raised median on portions of the roadway. Street parking is not permitted on either side of the street. The posted speed limit is 40 mph.

East/West Streets

West Avenue J

West Avenue J runs in the east/west direction, north of the project site. West Avenue J has three travel lanes in each direction with left-turn pockets at major intersections and a raised median in the study area. Parking is not permitted in either direction. The posted speed limit is 50 mph west of 25th Street West and 45 mph east of 25th Street West.

West Avenue J-8

West Avenue J-8 runs in the east/west direction adjacent to the project site. West Avenue J-8 has two travel lanes and one bicycle lane in each direction, with a center turn lane within the study area. Parking is not permitted in either direction in the study area. The posted speed limit is 45 mph.

West Avenue K

West Avenue K runs in the east/west direction adjacent to the project site. West Avenue K has two travel lanes in each direction with a center turn-lane and a raised median on portions of the roadway west of 32nd Street West and east of 22nd Street West. West Avenue K provides three travel lanes west of 27th Street West and east of 22nd Street West. Parking is not permitted in both directions in the project study area. The posted speed limit is 50 mph.

West Avenue K-8

West Avenue K-8 runs in the east/west direction south of project site. West Avenue K-8 has two travels lanes and one bicycle lane in each direction, with a center turn lane in the study area. Parking is not permitted in either direction in the study area. The posted speed limit is 45 mph.

b. Existing Public Transit

The project site is served by six local and regional bus lines. The campus is directly served by Antelope Valley Transit Authority (AVTA) Route 7 (north-south service from Palmdale Transportation center to Lancaster City Hall), Route 9 (east-west service between Quartz Hill and Lancaster City Park via Avenue H), Route 11 (east-west service via Avenue I), Route 12 (east-west service along Avenue J), Kern Transit Route 100 (east-west service between Bakersfield and Lancaster), and Route 250 (north-south service connecting Mojave to Ridgecrest).

Bus stops, as well as ADA accessible sidewalks and curb ramps which provide access to the bus stops, exist at the following intersections:

- 30th Street West and West Avenue J-8 (southbound)
- 30th Street West, between West Avenue J-9 and West Avenue J-12 (southbound)
- 30th Street West and West Avenue J-12 (northbound)
- 39th Street West and West Avenue K (northbound)
- 30th Street West and West Avenue K (eastbound)

c. Existing Bicycle and Pedestrian Facilities

The study area has a limited existing bikeway network that includes Class II bicycle lanes. Bicycle lanes are present on the following north-south streets in the study area:

- 40th Street West
- 35th Street West
- 30th Street West

West Avenue J-8 is the only east/west street in the study area with a bicycle facility. The study area is served by relatively robust pedestrian facilities, including 8-10-foot wide sidewalks. There is no sidewalk currently present along West Avenue K-8 in the study area.

d. Existing Traffic Volumes and Level of Service

Existing Levels of Service (2018)

Existing year 2018 traffic volumes were analyzed using the methodologies described in Section 4.8.1.1(a) to determine the existing operating conditions at the study intersections. Table 4.8-1 summarizes the results of the analysis of the existing weekday morning and evening peak hour V/C ratio and corresponding LOS at each of the analyzed intersections. Existing LOS was analyzed with the current lane configurations observed in the field.

Of the 18 study intersections, including two unsignalized intersections, all operate at LOS D or better during both peak hour periods. Detailed LOS analysis sheets for the project are provided in Appendix C of the TIS, which is included as Appendix B.

e. Regulatory Setting

This section discusses applicable federal, state, and local laws, ordinances, regulations, and standards governing transportation and traffic, which must be adhered to before and during implementation of the 2016 FMP.

Americans with Disabilities Act

Title III of the ADA (codified in Title 42 of the U.S. Code [USC]), prohibits discrimination on the basis of disability in places of public accommodation (i.e., businesses and non-profit agencies that serve the public) and commercial facilities (i.e., other businesses). This regulation includes Appendix A to Part 36, Standards for Accessible Design, which establishes minimum standards for ensuring accessibility when designing and constructing a new facility or altering an existing facility. These accessibility requirements also apply to transportation facilities and their components (including sidewalks, crosswalks, etc.) and the interface between these facilities and the land uses they serve (such as accessibility between sidewalk and on-site pedestrian circulation features like walkways).

State Senate Bill (SB) 743

California's SB 743 will eventually alter how transportation and traffic impacts are analyzed under State CEQA Guidelines. SB 743 requires the Office of Planning and Research to amend the *CEQA Guidelines* to provide an alternative to LOS as the metric for evaluating transportation impacts. However, because amendments required by SB 743 have not been adopted, this EIR was prepared based on the existing *CEQA Guidelines* and therefore uses LOS criteria to evaluate potential transportation impacts.

Table 4.8-1 Existing (2018) Intersection LOS Analysis

Intersection	Type	Peak Hour	Existing (2018) V/C or Delay	Existing (2018) LOS
1. 40th Street W & W Avenue K	Signalized	AM	0.572	A
		PM	0.558	A
2. 35th Street W & W Avenue J-8	All-Way Stop	AM	28.2	D
		PM	13.2	B
3. 32nd Street W/Driveway & W Avenue K	Signalized	AM	0.501	A
		PM	0.376	A
4. 30th Street W & W Avenue J	Signalized	AM	0.671	B
		PM	0.472	A
5. 30th Street W & W Avenue J-8	Signalized	AM	0.635	B
		PM	0.514	A
6. 30th Street W & W Avenue J-12/New Driveway[1]	All Way Stop Controlled	AM	20.9	C
		PM	13.8	B
7. 30th Street W & W Avenue K	Signalized	AM	0.638	B
		PM	0.490	A
8. 30th Street W & W Avenue K-8	Signalized	AM	0.568	A
		PM	0.447	A
9. 25th Street W & W Avenue J	Signalized	AM	0.466	A
		PM	0.500	A
10. 25th Street W & W Avenue J-8	Signalized	AM	0.576	A
		PM	0.528	A
11. 25th Street W & W Avenue K	Signalized	AM	0.551	A
		PM	0.472	A
12. SR 14 Southbound Off-Ramp & W Avenue J	Signalized	AM	0.430	A
		PM	0.483	A
13. 20th Street W & SR 14 Northbound Off-Ramp	Signalized	AM	0.559	A
		PM	0.586	A
14. 20th Street W & W Avenue J-8	Signalized	AM	0.481	A
		PM	0.649	B
15. 20th Street W & W Avenue K	Signalized	AM	0.495	A
		PM	0.541	A
16. 17th Street W & W Avenue K	Signalized	AM	0.517	A
		PM	0.558	A
17. SR-14 Southbound Ramps & W Avenue K	Signalized	AM	0.488	A
		PM	0.593	A
18. 15th Street/SR 14 Northbound Ramps & W Avenue K	Signalized	AM	0.673	B
		PM	0.837	D

[1]This intersection is currently stop-controlled, but it is planned for signalization in the future

Source: Table 3 from the TIS – Fehr & Peers 2018 (See Appendix B)

4.8.2 Impact Analysis

a. Methodology and Significance Thresholds

The analysis of transportation system impacts employs a variety of methodologies, based on empirical research conducted by the Transportation Research Board and other authorities. The methodologies, analysis scenarios, and significance thresholds employed for the transportation and traffic impact analyses are described in the subsections below.

Methodology

Level of Service Methodology

The City of Lancaster utilizes the Intersection Capacity Utilization (ICU) methodology to determine LOS at signalized intersections. The ICU method estimates the V/C ratio for an intersection based on the individual V/C ratios for the conflicting traffic movements. The ICU value represents the percent signal green time of capacity of the intersection movements. The ICU methodology assumes uniform traffic distribution per intersection approach lane and optimal signal timing. The overall intersection V/C ratio is subsequently assigned an LOS value to describe intersection operations, as shown in Table 4.8-2. LOS ranges from LOS A (free flow) to LOS F (jammed condition).

Table 4.8-2 LOS Definitions for Signalized Intersections – ICU Methodology

Level of Service	Volume/Capacity	Definition
A	0.000 - 0.600	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.
B	>0.600 - 0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	>0.700 - 0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	>0.800 - 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	>0.900 - 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. Tremendous delays with continuously increasing queue lengths.

Source: Transportation Impact Study, Fehr & Peers 2018 (Table 1). As derived from Transportation Research Circular No. 212, Interim Materials on Highway Capacity, Transportation Research Board, 1980

Unsignalized intersections in Lancaster are analyzed using the Highway Capacity Manual (HCM) methodology to determine traffic operations. The 2010 HCM analysis methodology describes the operations of an intersection using a range of LOS from LOS A (free-flow conditions) to LOS F (severely congested conditions), based on a range of stopped delay in seconds experienced per vehicle, shown in Table 4.8-3.

Table 4.8-3 LOS Definitions for Unsignalized Intersections – HCM Methodology

Level of Service	Average Control Delay (seconds/vehicle)	Definition
A	<10.0	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.
B	>20.0 and <15.0	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	>15.0 and <25.0	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	>25.0 and <35.0	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	>35.0 and <50.0	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	>50.0	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

Source: Transportation Impact Study, Fehr & Peers 2018 (Table 2). As derived from the Highway Capacity Manual, Transportation Research Board, 2010

Congestion Management Program (CMP)

ROADWAYS AND FREEWAYS

In Los Angeles County, ICU intersection analysis methodology is used to analyze CMP operations. In June 1990, the passage of the Proposition 111 gas tax increase required urbanized areas in the state with a population of 50,000 or more to adopt a CMP. Metro is the Congestion Management Agency for the County. Metro has been charged with the development, monitoring, and biennial updating of Los Angeles County's CMP, which is intended to address the impact of local growth on the regional transportation system. The CMP Highway System includes specific roadways, including state highways, and CMP arterial monitoring locations/intersections. The CMP is also the vehicle for proposing transportation projects that are eligible to compete for the state gas tax funds.

New projects in the City of Lancaster must comply with the Los Angeles County CMP. The CMP guidelines require that the first issue to be addressed is the determination of the geographic scope of the study area. The criteria for determining the study area for CMP arterial monitoring intersections and for freeway monitoring locations are:

- All CMP arterial monitoring intersections where the proposed project will add 50 or more trips during either the AM or PM peak hours of adjacent street traffic.
- All CMP mainline freeway monitoring locations where the proposed project will add 150 or more trips, in either direction, during either the AM or PM peak hours.

TRANSIT

Potential transit related person-trips generated by the 2016 FMP were estimated in the TIS. Appendix D.8.4 of the 2010 CMP provides a methodology for estimating the number of transit trips

expected to result from a proposed project based on the projected number of vehicle trips. This methodology assumes an average vehicle ridership (AVR) factor of 1.4 in order to estimate the number of person trips to and from the project and then provides guidance regarding the percentage of person trips assigned to public transit depending on the type of use (commercial/other versus residential) and the proximity to transit services. Appendix D.8.4 of the 2010 CMP recommends summarizing the fixed-route local bus services within ¼ mile of the project site and express bus routes and rail service within two miles of the project site.

Traffic Analysis Scenarios

The Transportation Impact Study assumes that the 2016 FMP would be completed by the year 2030 and is based on the forecast increase in enrollment at the college through that year. The following traffic scenarios were developed and analyzed as part of the study.

- **Existing Conditions.** The analysis of existing traffic conditions is intended to provide a baseline for the study. The existing conditions analysis includes a description of the transportation system serving the project site, existing traffic volumes, and an assessment of the operating conditions at the study analysis locations.
- **Existing with Forecast Enrollment Increase Conditions.** This traffic scenario provides projected traffic volumes and an assessment of operating conditions under existing conditions with the addition of traffic generated by the forecast enrollment increase at the college. The impacts of this traffic on existing traffic operating conditions were then identified.
- **Future without Forecast Enrollment Increase Conditions.** Future traffic projections without the forecast enrollment increase at the college were developed for the year 2030. The objective of this scenario's analysis is to forecast future traffic growth and operating conditions that could be expected to result from regional growth, cumulative projects, and transportation network changes in the vicinity of the project site by the year 2030.
- **Future with Forecast Enrollment Increase Conditions.** This traffic scenario provides projected traffic volumes and an assessment of operating conditions under future (cumulative) conditions with the addition of traffic generated by the forecast enrollment increase at the college. The impacts of the project on future traffic operating conditions were then identified.

Significance Thresholds

Impacts related to transportation and circulation would be potentially significant if development accommodated by the 2016 FMP would:

1. Conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of a circulation system, taking into account all modes of transportation, including mass transit and nonmotorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways, and freeways, pedestrian and bicycle paths, and mass transit
2. Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways
3. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks
4. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)

5. Result in inadequate emergency access
6. Conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities

As discussed in Section 4.11, *Impacts Found Not to be Significant*, it was determined in the Initial Study (Appendix A) that, since the project site is not in the vicinity of any airport or private air strip, does not involve air travel facilities, and would not affect air traffic levels, it would have no impact related to air traffic patterns or air traffic levels (criterion 3). Therefore this impact is not further discussed in this section of the EIR.

The following summarizes the significant traffic impact criteria established by the City of Lancaster. AVCCD does not have applicable thresholds or standards for transportation related impacts; therefore, the City of Lancaster's significant impact criteria were applied.

Significant Impact Criteria

INTERSECTIONS

The intersection threshold criteria used to determine if a project has an adverse significant traffic impact at signalized intersections are as follows:

- Signalized intersections:
  - When LOS is degraded due to project-generated trips from LOS A, B, C, or D to LOS E or F
  - If the LOS is already at LOS E or F before project-generated trips are added, then a significant impact is indicated if volume to capacity ratio increases by 0.020
- Stop-controlled intersections
  - When LOS is degraded due to project-generated trips from LOS A, B, C, or D to LOS E or F
  - If the LOS is already at LOS E or F before project-generated trips are added, then a significant impact is indicated if the delay increases by 2.0 percent or more

BICYCLE FACILITIES

A significant impact would occur if a project disrupts existing bicycle facilities. This includes failure to dedicate rights-of-way for planned on- and off-street bicycle facilities included in an adopted Bicycle Specific Plan or to contribute towards construction of planned bicycle facilities along project frontage. In addition, a significant impact occurs if a project conflicts or creates inconsistencies with adopted bicycle system plans, guidelines, policies, or standards.

PEDESTRIAN NETWORK

A significant impact occurs if a project disrupts existing pedestrian facilities. This includes adding new vehicular, pedestrian, or bicycle traffic at locations experiencing pedestrian safety concerns including: reduction in the number of pedestrian-acceptable gaps at unsignalized crossings, or queues spilling back through pedestrian crossings. A significant impact would also occur if a project interferes with planned pedestrian facilities, including impacting the quality of the walking environment. In addition, a significant impact would occur if a project conflicts or creates inconsistencies with adopted pedestrian system plans, guidelines, policies, or standards.

TRANSIT NETWORK

A significant impact to the transit network would occur if a project disrupts existing or planned transit services or facilities. This includes disruptions on transit streets caused by project driveways, impacts to transit stops/shelters, and impacts to transit operations from improvements proposed or resulting from the project. In addition, a significant impact would occur if a project conflicts or creates inconsistencies with adopted transit system plans, guidelines, policies, or guidelines.

CONGESTION MANAGEMENT PROGRAM

The CMP traffic impact analysis guidelines establish that a significant impact would occur if the following threshold conditions are exceeded:

- The proposed project increases traffic demand on a CMP facility by 2 percent of capacity (V/C 0.02), causing LOS F (V/C > 1.00);
- If the facility is already at LOS F, a significant impact occurs when the project increases traffic demand on a CMP facility by 2 percent of capacity (V/C 0.02)

b. Project Impacts and Mitigation Measures

Threshold 1:	Conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of a circulation system, taking into account all modes of transportation, including mass transit and nonmotorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways, and freeways, pedestrian and bicycle paths, and mass transit.
Threshold 2:	Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

Impact T-1 UNDER THE EXISTING PLUS FORECAST ENROLLMENT INCREASE CONDITIONS, ALL STUDY INTERSECTIONS WOULD OPERATE AT ACCEPTABLE LEVELS OF SERVICE FOR MOTOR VEHICLES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Current (2018) enrollment at the college is 12,946 FTES and enrollment is projected to increase to 15,908 FTES in the year 2030. The TIS concludes that implementation of the 2016 FMP would generate 3,236 net new daily vehicle trips, which would access the project site from adjacent streets. Net new trips were estimated from the difference between existing and future FTES. A 5% trip credit was applied to account for trips made by transit. Vehicle trips generated by the forecast enrollment increase at the college are shown in Table 4.8-4. As discussed in Section 2, *Project Description*, the FTES increases are based on estimates of future demand for AVCCD's services. The 2016 FMP would accommodate, not cause, these projected FTES increases, which are projected to occur with or without implementation of the 2016 FMP.

Table 4.8-4 Trip Generation from Forecast Enrollment Increase

Land Use	Size (students)[1]	Daily Trips[2]	AM Peak Hour	PM Peak Hour
Future 2030 Enrollment				
Community College	15,908	18,294	1,750	1,750
Less Transit Credit		(915)	(88)	(88)
Subtotal		17,379	1,663	1,663
Existing 2018 Enrollment				
Community College	12,946	14,888	1,424	1,424
Less Transit Credit		(744)	(71)	(71)
Subtotal		14,144	1,353	1,353
Net New Project Trips		**3,236**	**310**	**310**

[1] Future 2030 enrollment from 2016 Facilities Master Plan, Antelope Valley Community College District, 2016. Current 2018 enrollment represents headcount from Spring 2018 Census, 19 February 2018.

[2] Trip rates from Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition, 2017: Junior/Community College - ITE #540.

( ) Parentheses and italics denotes subtraction

Source: TIS – Fehr & Peers 2018. See Appendix B for Full Trip Generation Table

Table 4.8-5 summarizes the intersection LOS at study intersections under Existing and Existing with Project conditions. All of the study intersections and roadway segments would operate at LOS D or better during both the morning and evening peak hours with the forecast enrollment increase at the college. Since none of the studied intersections would experience significant delays or reductions in levels of service with the addition of vehicle trips associated with the forecast enrollment increase, impacts to local intersections and vehicle LOS would be less than significant.

Mitigation Measures

No mitigation required.

Table 4.8-5 Existing and Existing with Forecast Enrollment Increase Intersection LOS for Vehicles

Intersection	Peak Hour	Existing		Existing with Project		Project Increase	Significant Impact?
		V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	
1. 40th Street W & W Avenue K	AM	0.572	A	0.576	A	0.004	No
	PM	0.558	A	0.559	A	0.001	No
2. 35th Street W & W Avenue J-8	AM	28.2	D	27.8	D	-1.4%	No
	PM	13.2	B	13.1	B	-0.8%	No
3. 32nd Street W/Driveway & W Avenue K	AM	0.501	A	0.517	A	0.016	No
	PM	0.376	A	0.392	A	0.016	No
4. 30th Street W & W Avenue J	AM	0.671	B	0.698	B	0.027	No
	PM	0.472	A	0.491	A	0.019	No
5. 30th Street W & W Avenue J-8	AM	0.635	B	0.674	B	0.039	No
	PM	0.514	A	0.543	A	0.029	No
6. 30th Street W & W Avenue J-12/New Driveway	AM	20.9	C	0.424	A	N/A	N/A
	PM	13.8	B	0.408	A	N/A	N/A
7. 30th Street W & W Avenue K	AM	0.638	B	0.691	B	0.053	No
	PM	0.490	A	0.528	A	0.038	No
8. 30th Street W & W Avenue K-8	AM	0.568	A	0.576	A	0.008	No
	PM	0.447	A	0.454	A	0.007	No
9. 25th Street W & W Avenue J	AM	0.466	A	0.473	A	0.007	No
	PM	0.500	A	0.506	A	0.006	No
10. 25th Street W & W Avenue J-8	AM	0.576	A	0.579	A	0.003	No
	PM	0.528	A	0.537	A	0.009	No
11. 25th Street W & W Avenue K	AM	0.551	A	0.557	A	0.006	No
	PM	0.472	A	0.492	A	0.020	No
12. SR 14 Southbound Off-Ramp & W Avenue J	AM	0.430	A	0.432	A	0.002	No
	PM	0.483	A	0.489	A	0.006	No
13. 20th Street W & SR 14 Northbound Off-Ramp	AM	0.559	A	0.559	A	0.000	No
	PM	0.586	A	0.586	A	0.000	No
14. 20th Street W & W Avenue J-8	AM	0.481	A	0.478	A	-0.003	No
	PM	0.649	B	0.650	B	0.001	No
15. 20th Street W & W Avenue K	AM	0.495	A	0.508	A	0.013	No
	PM	0.541	A	0.552	A	0.011	No
16. 17th Street W & W Avenue K	AM	0.517	A	0.521	A	0.004	No
	PM	0.558	A	0.565	A	0.007	No
17. SR-14 Southbound Ramps & W Avenue K	AM	0.488	A	0.495	A	0.007	No
	PM	0.593	A	0.608	B	0.015	No
18. 15th Street/SR 14 Northbound Ramps & W Avenue K	AM	0.673	B	0.678	B	0.005	No
	PM	0.837	D	0.854	D	0.017	No

Threshold 1:	Conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of a circulation system, taking into account all modes of transportation, including mass transit and nonmotorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways, and freeways, pedestrian and bicycle paths, and mass transit.
Threshold 2:	Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

Impact T-2 THE FORECAST ENROLLMENT INCREASE AT THE COLLEGE WOULD NOT RESULT IN PROJECT-GENERATED VEHICLE TRIPS THAT EXCEED LOS ANGELES COUNTY CONGESTION MANAGEMENT THRESHOLDS FOR ARTERIAL STREETS, HIGHWAYS, OR REGIONAL TRANSIT FACILITIES. SINCE IMPLEMENTATION OF THE 2016 FMP WOULD NOT CONFLICT WITH THE APPLICABLE COUNTY CONGESTION MANAGEMENT PROGRAM, THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Arterial Streets

The CMP arterial monitoring stations nearest to the project site are the intersections of Avenue D & 60th Street West and Palmdale Boulevard & Sierra Highway. Both intersections are approximately ten miles away, and neither was included in the 2016 FMP's TIS (Appendix B). Based on the trip estimates shown in Table 4.8-4 and the lane assignment configurations shown in Appendix A of the TIS, the forecast enrollment increase would add fewer than 50 peak hour vehicle trips through either of the aforementioned CMP arterial monitoring stations (Fehr & Peers 2018). Therefore, impacts to the CMP arterial system would be less than significant.

Freeways

As discussed in Section 4.8.2(a), *Methodology*, the 2010 CMP for Los Angeles County requires analysis for all CMP mainline freeway monitoring locations where a proposed project will add 150 or more trips, in either direction, during either the AM or PM peak hours. The CMP freeway monitoring stations closest to the project site are located on SR 14 south of Angeles Forest Highway and on SR 14 at the junction of Route 48. Based on the project-generated trip estimates shown in Table 4.8-4 and the lane assignment configurations shown in Appendix A of the TIS, the forecast enrollment increase would not add a significant amount of new traffic to exceed the freeway analysis criteria at either of these locations (Fehr & Peers 2018). Since project-generated traffic in either direction during both weekday peak hours (AM and PM) is projected to be below the minimum criterion of 150 one-way vehicles per hour, impacts to the CMP regional freeway system would be less than significant.

Regional Transit

Within a quarter mile of the project site, the AVTA operates Local Route 7 (approximately 30-minute headways during the peak hours), Route 9 (approximately 45-minute headways during the peak hours), Route 11 (approximately 35-minute headways during the peak hours), and Route 12 (approximately 25-minute headways during the peak hours). Within two miles of the project site, Kern Transit operates Route 100 with more than 60-minute headways during peak hours and Route 250 with 45-minute headways during peak hours. Approximately 15 percent of total person trips

generated by implementation of the 2016 FMP are conservatively assumed to use transit to travel to and from the site (Fehr & Peers 2018). As discussed in Impact T-1, the forecast enrollment increase would generate approximately 326 trips during the AM peak hour and 326 during the PM peak hour. Applying the AVR factor of 1.4, as discussed in Section 4.8.2 a), *Methodology*, to the estimated trips, the enrollment increase would add approximately 456 person trips during each peak hour. Applying the 15 percent transit use would result in approximately 68 new transit person trips during each of the weekday AM and PM peak hours (Fehr & Peers 2018).

AVTA (Local Routes 7, 9, 11, and 12) and Kern Transit (Routes 100 and 250) have an estimated seating capacity of 560 persons per hour during the peak periods based on a seating capacity of 40 persons per bus. The forecast enrollment increase would utilize up to 12 percent of available transit capacity during the peak hours based on the CMP assumption of transit trips equating to 15 percent of person trips. At this level of transit capacity utilization, to the enrollment increase would not result in a substantial CMP transit impact. Therefore, with this level of absorption of transit system capacity, impacts to the regional transit system would be less than significant.

Mitigation Measures

No mitigation required.

Threshold 4: Increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Impact T-3 IMPLEMENTATION OF THE 2016 FMP WOULD NOT INCREASE HAZARDS DUE TO PROPOSED DESIGN FEATURES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

As discussed in Impact T-1 and T-2, the forecast enrollment increase at the college would not add a substantial amount of vehicle trips that would alter or degrade intersection levels of service to dangerous or failing conditions.

As discussed further in Impact T-4, construction of the new access points to the project site would allow for increased accessibility and circulation, and would not involve the construction of incompatible or dangerous features. Since no features are proposed that would increase or create hazardous conditions/incompatible uses on the project site, this impact would be less than significant.

Mitigation Measures

No mitigation required.

Threshold 5: Result in inadequate emergency access.

Impact T-4 IMPLEMENTATION OF THE 2016 FMP WOULD NOT RESULT IN INADEQUATE EMERGENCY ACCESS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

As shown in Figure 2-5 and discussed in Section 2, *Project Description*, the 2016 FMP includes construction of a new driveway at the intersection of 30th Street West & West Avenue J-12 and the closure of two existing driveways on 30th Street West, located immediately south of the new access point. Two new pick-up and drop-off locations are proposed: one on the east side of campus, near the new 30th Street entry, and one on the west side of campus, between the new Community

Center and SOAR High School. Internal circulation on campus is provided in a loop connecting parking lots on the north, east, and south ends of campus with campus buildings and adjacent neighborhood streets to the west and northwest.

Although new driveways and access points would be introduced at the project site, all site plans and access points would be reviewed by the Department of General Services – Division of the State Architect (DSA), as well as the County of Los Angeles Fire Department to ensure adequate accessibility and emergency access is maintained during both construction and operation of the projects carried out under the 2016 FMP. In addition, with multiple access points to the campus, construction of the new access ways would not restrict or hinder access at other points on campus, and accessibility would be maintained throughout construction and operation. Since implementation of the 2016 FMP would not result in inadequate emergency access, this impact would be less than significant.

Mitigation Measures

No mitigation required.

Threshold 6:	Conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities.

Impact T-5 IMPLEMENTATION OF THE 2016 FMP WOULD NOT SUBSTANTIALLY DECREASE PERFORMANCE, SAFETY, OR EFFECTIVENESS OF THE EXISTING PEDESTRIAN, BICYCLIST, AND TRANSIT NETWORK. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

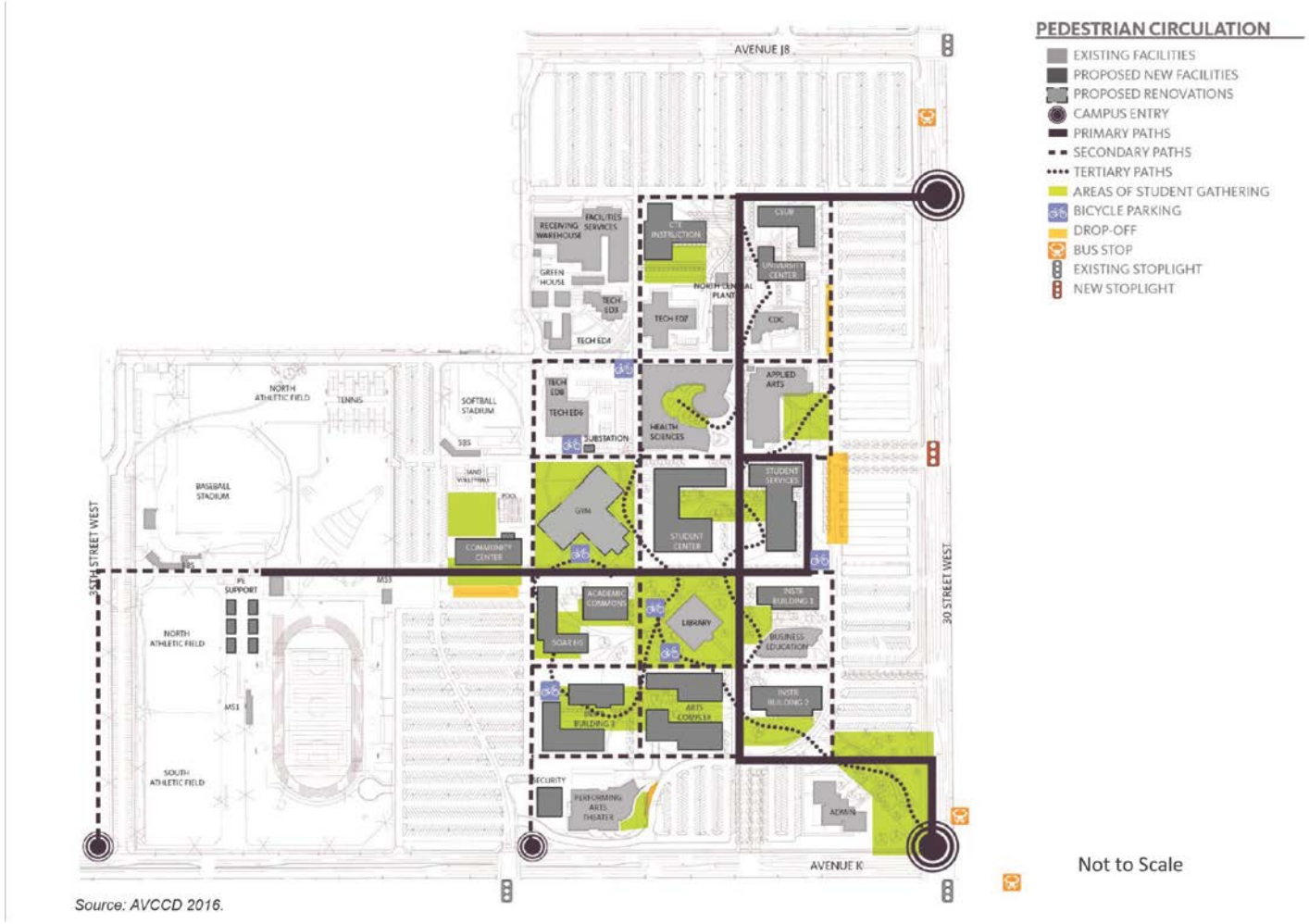
Bicycle Facilities

In 2012, the City of Lancaster adopted a Master Plan of Trails and Bikeways. The Master Plan recognized the public health benefits of increased bicycling and the importance of providing safe and comfortable bicycle facilities. Bicycle facilities within the study area include on-street bicycle lanes on West Avenue J-8, 40th Street West, 35th Street West, and 30th Street West. The 2016 FMP does not include any development that would interfere, hinder, or remove any of the bicycle facilities along these routes. Since there are no bicycle facilities planned in the study area, implementation of the 2016 FMP would not alter or create hazards or result in the decreased performance of these facilities, and impacts to the bicycle network and facilities would be less than significant.

Pedestrian Facilities

Pedestrian walkways exist in the study area along all but West Avenue K-8. The pedestrian network would be maintained along these ways, and implementation of the 2016 FMP would not influence or hinder the effectiveness of these walkways. Figure 4.8-2 shows site access and pedestrian circulation on campus that would result from implementation of the 2016 FMP. Implementation of the 2016 FMP would add pedestrian site access at the intersections of 30th Street West & West Avenue K and 30th Street West and the northernmost driveway on the east side of campus. Primary, secondary, and tertiary paths provide internal circulation for pedestrians, connecting bus stops along 30th Street West and parking lots on the perimeter of campus to buildings and areas of student gathering in internal to the project site.

Figure 4.8-2 Site Access and Pedestrian Circulation



Source: AVCCD 2016.

There are no planned pedestrian facilities surrounding the project site that would be affected by the implementation of the 2016 FMP, which would occur on the existing campus. This impact would therefore be less than significant.

Transit Facilities

Implementation of the 2016 FMP would improve one northbound and one southbound bus stop on 30th Street West between West Avenue J-9 and West Avenue J-12. The southbound bus stop would be relocated approximately 500 feet south, to just south of the new campus driveway at Avenue J-12. The remaining bus stops (listed in Section 4.8.1(b), *Existing Public Transit*) would remain unchanged. Further, based on a review of available documents, such as the AVTA's Comprehensive Long Range Transit Plan (2010), no planned transit services would be adversely affected by implementation of the 2016 FMP (Fehr & Peers 2018). Since implementation of the 2016 FMP would not disrupt any existing or planned transit stops, this impact would be less than significant.

Congestion impacts to transit facilities are discussed in Impact T-2. As discussed in Impact T-2, congestion impacts to local and regional transit facilities would be less than significant.

Mitigation Measures

No mitigation required.

c. Cumulative Impacts

Cumulative impacts to the studied intersections were analyzed in the Transportation Impact Study as Future and Future with Project conditions. The Future without Project peak hour traffic volumes was analyzed to determine the projected V/C ratio or delay and LOS for each of the analyzed intersections. Table 4.8-6 summarizes the future LOS of the studied intersections, as well as conditions in the Future with Project scenario.

As shown in Table 4.8-6, during Future conditions without an enrollment increase at the college, 17 of the 18 study intersections are projected to operate at LOS D or better during both morning and evening peak hours. The unsignalized intersection of 35th Street West & West Avenue J-8 is projected to operate at LOS F during both the AM and PM peak hours. The Future with Forecast Enrollment Increase peak hour traffic volumes were analyzed to determine the projected future operating conditions with the addition of the traffic generated by implementation of the 2016 FMP. As shown in Table 4.8-6, seventeen of the 18 study intersections are projected to operate at LOS D or better during both morning and evening peak hours. The unsignalized intersection of 35th Street West & West Avenue J-8 would continue to operate at LOS F during both the AM and PM peak hours. Applying the significance criteria listed in Section 4.8.2(a), none of the intersections studied in the Future with Forecast Enrollment Increase scenario would experience significant impacts regarding delay or reduced levels of service. Since the forecast enrollment increase at the college would not generate vehicle trips that would significantly impact levels of service in the cumulative future scenario, the contribution to cumulative impacts would not be cumulatively considerable, and this impact would be less than significant.

Mitigation Measures

No mitigation required.

Table 4.8-6 Future and Future with Forecast Enrollment Increase Intersection LOS for Vehicles

Intersection	Peak Hour	Future		Future with Project		Project Increase	Significant Impact?
		V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	
1. 40th Street W & W Avenue K	AM	0.606	B	0.610	B	0.004	No
	PM	0.608	B	0.610	B	0.002	No
2. 35th Street W & W Avenue J-8	AM	76.0	F	75.3	F	-0.9%	No
	PM	60.3	F	59.9	F	-0.7%	No
3. 32nd Street W/Driveway & W Avenue K	AM	0.561	A	0.577	A	0.016	No
	PM	0.461	A	0.472	A	0.011	No
4. 30th Street W & W Avenue J	AM	0.680	B	0.707	C	0.027	No
	PM	0.565	A	0.584	A	0.019	No
5. 30th Street W & W Avenue J-8	AM	0.724	C	0.762	C	0.038	No
	PM	0.598	A	0.628	B	0.030	No
6. 30th Street W & W Avenue J-12/New Driveway	AM	23.9	C	0.414	A	N/A	N/A
	PM	16.5	C	0.387	A	N/A	N/A
7. 30th Street W & W Avenue K	AM	0.664	B	0.715	C	0.051	No
	PM	0.542	A	0.582	A	0.040	No
8. 30th Street W & W Avenue K-8	AM	0.596	A	0.603	B	0.007	No
	PM	0.503	A	0.516	A	0.013	No
9. 25th Street W & W Avenue J	AM	0.547	A	0.562	A	0.015	No
	PM	0.599	A	0.608	B	0.009	No
10. 25th Street W & W Avenue J-8	AM	0.592	A	0.595	A	0.003	No
	PM	0.556	A	0.565	A	0.009	No
11. 25th Street W & W Avenue K	AM	0.579	A	0.585	A	0.006	No
	PM	0.517	A	0.536	A	0.019	No
12. SR 14 Southbound Off-Ramp & W Avenue J	AM	0.585	A	0.588	A	0.003	No
	PM	0.647	B	0.656	B	0.009	No
13. 20th Street W & SR 14 Northbound Off-Ramp	AM	0.600	A	0.600	A	0.000	No
	PM	0.626	B	0.626	B	0.000	No
14. 20th Street W & W Avenue J-8	AM	0.544	A	0.546	A	0.002	No
	PM	0.713	C	0.712	C	-0.001	No
15. 20th Street W & W Avenue K	AM	0.538	A	0.551	A	0.013	No
	PM	0.588	A	0.597	A	0.009	No
16. 17th Street W & W Avenue K	AM	0.566	A	0.569	A	0.003	No
	PM	0.682	B	0.689	B	0.007	No
17. SR-14 Southbound Ramps & W Avenue K	AM	0.479	A	0.485	A	0.006	No
	PM	0.541	A	0.547	A	0.006	No
18. 15th Street/SR 14 Northbound Ramps & W Avenue K	AM	0.595	A	0.600	A	0.005	No
	PM	0.682	B	0.688	B	0.006	No

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4.9 Tribal Cultural Resources

This subsection evaluates impacts to tribal cultural resources associated with development of the Antelope Valley Community College District (AVCCD) Facilities Master Plan. The analysis is based on information provided to the AVCCD by California Native American tribes. Copies of the notification letters sent to California Native American tribes are included in Appendix I of this EIR.

4.9.1 Setting

a. Existing Conditions

Although there are no known tribal cultural resources on the project site, the project site is located within, but not necessarily limited to, a geographical area of interest identified by five California Native American tribes: Morongo Band of Mission Indians, San Fernando Band of Mission Indians, San Manuel Band of Mission Indians, Serrano Nation of Mission Indians, and Fernandeño Tataviam Band of Mission Indians.

b. Regulatory Framework

Assembly Bill 52 of 2014

AB 52 expanded CEQA by defining a new resource category, "tribal cultural resources." AB 52 establishes 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" (PRC Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3). PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe," and meets either of the following criteria:

a. 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)
b. 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

In recognition of California Native American tribal sovereignty and the unique relationship of California local governments and public agencies with California Native American tribal governments, and respecting the interests and roles of project proponents, it is the intent AB 52 to accomplish all of the following:

(1) Recognize that California Native American prehistoric, historic, archaeological, cultural, and sacred places are essential elements in tribal cultural traditions, heritages, and identities.
(2) Establish a new category of resources in CEQA called "tribal cultural resources" that considers the tribal cultural values in addition to the scientific and archaeological values when determining impacts and mitigation.

(3) Establish examples of mitigation measures for tribal cultural resources that uphold the existing mitigation preference for historical and archaeological resources of preservation in place, if feasible.

(4) Recognize that California Native American tribes may have expertise with regard to their tribal history and practices, which concern the tribal cultural resources with which they are traditionally and culturally affiliated. Because CEQA calls for a sufficient degree of analysis, tribal knowledge about the land and tribal cultural resources at issue should be included in environmental assessments for projects that may have a significant impact on those resources.

(5) In recognition of their governmental status, establish a meaningful consultation process between California Native American tribal governments and lead agencies, respecting the interests and roles of all California Native American tribes and project proponents, and the level of required confidentiality concerning tribal cultural resources, at the earliest possible point in CEQA environmental review process, so that tribal cultural resources can be identified, and culturally appropriate mitigation and mitigation monitoring programs can be considered by the decision-making body of the lead agency.

(6) Recognize the unique history of California Native American tribes and uphold existing rights of all California Native American tribes to participate in, and contribute their knowledge to, the environmental review process pursuant to CEQA.

(7) Ensure that local and tribal governments, public agencies, and project proponents have information available, early in CEQA environmental review process, for purposes of identifying and addressing potential adverse impacts to tribal cultural resources and to reduce the potential for delay and conflicts in the environmental review process.

(8) Enable California Native American tribes to manage and accept conveyances of, and act as caretakers of, tribal cultural resources.

(9) Establish that a substantial adverse change to a tribal cultural resource has a significant effect on the environment.

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. AB 52 requires that lead agencies “begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project.” Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

c. Assembly Bill 52 Consultation

As part of the process of identifying cultural resources issues on or near the project site, and to assist the AVCCD with Native American consultation in accordance with Assembly Bill 52 of 2014 (AB 52), Rincon contacted the Native American Heritage Commission (NAHC) on March 27, 2018 to request a list of Native American individuals and tribal organizations for tribal consultation per AB 52. Rincon received a response via email on March 29, 2018 in which the NAHC provided a contact list of seven Native American individuals and tribal organizations for Los Angeles County. AVCCD sent notification letters to each of the NAHC-listed contacts on April 12, 2018. Under AB 52, tribes have 30 days to respond and request consultation. The NAHC tribal consultation list and notification letters are provided in Appendix I.

The San Manual Band of Mission Indians (SMBMI) was the only Native American tribe to respond to the AB 52 notification letter. In an email to AVCCD staff dated May 15, 2018, the SMBMI stated that

the project site is located within Serrano ancestral territory. However, they had no concerns with the implementation of the 2016 FMP as currently planned. The SMBMI requested that specific language be included in the project conditions concerning the inadvertent discovery of human remains, funerary objects, and Native American resources. The AVCCD responded in an email dated May 24, 2018, noting that they would consider SMBMI's comments during project review and approval. The ACVDD and he SMBMI agreed to conclude AB 52 consultation on May 24, 2018. No tribal cultural resources have been identified as a result of AB 52 consultation efforts.

4.9.2 Impact Analysis

a. Methodology and Significance Thresholds

Methodology

Analysis of tribal cultural resources relies on information obtained through the AB 52 consultation process between the AVCCD and local Native American tribes.

Significance Thresholds

Appendix G of the State CEQA Guidelines is a sample Initial Study checklist that includes inquiries related to the subject of tribal cultural resources, as it does on a whole series of additional environmental topics. Notably, lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance on the subject of tribal cultural resources, or indeed on any subject addressed in the checklist. (Save Cuyama Valley v. County of Santa Barbara (2013) 213 Cal.App.4th 1059, 1068.) Rather, with few exceptions, "CEQA grants agencies discretion to develop their own thresholds of significance." (Ibid.) Even so, it is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G and to use that language in fashioning thresholds. The AVCCD has done so here.

In accordance with Appendix G of the *CEQA Guidelines*, an impact to tribal cultural resources would be significant if a project would:

A. 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:
    1. 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), or
    2. 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.

b. Project Impacts and Mitigation Measures

Threshold A:	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: 1. 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), or 2. 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.

Impact TCR-1 CONSTRUCTION AND USE OF THE PROJECT MAY CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF AN UNKNOWN TRIBAL CULTURAL RESOURCE. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

As described in the Setting, AVCCD prepared and mailed letters to local California Native Americans in accordance with AB 52. No tribal cultural resources have been identified as a result of AB 52 consultation efforts. However, there is a possibility of encountering subsurface archaeological resources that may be considered tribal cultural resources, thus mitigation is required to address potential impacts to unanticipated discoveries. With incorporation of the following mitigation measure, impacts to previously unidentified tribal cultural resources would be less than significant.

Mitigation Measure

The following mitigation is required.

TCR-1 Unanticipated Discovery of Tribal Cultural Resources

In the event that cultural resources of Native American origin are identified during construction, all earth disturbing work in the vicinity of the find shall be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find and an appropriate Native American representative, based on the nature of the find, is consulted. If AVCCD determines that the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with state guidelines and in consultation with Native American groups. The plan shall include avoidance of the resource or, if avoidance of the resource is infeasible, the plan would outline the appropriate treatment of the resource in coordination with the archaeologist and the appropriate Native American tribal representative.

Significance After Mitigation

Through the evaluation of unanticipated potential tribal cultural resources, should they be discovered, implementation of Mitigation measures TCR-1 would reduce impacts to tribal cultural resources to a less than significant level.

c. Cumulative Impacts

The study area for cumulative impacts to tribal cultural resources is the extent of the geographic area with which the identified tribes are traditionally and culturally affiliated. Implementation of the 2016 FMP, in conjunction with other nearby planned, pending, and potential future projects within this area, would have the potential to adversely impact tribal cultural resources. Cumulative development in the region would continue to disturb areas with the potential to contain tribal cultural resources. It is anticipated that, for other developments that would have significant impacts on tribal cultural resources, similar mitigation measures as described herein would be imposed on those other developments, along with requirements to comply with all applicable laws and regulations governing said resources. With the proposed mitigation measure identified in this section of the EIR, coupled with policies and regulations applying to this and other projects, such impacts to tribal cultural resources would be less than significant at the project level. As such, the proposed project would not contribute to cumulative impacts on tribal cultural resources outside the project site. In addition, individual development proposals are reviewed separately by the appropriate jurisdiction and undergo environmental review when it is determined that the potential for significant impacts exist. In the event that future cumulative projects would result in impacts to known or unknown tribal cultural resources, impacts to such resources would be addressed on a case-by-case basis. Therefore, impacts related to tribal cultural resources would not be cumulatively considerable.

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4.10 Utilities and Service Systems

This section analyzes the2016 FMP's potential impacts to water supplies, wastewater facilities, and solid waste facilities. Impacts related to storm water drainage facilities were addressed in the Initial Study, provided in Appendix A.

4.10.1 Setting

a. Water Supply

Historically, water supplies in the Antelope Valley region had been used primarily for agricultural uses. Population growth in the area beginning in the 1980s significantly increased water demands in the area for residential and commercial purposes, and this trend is expected to continue into the future. This expected population growth will have an impact on water demand and the need for management. The City of Lancaster receives its water supply primarily through imported water from the State Water Project (SWP) and groundwater drawn from the surrounding Antelope Valley basin. Water service to the City is provided by 14 different water retail agencies, with Los Angeles County Waterworks District No. 40 (LA WWD40) and Quartz Hill Water District being the largest water purveyors in the City.

The project site is located in an area served by LA WWD40. LA WWD40 is a County agency and provides water service to the Lancaster and Palmdale areas, encompassing an area of approximately 40,000 acres. LA WWD40 has two sources of water: groundwater from local wells, and water imported by the SWP. Historically, groundwater has been a secondary source of potable water for LA WWD40, with about 63 percent of water from SWP and the remaining 37 percent from groundwater sources.

SWP water for LA WWD40 is received through the Antelope Valley-East Kern Water Agency (AVEK), which has entitlements to SWP water. AVEK treats and supplies imported SWP water for the water agencies operating within the City of Lancaster. AVEK currently has allocation for purchasing up to 144,844 acre-feet of water per year from the SWP. According to a Capability Report produced by the Department of Water Resources (DWR), with existing facilities, regulations, operation, and demand, the SWP will be able to deliver 60 percent of the allocated amounts in most years. The Capability Report also projects SWP deliveries during multiple-dry years, which could average 35 percent of allocated amounts or as low as 9 percent during unusually dry years (DWR 2018).

In order to maximize the use of the SWP supplies, AVEK developed the Westside Water Bank and has various exchange programs with other SWP contractors. Water banking is an important strategy for water purveyors to utilize when the availability of water supplies are uncertain. It involves storing water when available during wetter years or low-demand periods and recovering it during period of drought or high demand. Through water banking, AVEK can take SWP supplies in excess of demands for use as groundwater recharge. Approximately 36,000 acre-feet per year is the recharge capacity. LA WWD40 has purchased banked groundwater to use for future dry years, with a maximum recovery of 36,000 acre-feet per year.

According to the 2015 AVEK Urban Water Management Plan (UWMP), the water demand volume for AVEK services will be approximately 86,260 AF per year in 2035 during normal rainfall years, up from 47,464 AF per year in 2015. Projections are based on population projections from the Antelope Valley Integrated Regional Water Management Plan (IRWMP); projections from the LAWWD 40 2015 Urban Water Management Plan (UWMP); a reduction in availability of future groundwater

extraction; and a 25% reduction in the projected demands for 2015 is due to the Governor's Executive Order mandating a 25% reduction in potable water demands from 2013 demands (AVEK 2016). The supply in volume in 2035 is estimated to be 89,010 AF per year. Thus, there would be a surplus of 2,760 AF per year, as shown in Table 4.10-1. These estimates are based on 59 percent of AVEK's State Water Project water allocation and AVEK's groundwater production right of 3,500 acre-feet per year. Table 4.10-2 shows the projected wholesale supply and demand for single dry years. The estimates are based on SWP supply allocations during dry conditions and groundwater production rights of 3,550 AF per year and groundwater bank recovery of 36,000 AF per year. Due to the SWP supply during dry periods, AVEK is projected to have a water supply deficit during single dry years even with the additional groundwater bank production. This water shortage is partially due to current usage patterns by each water purveyor served by AVEK and agricultural users. It also does not consider reductions in demand due to water conservation efforts or other water sources that water purveyors may be able to utilize.

Table 4.10-1 AVEK Normal Year Wholesale Supply and Demand Comparison (AFY)

Sources	2020	2025	2030	2035
Purchased or Imported Water [1]	85,460	85,460	85,460	85,460
Groundwater	3,550	3,550	3,550	3,550
Total Supply	**89,010**	**89,010**	**89,010**	**89,010**
Demand	83,680	85,630	85,940	86,260
Total Surplus	**5,330**	**3,380**	**3,070**	**2,750**

[1] Based on SWP allocation at 59% of Table A

Source: AVEK 2015

Table 4.10-2 AVEK Single Dry Year Wholesale Supply and Demand Comparison (AFY)

Sources	2020	2025	2030	2035
Purchased or Imported Water [1]	7,200	7,200	7,200	7,200
Groundwater [2]	39,550	39,550	39,550	39,550
Total Supply	**46,750**	**46,750**	**46,750**	**46,750**
Demand	83,680	85,630	85,940	86,260
Total Surplus	**(36,930)**	**(38,880)**	**(39,190)**	**(39,510)**

[2] Single dry year based on 5% of Table A allocation

Source: AVEK 2015

As shown in Table 4.10-3, LA WWD40 has a projected surplus of water supplies during normal conditions based on the current water supply portfolio of the District. LA WWD40 is also projected to meet demand during single dry-year and multiple dry-year scenarios through 2035, as seen in Table 4.10-4 and Table 4.10-5. These projections include AVEK's projected supply during single and multiple dry-year events. While AVEK is showing a water shortage during dry years, LA WWD40's banked water supply will be able to meet projected demands into 2035, even under single and multiple dry year scenarios.

Table 4.10-3 LA County Waterworks District 40 Normal Year Supply and Demand Comparison (AFY)

Sources	2020	2025	2030	2035
AVEK	61,000	61,000	61,000	61,000
Groundwater	36,790	36,790	36,790	36,790
New Supply	4,100	12,900	21,600	30,300
Recycled Water	8,200	10,900	13,600	16,300
Total Supply	**110,090**	**121,590**	**132,990**	**144,390**
Demand	96,490	108,010	119,400	130,820
Total Surplus	**13,600**	**13,580**	**13,590**	**13,570**

Source: Los Angeles County Department of Public Works (DPW)2017

Table 4.10-4 LA County Waterworks District 40 Single Dry Year Supply and Demand (AFY)

Sources	2020	2025	2030	2035
AVEK	4,800	4,800	4,800	4,800
Groundwater	36,790	36,790	36,790	36,790
New Supply	320	1,015	1,700	2,385
Groundwater from banked supplies	46,380	54,505	62,510	70,545
Recycled Water	8,200	10,900	13,600	16,300
Total Supply	**96,490**	**108,010**	**119,400**	**130,820**
Demand	96,490	108,010	119,400	130,820
Difference	**0**	**0**	**0**	**0**

Source: DPW2017

Table 4.10-5 LA County Waterworks District 40 Multiple Dry Year Supply and Demand (AFY)

Sources		2020	2025	2030	2035
Year 1	Supply Totals	96,490	108,010	119,400	130,820
	Demand Totals	96,490	108,010	119,400	130,820
	Difference	**0**	**0**	**0**	**0**
Year 2	Supply Totals	96,490	108,010	119,400	130,820
	Demand Totals	96,490	108,010	119,400	130,820
	Difference	**0**	**0**	**0**	**0**
Year 3	Supply Totals	96,490	108,010	119,400	130,820
	Demand Totals	96,490	108,010	119,400	130,820
	Difference	**0**	**0**	**0**	**0**

Source: DPW2017

State Water Project

AVEK sells imported water from the DWR California Aqueduct as part of the SWP. Currently, AVEK has an allocation for purchasing up to 144,844 acre-feet of water per year (Table A) from the SWP. In order to maximize the use of its SWP supplies, AVEK has developed the Westside Water Bank within its service area and has entered into various exchange programs with other SWP contractors.

Groundwater

Water supply in Lancaster and the Antelope Valley area has historically been provided primarily from groundwater sources. The groundwater basin underlying the City of Lancaster and project site is the Antelope Valley Groundwater Basin, a topographically closed, alluvial basin with an estimated capacity of about 68 to 70 million acre-feet according to the DWR (AVEK 2015). Groundwater extractions are reported to have increased from about 29,000 AF in 1919 to 400,000 AF in the 1950s when groundwater extraction was at its highest. Groundwater pumping declined after 1950 due to the increased pumping and energy costs associated with groundwater extraction from the declined groundwater levels. Since 1972, between 50 to 90 percent of the area's water supply has been from groundwater (AVEK 2015). The use of State Water Project water has helped to stabilize groundwater levels in some areas of the region. The rapid increase in urban growth in the 1980's, and currently observed today, is further increasing the demand for groundwater use for municipal, residential, and commercial services.

The Basin is currently listed as in overdraft based on a Superior Court of California ruling in 2015. Pumping restrictions will be imposed and fully implemented during a required seven-year decline in extraction. The Antelope Valley Regional Water Management Group is comprised of 11 agencies. The 11 agencies signed and developed the Antelope Valley Integrated Regional Water Management Plan, updated in 2013, to meet the requirements of AB 3030 for the development of a groundwater management plan.

b. Wastewater

The City of Lancaster's collection, treatment, and disposal of wastewater is under the jurisdiction of Los Angeles County Sanitation District No. 14. District No. 14 owns and maintains the Lancaster Wastewater Reclamation Plant (LWRP) and the trunk sewers that flow to the plant. Wastewater generated by the 2016 FMP would be collected by City sewers, operated by the City's Utilities Services Division in the Development Services Department, and discharged to the regional trunk sewer pipeline. The treatment of wastewater is treated at the LWRP, located on Avenue D east of SR-14.

Wastewater flow to the LWRP is from residential, commercial, industrial, and entitlement sources under contract. According to the 2020 Facilities Plan, the average maximum monthly flow rate is 18 million gallons per day (mgd) of wastewater. The mean wastewater flow rate in December 2017 was 14.3 mgd (Wert 2018). The Lancaster Water Reclamation Plant 2020 Facilities Plan estimates that the average per capita wastewater generation rate for its customers is 94 gallons per capita per day. The plan was produced to ensure that the LWRP has the capacity to accommodate its projected service population by 2020. The report indicates that the facility needs to be expanded to treat an estimated flow rate of 26 mpg to accommodate increases in population and flow rates from residential, industrial, and commercial uses (DPW 2004).

The U.S. Environmental Protection Agency and the Lahontan Regional Water Quality Control Board (LRWQCB) regulate water reclamation operations at the LWRP. The LWRP discharge of treated

wastewater is regulated by the LRWQCB under Board Order R6V-2002-053, with discharge specifications, effluent limitations, receiving water limitations, and other general requirements. The LWRP does not discharge into water bodies of the U.S. Effluent from the LWRP is discharged to Nebeker Ranch, Pilute Ponds, the Impoundment Areas, and Apollo Park (DPW 2004).

Wastewater generated by Antelope Valley College discharges into the local City sewer line for conveyance to the Districts trunk "F" sewer line, located in 30th street (City of Lancaster 2009d). This trunk sewer line is 24 inches in diameter, with a capacity for 8.3 million gallons per day, and a peak flow of 6.3 mgd when last measured in 2004. The wastewater is then transported to the LWRP.

c. Solid Waste

Solid waste disposal for AVC is provided through Waste Management of Lancaster, which is located at 1200 City Ranch Road in Palmdale, California. Waste Management provides all solid waste collection and disposal services for the City of Lancaster. Trash from the City is hauled and disposed of at Lancaster Landfill or Antelope Valley Landfill. The Lancaster Landfill, located at 600 E Avenue F in Lancaster, California 93535, is designated as a Class III landfill facility on 276 acres of land. It has a maximum daily capacity of 5,100 tons per day and a maximum overall capacity of 27,700,000 cubic yards. Currently the Lancaster Landfill receives about 400 to 700 tons of solid waste per day (Merten 2018). The remaining overall capacity of the landfill is 14,514,648 as of August 25, 2012; the estimated closure date for the Lancaster Landfill is 2044 (CalRecycle 2018a). The Antelope Valley Public Landfill, located at 1200 W City Ranch Road in Palmdale, California 93551, is also a Class III landfill, and it has a maximum daily capacity of 3,563 tons per day. Currently the facility takes in about 2,200 tons per day (Stetson 2018). The overall maximum capacity of the landfill is 20,400,000 cubic yards, and the facility has a remaining capacity of 18,303,272 cubic yards. The Antelope Valley landfill has an estimated closure year of 2042 as of the 2011 facility permit 19-AA-5624 (CalRecycle 2018b).

While 100 percent of solid waste is taken to the Lancaster and Antelope Valley landfills, there are also several regional landfills in Los Angeles, Kern, Ventura, and Orange counties that can accept solid waste from the City of Lancaster. There are certain restrictions on where waste can originate from, but these facilities provide potential for disposal areas if the need arises.

The California Integrated Waste Management Act of 1989 (AB 939), requires each city or county's source reduction and recycling element to include an implementation schedule showing that a city or county is diverting 50 percent of solid waste from landfill disposal or transformation on and after January 1, 2000. SB 1016, passed in 2008, now requires the 50 percent diversion requirement to be calculated in a per capita disposal rate equivalent. Target disposal rates are calculated using population (i.e., number of city residents) and employment numbers (i.e., number of employees in the city). Table 4.10-6 shows the City of Lancaster's per capita diversion rates from 2011 through 2016, and also shows that the City is meeting the required disposal rate.

Table 4.10-6 City of Lancaster Per Capita Solid Waste Disposal

Reporting Year	Per Capita Landfill Disposal (lbs./person/day)	Target Disposal Rate – 50 Percent Reduction (lbs./person/day)	Disposal Target Met?
2011	3.9	6.4	Yes
2012	3.6	6.4	Yes
2013	3.6	6.4	Yes
2014	3.6	6.4	Yes
2015	3.9	6.4	Yes
2016	4.2	6.4	Yes

Source: CalRecycle 2018c

d. Regulatory Setting

Federal

Federal Clean Water Act of 1977

The federal Water Pollution Control Act was passed in 1972, and was amended in 1977 as the Clean Water Act (CWA) (33 U.S.C. 1251 1376). The CWA was reauthorized in 1981, 1987, and 2000. It establishes the basic structure for regulating discharges of pollutants into the waters of the United States and has given the USEPA the authority to implement pollution control programs. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface waters. Many pollutants are regulated under the CWA, including various toxic pollutants, total suspended solids, biological oxygen demand and pH (acidity/alkalinity measure scale). Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process, described below. The CWA generally applies to surface Waters of the United States, managed by the USACE.

State

Porter-Cologne Water Quality Control Act

This Act is the overarching water quality control law for California. It is implemented by the SWQCB and nine RWQCBs. The SWQCB establishes statewide policy for water quality control and provides oversight of the regional boards' operations. The Porter-Cologne Act and the Clean Water Act overlap in many ways, as the entities established by the Porter-Cologne Act enforce and implement many federal laws and policies.

Water Conservation Act of 2009

Senate Bill (SB) X7-7, which became effective on February 3, 2010, is the water conservation component to the Delta legislative package (SB 1, Delta Governance/Delta Plan). It seeks to implement water use reduction goals established in 2008 to achieve a 20% statewide reduction in urban per capita water use by December 31, 2020. The bill requires each urban retail water supplier to develop urban water use targets to help meet the 20% goal by 2020 and meet an interim 10% goal by 2015.

Senate Bill 610

Senate Bill (SB) 610 was signed into law in 2001. This law requires cities and counties to develop water supply assessments (WSA) when considering approval of applicable development projects in order to determine whether projected water supplies can meet the project's anticipated water demand. Triggers requiring the preparation of a WSA include residential developments of more than 500 dwelling units, shopping centers or business establishments employing more than 1,000 persons or having more than 500,000 square feet of floor space, commercial office buildings employing more than 1,000 persons or having more than 250,000 square feet of floor space, and projects that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project. The proposed project does not meet these criteria and therefore does not require preparation of a WSA pursuant to SB 610.

Senate Bill 221

Whereas SB 610 requires a written assessment of water supply availability, SB 221 requires lead agencies to obtain written verification of sufficient water supply prior to approval of certain specified subdivision projects. For this purpose, water suppliers may rely on an Urban Water Management Plan (if the proposed project is accounted for within the UWMP), a Water Supply Assessment or other acceptable information that constitutes "substantial evidence." "Sufficient water supply" is defined in SB 221 as the total water supplies available during normal, single-dry and multiple-dry water years within the 20-year (or greater) projection period that are available to meet the projected demand associated with the proposed project, in addition to existing and planned future uses. WSAs are required for residential projects of more than 500 units and hotels of more than 500 rooms. The proposed project does not meet these criteria and therefore does not require preparation of a WSA pursuant to SB 221.

Water Conservation in Landscaping Act

The Water Conservation in Landscaping Act, enacted in 2006, required the DWR to update the Model Water Efficient Landscape Ordinance (MWELO). In 2009, the Office of Administrative Law (OAL) approved the updated MWELO, which required a retail water supplier or a county to adopt the provisions of the MWELO by January 1, 2010, or enact its own provisions equal to or more restrictive than the MWELO provisions. The City of Lancaster has adopted a Water Efficient Landscape Ordinance (Chapter 8.50 of the LMC) that applies to all new construction and rehabilitated landscape areas equal or greater than 2,500 square feet in the City. This ordinance would not, however, apply to activities carried out under the 2016 FMP, because AVC, as part of the State's California Community Colleges system, is not subject to the City's Municipal Code.

Green Building Standards Code

In January 2010, the California Building Standards Commission adopted the statewide mandatory Green Building Standards Code (hereafter the "CAL Green Code") that requires the installation of water-efficient indoor infrastructure for all new projects beginning after January 1, 2011. The CAL Green Code was incorporated as Part 11 into Title 24 of the California Code of Regulations. The Cal Green Code was most recently revised in 2015, with the revisions taking effect for projects approved after December 31, 2015. These revisions include the adoption of former emergency measures for outdoor irrigation and indoor plumbing fixtures applied in 2015 in response to the Governor's Executive Order B-29-15 in response to extreme drought conditions. The CAL Green Code applies to the planning, design, operation, construction, use and occupancy of every newly

constructed building or structure. All new development must satisfy the indoor water use infrastructure standards necessary to meet the CAL Green Code.

The CAL Green Code requires residential and nonresidential water efficiency and conservation measures for new buildings and structures that will reduce the overall potable water use inside the building by 20 percent. The 20 percent water savings can be achieved in one of the following ways: (1) installation of plumbing fixtures and fittings that meet the 20 percent reduced flow rate specified in the CAL Green Code, or (2) by demonstrating a 20 percent reduction in water use from the building "water use baseline."

Urban Water Management Plan Act

The California Urban Water Management Planning Act applies to municipal water suppliers that serve more than 3,000 customers or provide more than 3,000 AFY of water. The Act requires these water suppliers to update their Urban Water Management Plan (UWMP) every five years to identify short-term and long-term water demand management measures to meet growing water demands during normal, dry and multiple-dry years. The UWMP should include a description of existing and planned water sources, alternative sources, conservation efforts, reliability and vulnerability assessments, and a water shortage contingency analysis. Details of LA WWD40 efforts to promote the efficient use and management of its water resources are contained in its 2015 UWMP.

Integrated Solid Waste Management Act of 1989 (AB 939)

AB 939 requires that local jurisdictions meet waste diversion goals and establish a framework for program implementation, solid waste planning, and solid waste facility and landfill compliance.

AB 341 (Chesbro, 2011)

AB 341 builds from the goals and requirements of AB 939. It declares a State policy goal of 75 percent diversion of solid waste by the year 2020 and directs CalRecycle to develop and adopt regulations for mandatory commercial recycling.

CALGreen Construction Waste Management Requirements

The 2016 California Building Code (i.e., CALGreen) includes a number of requirements related to solid waste diversion. Importantly, new non-residential construction is required to achieve at least 65 percent construction and demolition (C&D) waste diversion and provide recycling areas for paper, cardboard, glass, plastics, metal, and organic waste.

Local

Los Angeles County Water District 2015 Urban Water Management Plan for District 40

The LA WWD40 2015 Urban Water Management Plan was prepared in accordance with the California Urban Water Management Planning Act and to implement the Water Conservation Act of 2009. The Plan encourages active planning for future demand and available supplies of water resources, and reports on water conservation strategies to meet the demands.

City of Lancaster General Plan

The General Plan provides the following policies related to water utility services:

- **Policy 3.1.1:** Ensure that development does not adversely affect the groundwater basin
- **Policy 3.1.2**: Promote efforts to exert greater City control over the existing water supply and to explore potential new sources
- **Policy 3.2.1**: Promote the use of water conservation measures in the landscape plans of new developments
- **Policy 3.2.2**: Consider the potential impact of new development projects on the existing water supply
- **Policy 3.2.3**: Encourage incorporation of water-saving design measures into existing developments
- **Policy 3.2.5**: Promote the use of water conservation measures in the design of new developments
- **Policy 15.1.5**: Ensure sufficient infrastructure is built and maintained to handle and treat wastewater discharge

The General Plan provides the following policies related to solid waste:

- **Policy 15.2.1**: Consider the use of conversion technologies at appropriate facilities
- **Policy 15.2.2**: Minimize the generation of solid wastes as requires by State Law (AB-939) through an integrated program of public education, source reductions, and recycling

4.10.2 Impact Analysis

To analyze impacts to utilities, the anticipated development potential under the proposed Master Plan was compared to the available capacity of utility infrastructure that serves the Plan Area.

a. Methodology and Significance Thresholds

Implementation of the 2016 FMP would have a significant effect on water supplies if it would result in any of the following conditions, as listed in Appendix G of the State CEQA Guidelines:

1. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board
2. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects
3. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
4. Fail to have sufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements
5. Result in a determination that the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve projected demand in addition to existing commitments
6. Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs
7. Fail to comply with federal, state, and local statutes and regulations related to solid waste

Impacts regarding stormwater drainage facilities (Criterion 3) were determined to be less than significant in the Initial Study (see Appendix A). Therefore, this impact is not further discussed in this EIR. Assessment of impacts were based on capacity and future plans of various utility services and applicable laws and regulations related to utilities and service systems.

b. Project Impacts and Mitigation Measures

Threshold 1:	Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Impact UTL-1 THE 2016 FMP WOULD NOT RESULT IN A DETERMINATION BY THE REGIONAL WATER QUALITY CONTROL BOARD THAT IT WILL EXCEED WASTEWATER TREATMENT REQUIREMENTS BECAUSE IT WILL BE SERVED BY THE LOS ANGELES COUNTY SANITATION DISTRICT, WHICH IS IN COMPLIANCE WITH APPLICABLE RWQCB REQUIREMENTS; THEREFORE, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The Public Works Division of the City of Lancaster provides storm drain and sanitary sewer services for the project site and the City. The collected wastewater is then diverted to and treated by the LWRP. The Los Angeles County Sanitation District No. 14 is the NPDES permit holder for the LWRP, and it is responsible for compliance with the wastewater treatment requirements in the Lahontan RWQCB under NPDES permit, Order No. R6V-2002-053 (Lahontan RWQCB 2002). Projects carried out under the 2016 FMP would have their wastewater treated by the LWRP, which is regulated and in compliance with the Regional Water Quality Control Board's NPDES permit. As discussed in Impact UTL-2, the projected wastewater generated by the 2016 FMP would not exceed the available capacity at the LWRP. Therefore, the proposed project would not exceed the wastewater treatment requirements of the applicable RWQCB and this impact would be less than significant.

Mitigation Measures

No mitigation required.

Threshold 2:	Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
Threshold 4:	Fail to have sufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements.
Threshold 5:	Result in a determination that the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve projected demand in addition to existing commitments.

Impact UTL-2 FULL IMPLEMENTATION OF THE 2016 FMP WOULD INCREMENTALLY INCREASE DEMAND ON POTABLE WATER AND WASTEWATER FACILITIES; HOWEVER, THE INCREASE WOULD NOT EXCEED THE CAPACITY OR SUPPLIES OF THE LOS ANGELES COUNTY WATERWORKS DISTRICT 40 OR THE LANCASTER RECLAMATION PLANT. THEREFORE, THE 2016 FMP WOULD NOT REQUIRE THE CONSTRUCTION OF NEW WATER OR WASTEWATER TREATMENT FACILITIES, OR REQUIRE NEW OR EXPANDED WATER SUPPLY ENTITLEMENTS, AND IMPACTS TO WATER AND WASTEWATER SUPPLIES AND FACILITIES WOULD BE LESS THAN SIGNIFICANT.

Potable Water

Water service to the project site is provided by LA WWD40, which receives its water from the State Water Project and groundwater sources. Water consumption on the project site was over 80 million gallons (246 acre-feet) in 2014, a majority of which was used in landscaping and irrigation (AVCCD 2016). As shown in Table 4.10-3, LA WWD40 is projected to have a surplus of 13,570 acre-feet in 2035 during normal rainfall years. During single-dry years and multiple-dry years, LA WWD40 is expected to meet demand with no surplus through 2035 as shown in Table 4.10-4 and Table 4.10-5. The District's projected water demand was based on acreage in each land use category and the water duty factors (WDFs) that each use is associated with. Implementation of the 2016 FMP would not increase the overall acreage of its land use, Public Use, within the District's service area.

LA WWD40 had a water demand of 47,464 AF per year in 2015 and a projected a demand of 83,670 AF per year in 2020. The 2016 FMP would create an additional water demand from the increase of 4,187 full-time students. Using a student to staff ratio of 27:1, approximately 154 employees would be added at the campus to serve the forecast increase in enrollment (U.S. News 2018). An increase of 3.7 AF per year in water use would result from the 2016 FMP, as shown in Table 4.10-7. This amount represents approximately 0.007 percent of LA WWD40 projected 2015 water demand and 0.004 percent of LA WWD40 projected 2020 demand.

Table 4.10-7 Water Use from Implementation of the Facilities Master Plan

Additional	Increase Amount	Water Use Factor (gallons per capita per day) [1]	Water Demand (gpd)
Full Time Students	4,187	281	1,219,821
AVC Employees	154	281	43,274
Total Net Increase			**1,263,095 (3.7 AF per Year)**

[1] Per Capita water use Factors based on LA WWD40 water use and population.

Source: DPW 2017

One of the major goals of the 2016 FMP is to manage building and landscape water use to conserve water. The 2016 FMP promotes xeriscaping and proposes to reduce the historic Commons lawn area to a dedicated area around the Library, which would lower the high-water use area footprint. It should also be noted that implementation of water-efficient plumbing code and water saving measures in new and renovated buildings are likely to achieve significant water saving results as well. The additional water demand from the additional academic facilities is well within the capacity of LA WWD40 and would likely be reduced with the proposed water conservation measures in the 2016 FMP. Therefore, the impact to water supplies would be less than significant.

Wastewater

According to the 2016 FMP, the Lancaster campus supported 11,730 full-time equivalent students (FTES) in 2014. It is anticipated to accommodate 15,908 FTES by 2030, an increase of 35.6 percent and an annual increase in 2.2 percent. As explained in the Potable Water discussion above, an additional 154 AVC employees would be needed to serve the increased student population based on the current staff to student ratio at the school. Table 4.10-8 shows the 2016 FMP's estimated wastewater generation based on LAWWD 40 flow rates. Using these rates, the net increase in

wastewater generation under the 2016 FMP from the increase in full-time students and employees, would be 407,208 gallons per day, or 0.4 million gallons per day (mgd).

Table 4.10-8 Wastewater Usage from Implementation of the Facilities Master Plan

Additional	Increase Amount	Wastewater Generation Rate (Gallons per capita per Day) [1]	Wastewater Generation (GPD)
AVC Employees	154	94	14,476
Full-Time Students	4,178	94	392,732
Total Net Increase			**407,208**

[1] Wastewater Generation Rate based on LAWWD 40 flow rates and population

Source: DPW 2004, AVCCD 2016

The wastewater generation rate used in Table 4.10-8 utilizes residential, commercial, and industrial flow rates averages over a 12 month period to get a per capita rate. This wastewater generation rate of 94 gpcd, however, is only 33% of the water use factor used in Table 4.10-7, reflecting the fact that much of the water consumed is used for purposes that do not produce wastewater flow, such as landscaping irrigation. In order to reflect the fact that the 2016 FTP's projected increase in FTES and AVC employees would not include a proportional increase in the amount of water used for irrigation on the project site, a more conservative estimate of wastewater demand is to assume that wastewater generation would be 80 percent of water demand. Applying this assumption to the estimated water demand of 1,263,095 gpd from Table 4.10-7, the estimated wastewater generated from the 2016 FMP would be 1,010,476 gpd, or 1.0 mgd.

The LWRP serves the project site, and can currently accommodate up to 18 mgd. In 2002, the average monthly wastewater flow was 12.8 mgd, and in December 2017 the flow rate ranged from 13.8 mgd to 25.5 mgd with an average of 14.3 mgd (Wert 2018). The LWRP 2020 Facilities Plan estimates that the average flow rate in 2020 will be 26 mgd, and provides details for facility expansion to accommodate increased flows from projected population growth. The conservative estimate of a 1.0 mgd increase in wastewater produced by the forecast increase in enrollment and staffing at AVC would equal 7.0 percent of the 2017 daily wastewater flow rate and 3.8 percent of the projected daily flow rate in 2020. Adding the 1.0 mgd to the average flow of 14.3 mgd in December 2017 produces a flow rate of approximately 15.3 mgd, which is well within the projected flow rate of 26 mgd in 2020. AVCCD will also provide any needed off campus improvements to local sewer lines and pay applicable connection fees to the Los Angeles County Sanitation District in order to fund construction of regional facilities and to ensure that there is adequate capacity to serve the 2016 FMP. Therefore, the 2016 FMP would not have a significant impact on wastewater facilities due to the current available capacity and the payment of connection fees.

The 2016 FMP would also involve demolishing a number of older buildings, constructing new facilities, and renovating older facilities. This will increase the proportion of buildings on campus that will comply with California Green Building code requirements for water efficient appliances and indoor infrastructure. Individual projects and buildings constructed under the 2016 FMP would be reviewed by DSA to ensure compliance with these standards, and for adequate wastewater infrastructure capacity. Therefore, implementation of the 2016 FMP would have a less than significant impact with respect to wastewater.

Mitigation Measures

No mitigation required.

Threshold 6:	Would the project be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?

Impact UTL-3 SOLID WASTE WOULD BE GENERATED BY CONSTRUCTION ACTIVITIES AND INCREASED STUDENT ENROLLMENT. THIS SOLID WASTE WOULD BE DISPOSED OF AT LOCAL LANDFILLS. HOWEVER, PROJECTED WASTE GENERATION WOULD REMAIN WITHIN THE CAPACITY OF LOCAL LANDFILLS AND IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The 2016 FMP would generate construction waste (e.g., concrete rubble, drywall, wood, metals, pipe, carpet, and other building materials) from demolition and construction activities carried out under the 2016 FMP. This would increase demand for solid waste collection from Waste Management, and disposal capacity from the Lancaster and Antelope Valley landfills. Construction and demolition materials account for an estimated 21 to 25 percent of California's waste disposal (CalRecycle 2017). Waste Management would require a scheduled operation for transporting waste created by construction and demolition activities. The Lancaster Landfill has recycling operations for concrete, asphalt, and building debris. These recycling operations would be used to reduce the waste generated by demolition and construction activities carried out under the 2016 FMP (Waste Management 2017).

An enrollment increase of 4,178 FTES is forecast through 2030. According to the Solid Waste Generation, Disposal, and Diversion Measurement Guide produced by California EPA Integrated Waste Management Board, an annual disposal factor of 0.12 can be applied to students and an annual disposal rate of 0.54 can be applied to employees in the education sector. Using 0.12 tons of waste per student per year, AVC is expected to generate approximately 501 tons of additional solid waste per year, or 1.4 tons per day, from the increased student population. The 154 additional employees serving the forecast increase in enrollment (U.S. News 2018) would generate 84 tons of waste per year. The additional 591 tons per year of waste generated by the project from students and faculty would be approximately 591 tons of waste per year, or 1.6 tons per day. Adding this to the current average daily disposal of 400 to 700 tons, the daily disposal of the Lancaster Landfill would be about 702 tons, well within the maximum daily capacity of 5,100 tons. Similarly, the average daily disposal at Antelope Valley Landfill is about 2,200 tons per day, and the 700 tons per day of additional waste from the 2016 FMP would not exceed the maximum daily capacity of 3,564 tons. Under the current permits, the Lancaster Landfill the expected closure date for the Lancaster Landfill is 2044 or when maximum capacity is reached and the expected closure date for Antelope Valley Landfill is 2042. Therefore, the solid waste disposal needs of the 2016 FMP would be well within the capacity of the local landfill and the 2016 FMP's potential impacts on landfills would be less than significant without mitigation.

Mitigation Measures

No mitigation required.

Threshold 7:	Would the project fail to comply with federal, state, and local statutes and regulations related to solid waste?

Impact UTL-4 ANTELOPE VALLEY COLLEGE IS WITHIN A JURISDICTION THAT IS ALREADY MEETING PER CAPITA RESIDENT AND EMPLOYEE SOLID WASTE REQUIREMENTS. THE 2016 FMP WOULD COMPLY WITH ALL APPLICABLE STATUES RELATED TO SOLID WASTE AND IMPACTS WOULD BE LESS THAN SIGNIFICANT.

AVC contracts with Waste Management to provide trash collection and disposal services for the project site. In carrying out the 2016 FMP, AVCCD would comply with all applicable federal and state statutes and regulations. AB 939 and SB 1016 require a 50 percent diversion rate of solid waste, which is equivalent to 6.4 pounds per day per resident and 23.2 pounds per day per employee, as shown in Table 9. In 2016, the per capita disposal rate for Lancaster residents was 4.2 ppd and the per capita rate for employees in Lancaster was 15.1 ppd. The 2016 FMP would produce approximately 1.4 tons of additional waste per day, or 2,800 pounds, for the increased student population. Similarly, the forecast enrollment increase would produce 0.23 tons of additional waste per day, or 460 pounds, from the added employees. This would equate to about 0.67 pounds per student per day and 2.98 pounds per employee per day. These would comply with the current per capita disposal rates in Lancaster. AVCCD is subject to AB 341, which requires that 75 percent of solid waste generated by public entities be diverted from landfill disposal through source reduction, recycling, or composting by 2020. The AVC Facilities Services Department ensures all campus waste is sorted and recycled appropriately. The campus is actively improving how it handles and reduces the waste stream and has recently installed a waste compactor and cardboard baler. The Lancaster Landfill and Recycling Center would be the primary landfill serving AVC. This facility has various recycling operations for building waste and concrete. Once collected, solid waste is transported to sorting/disposal facilities permitted to accept commercial solid waste, with each facility's operations routinely inspected by regional and state regulatory agencies for compliance with all applicable statutes and regulations. Given these facts, impacts associated with solid waste statutes and regulations would be less than significant.

Mitigation Measures

No mitigation required.

c. Cumulative Impacts

Water

The water-related impacts analysis in Impact UTL-2 is cumulative in nature because it takes into account water demand associated with development under the 2016 FMP, as well as water demand associated with other developments (existing and future) in the LA WWD40 service area based on information from LA WWD40's UWMP.

As described in Impact UTL-2, projected water demand in the LA WWD40 service area would not exceed available supply (based on existing data) during any drought years. The forecast increase in enrollment at Antelope Valley College would increase water demand by 3.7 AF per year, which is 0.007 percent of the 2015 water demand and 0.004 of the projected 2020 water demand, as seen in Table 4.10-7.

Furthermore, in compliance with Objective No. 3.1 of the City of Lancaster 2030 General Plan, the City will work to ensure that an adequate supply of domestic water is available to meet current

demand and future development. In addition, compliance with the Water Efficient Landscape Ordinance (Chapter 8.50 of the LMC) and a continued effort by the City of Lancaster to expand the use of recycled water and the Lancaster Recycled Water District Reuse Program will further reduce cumulative water demand as development continues. Therefore, the Project would not result in cumulatively considerable water supply impacts, and cumulative impacts would be less than significant.

Wastewater

Cumulative development would continue to increase demand on existing wastewater treatment and conveyance facilities. The 2016 FMP forecasted increase in enrollment would increase wastewater flow by about 1,263,095 gpd (1.0 mgd) which is about 7.0 percent of the 2017 daily flow rate and 3.8 percent of the 2020 projected flow rate of the LWRP. The City of Lancaster Utility Division would continue to manage, operate, and maintain the sanitary sewer system for its jurisdiction, including the project site. Current capacity of the LWRP is sufficient to serve planned and pending development in its service area. Implementation of Green Building Code requirements for water efficient appliances and infrastructure would help to reduce wastewater impacts with more efficient renovated and new buildings. Collection of sewer service charges on a project-by-project basis with the development of the 2016 FMP would also provide sufficient funding for the operation and maintenance of any increased impacts on the sanitary sewer collection system. Therefore, cumulative impacts to wastewater treatment and collection systems would be less than significant level and the 2016 FMP's contribution to wastewater service impacts would not be cumulatively considerable.

Solid Waste

The 2016 FMP would produce approximately 0.67 pounds per student per day and 2.98 pounds per employee per day in solid waste, which comply with the per capita disposal rates in Lancaster. Planned and pending development would also continue to increase solid waste generation in Lancaster and surrounding areas. As discussed under Impact UTL-3, the Lancaster Landfill has capacity to accommodate additional solid waste, and potential impacts of full buildout of the 2016 FMP would be less than significant. Cumulatively, other areas which utilize the Lancaster and Antelope Valley Landfills would likely also continue to experience growth and associated increases in solid waste generation. State-mandated solid waste diversion rates for recycling would continue to minimize the quantity of waste directed to area landfills, and compliance with Lancaster 2030 General Plan policies would maintain or improve upon existing solid waste diversion rates.

The Lancaster Landfill is expected to remain open with sufficient disposal capacity to accommodate its existing service territory until 2044 (CalRecycle 2017). The area also is served by the Antelope Valley Landfill and there are also several regional landfills in Los Angeles, Kern, Ventura, and Orange counties that can accept solid waste from the City of Lancaster and surrounding jurisdictions. Solid waste disposal facilities and management approach would continue to adjust as needed to provide adequate disposal capacity throughout the County, region, and state. Thus, cumulative impacts to solid waste facilities would be less than significant and the 2016 FMP's contribution to solid waste impacts would not be cumulatively considerable.

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4.11 Impacts Found Not to be Significant

This section summarizes the potential environmental effects of the project that were determined to be less than significant or have no impact, as described in the Initial Study for the project (refer to Appendix A). The items listed below are contained in the City's environmental checklist form and the environmental checklist form included in Appendix G of the *CEQA Guidelines*. Any items not addressed in this section have been addressed in Section 4.0, *Environmental Impact Analysis*, of this EIR. Section 4.0 also includes an expanded discussion of the settings under each environmental issue area discussed therein.

A summary of the analysis of issue areas for which no significant adverse impacts were identified is provided in this section. Please refer to the Initial Study (Appendix A) for the complete issue area analysis.

4.11.1 Aesthetics

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings in a state scenic highway?

There are no designated state scenic highways in the vicinity of the project site. The nearest designated state scenic highway is State Route 2, the Angeles Crest Scenic Byway, located approximately 25 miles southeast of the site. The project site is not visible from this roadway, due to distance and intervening topography. Thus, the project site is not visible from any state scenic highway, and the proposed project would not directly damage or block the view of a scenic resource from a designated state scenic highway. There are no other specific, officially-designated scenic resources on or in the vicinity of the project site. There would be no impact.

4.11.2 Agriculture and Forest Resources

Would the project:

a. Convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?

c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

d. Result in the loss of forest land or conversion of forest land to non-forest use?

e. Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

The project site is within an urbanized area in the City of Lancaster. No forest land, agricultural land, agriculturally zoned land, or land under Williamson Act contract exists in the vicinity of the project site. The proposed project would have no effect on forestland or the conversion of farmland to non-agricultural uses. Therefore, there would be no impact to agricultural and forest resources.

4.11.3 Air Quality

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

The educational uses proposed in the 2016 FMP are similar to those already existing on the site. Substantial objectionable odors are normally associated with such uses as agriculture, wastewater treatment, industrial facilities, or landfills, none of which are included in the 2016 FMP. The proposed project would therefore have a less than significant impact related to creation of objectionable odors.

4.11.4 Biological Resources

Would the project:

c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

The project site is not located on or in the vicinity of a federally protected wetland, and the project site is not located within an area that is subject to an adopted conservation plan. There would be no impact.

4.11.5 Geology and Soils

Would the project:

a.1. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving 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?

a.2. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

a.3. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

According to the Lancaster West Quadrangle AP map that covers the project site the project site is not located within or near an Alquist-Priolo (AP) fault zone, or on a known fault. No other seismic hazards (such as liquefaction zones or earthquake-induced landslide zones) are shown on or near the project site on this map.

On-site structures would be required to be constructed to comply with the California Building Code (CBC). Several geotechnical investigations have been conducted by United-Heider Inspection Group for construction projects at AVC which are included in the proposed 2016 FMP, including reports for the proposed Academic Commons Building, Community Center Building, CTE Building, and Photovoltaic Panel Array Structures, among others. These reports include recommendations for measures to comply with CBC Seismic Design Parameters, and have found that seismic ground shaking effects can be adequately addressed for each facility with incorporation of the recommended measures for each facility. Therefore, with adherence to the CBC and the recommendations of site-specific geotechnical reports, the facilities included in the proposed

project would be engineered to withstand the expected ground acceleration that may occur at the project site. In addition, project construction would be subject to review and approval by the Department of General Service's - Division of the State Architect (DSA) to ensure proper safety guidelines and all applicable buildings codes are adhered to.

a.4. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

The flat topography of the project site and its surroundings rules out potential impacts related to landslides. Therefore, there would be no impact.

b. Would the project result in substantial soil erosion or the loss of topsoil?

Because the project site is already developed, a substantial amount of impermeable surfaces already exist on the site. The proposed project would therefore not lead to a substantial change in the amount of impermeable surfaces on the project site, and substantial changes in runoff patterns or rates would not occur.

Any construction project carried out the proposed project would comply with the NPDES Multiple Separate Storm Sewer System (MS4) Permit issued by the Los Angeles Regional Water Quality Control Board, including implementation of Best Management Practices (BMPs) to reduce polluted runoff from the project site by retaining, treating, or infiltrating polluted runoff onsite. This would also help prevent increased runoff from the project site onto surrounding areas that could cause soil erosion or the loss of topsoil. Construction projects carried out the proposed project would submit a Dust Control Plan, in accordance with AVAQMD Rule 403, to the AVAQMD for review and approval. This impact would be less than significant.

c. Would the project be located on a geologic unit or soil that is made unstable as a result of the project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?

d. Would the project be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

As shown on Figure 2-3 of the Master Environmental Assessment for the City's General Plan, certain parts of Lancaster are located on soils with a moderate shrink-swell potential, and some areas have experienced sinkholes or fissures due to subsidence, but the project site is not in or near one of these areas.

On-site structures would be required to be constructed to comply with the CBC. In addition, as discussed in Impact a, the DSA would provide design and construction oversight, review, and approval for all construction plans proposed by AVC. The DSA has accessibility, structural safety, and historical buildings codes that the project would be required to adhere to. Lastly, several geotechnical investigations have been conducted, as discussed in impacts a.1 through a.3 above, and include recommendations to avoid soil instability issues with specific construction projects, as necessary. With adherence to the CBC, review and approval by the DSA, and compliance with recommendations in site-specific geotechnical reports, design and construction of the facilities included in the proposed project would be engineered to withstand any soil instability issues that may occur at the project site. This impact would be less than significant.

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 wastewater?

The project site is fully served by municipal utilities, including sewer, and would not use septic tanks or alternative wastewater disposal systems. Therefore, there would be no impact.

4.11.6 Hazards and Hazardous Materials

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

f. For a project near a private airstrip, would it result in a safety hazard for people residing or working in the project area?

The project site is not located within an area covered by an airport land use plan, or within two miles of a public airport or private airstrip. The closest airports or airstrips are the General William J. Fox Airfield, located approximately four miles to the northwest, and Palmdale Regional Airport, located approximately five miles to the southeast. There would be no impact.

h. Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

The project site is in an urbanized area and not adjacent to wildlands, and the Lancaster General Plan does not identify any wildland hazard areas in the vicinity. Therefore, there would be no impact.

4.11.7 Hydrology and Water Quality

Would the project:

a. Violate any water quality standards or waste discharge requirements?

e. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

f. Otherwise substantially degrade water quality?

Implementation of the proposed project would involve demolition, new construction, building renovations, change of use, and site development projects; however, the developed area of the project site would not substantially change under the proposed project. The proposed project would therefore not lead to a permanent, substantial change in the amount of impermeable surfaces or changes in drainage patterns on the project site, and permanent, substantial changes in runoff patterns or rates would not occur.

The proposed project would comply with the NPDES Multiple Separate Storm Sewer System (MS4) Permit issued by the Los Angeles Regional Water Quality Control Board, including implementation of BMPs to avoid such impacts. BMPs would reduce polluted runoff from the project site by retaining, treating, or infiltrating polluted runoff onsite. Additionally, construction projects disturbing 1 or more acres are required to obtain coverage under the statewide NPDES General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ. This is administered by the State Water Resources Control Board (SWRCB). The

applicant would also prepare a Storm Water Pollution Prevention Plan (SWPPP) that complies with the statewide permit.

Implementation of the proposed project would not violate any water quality standards or waste discharge requirements, create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or otherwise substantially degrade water quality. As such, this impact would be less than significant.

b. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

The Antelope Valley is located in a desert environment and underlain by a closed groundwater basin. The two primary sources of supply to the valley are imported water from the State Water Project (SWP) via the California aqueduct and groundwater extracted from the Antelope Valley groundwater basin. Water service to the project site would be provided by Los Angeles County Water Works District 40.

Implementation of the proposed project would involve an increase in the total amount of water-consuming facilities on the project site, but the 2016 FMP also includes water-saving features, such as plans for drought-tolerant and low water use landscaping. The Antelope Valley groundwater basin is in a state of overdraft. Records indicate that extraction has continued beyond the safe-yield levels, causing areas of land subsidence and the loss of basin (aquifer) storage. Although implementation of the proposed project may incrementally increase water consumption, the proposed project includes water conservation features and would not receive its water exclusively from groundwater supplies. Any increase in water consumption associated with the proposed project would therefore not be sufficiently substantial to deplete groundwater supplies. This impact would be less than significant.

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?

d. Would the project substantially alter the existing drainage pattern of the site or area, including the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?

As discussed under Impact a, e, f above, the developed area of the project site would not substantially change under the proposed project, and substantial changes in runoff patterns or rates would not occur. Potential impacts from temporary changes in drainage patterns due to construction would be addressed through compliance with the storm water quality regulations discussed under Impact a, e, f. This impact would be less than significant.

g. Would the project place housing in a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary, Flood Insurance Rate Map, or other flood hazard delineation map?

h. Would the project place structures in a 100-year flood hazard area that would impede or redirect flood flows?

The project site is not in a 100-year flood hazard area, as mapped on the FEMA flood maps for this portion of Lancaster. As shown on the FEMA flood maps, it is in Zone X, Areas of 0.2% annual chance flood (also known as the 500-year floodplain). There would be no impact.

i. Would the project expose people or structures to a significant risk of loss, injury, or death involving flooding, including that occurring as a result of the failure of a levee or dam?

According to the Master Environmental Assessment for the 2030 General Plan, the California Aqueduct and Little Rock Reservoir present some risk of overflow. In the event of a major earthquake, the Aqueduct might be breached. During such a break, millions of gallons of water could spill north across the western portion of the study area. Failure of the Little Rock Dam would result in the inundation of a large area north of the dam. However, Little Rock dam was improved in 1994 to meet seismic requirements, reducing the risk of this potential hazard to a less than significant level. Also, Action 4.1.1(f) of the General Plan is to Assist and encourage the efforts of the State and local entities responsible for regular maintenance of the California Aqueduct and the Little Rock Dam to reduce the risk of seismic failure and to ensure that water levels are kept at or below the designed safe water levels, thereby reducing the risk of overtopping. For these reasons, and because the project site is located approximately 4.5 miles from the Aqueduct and approximately 16 miles from Little Rock Dam, this impact would be less than significant.

j. Would the project result in inundation by seiche, tsunami, or mudflow?

The project site is located approximately 50 miles from the Pacific Ocean, at an elevation of approximately 2,400 feet above sea level, and thus would not be subject to inundation by tsunami. It is also not located sufficiently near any other large inland body of water for seiche to be a potential hazard. The project site is also not located in or near any hillside areas where mudflow could be a hazard, the nearest hillside areas being approximately five miles to the southwest. There would be no impact.

4.11.8 Land Use and Planning

a. Would the project physically divide an established community?

The proposed project is a plan for the future development of AVC, on a site that is already developed. The project does not include new roads or other facilities that would physically divide the community. Therefore, there would be no impact.

b. Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

The City of Lancaster establishes land use policy and practice in Lancaster through its General Plan and Municipal Code. The proposed project would not change the land use on the project site, which would continue to be a community college campus. The project site's zoning and land use designation are consistent with its use as a school.

Another policy document with relevance and applicability to the proposed project is the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) of the Southern California Association of Governments (SCAG). SCAG functions as the federally recognized Metropolitan Planning Organization (MPO) for Los Angeles, Orange, San Bernardino, Riverside, Ventura, and

Imperial Counties (SCAG Region). As the MPO, SCAG develops long-range regional transportation plans (RTPs) in cooperation with Caltrans and the U.S. Department of Transportation (US DOT). Utilizing much of the same regional data, it also prepares and/or assists other agencies in developing the state-required regional Sustainable Communities Strategy (SCS); population, housing, and employment growth forecasts; regional transportation improvement programs; regional housing needs allocations (RHNA); and air quality management plans.

Although SCAG has no direct land use authority, generalized land use planning consistency between local jurisdictions and SCAG is required by state law for purposes of meeting state-required environmental quality goals and/or for eligibility for a wide range of transportation and other types of intergovernmental grants and funding programs that have long-range positive environmental impacts. In already-developed areas, the RTP/SCS largely incorporates local land use plans provided to SCAG by local jurisdictions during development of the SCS/RTP. Because the proposed project is consistent with existing uses and Lancaster's land use plan, it would also be generally consistent with the RTP/SCS in terms of land use.

Because the proposed project is a plan for the future development of an existing community college campus in an already-developed area, but would not expand the physical boundaries of this campus, the proposed project is a form of infill development, which is consistent with foundational policy #1 of SCAG's 2016 RTP/SCS, which is to identify regional strategic areas for infill and investment. The proposed project has no features that would conflict with any of the foundational policies of SCAG's 2016 RTP/SCS. The proposed project would therefore not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. There would be no impact.

c. Would the project conflict with an applicable habitat conservation plan or natural community conservation plan?

The project site is not located within an area that is subject to an adopted conservation plan. There would be no impact.

4.11.9 Mineral Resources

Would the project:

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

The project site is already developed, and is not in an area of known mineral resources. There would be no impact.

4.11.10 Noise

For a project:

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

f. Within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise?

The project site is not located within an area covered by an airport land use plan, or within two miles of a public airport or private airstrip. The closest airports or airstrips are the General William J. Fox Airfield, located approximately four miles to the northwest, and Palmdale Regional Airport, located approximately five miles to the southeast. There would be no impact.

4.11.11 Population and Housing

Would the project:

a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

While the 2016 FMP would accommodate an increase in FTES at AVC, this FTES increase is based on estimates of future demand for AVCCD's services, and the 2016 FMP would accommodate, not cause, this increase. The proposed project does not include any residential components, and would not extend roads or other infrastructure into new areas. Since the proposed project would not result in the displacement of any existing housing or people, and would not directly or indirectly induce population growth in the area, this impact would be less than significant.

4.11.12 Public Services

a.1., a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire or police protection facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The City of Lancaster contracts with the Los Angeles County Fire Department for fire and paramedic services. There are currently six fire stations within the City of Lancaster, as well as one in the unincorporated community of Antelope Acres and one in the unincorporated community of Quartz Hill. Of these six fire stations, the closest to the project site is Los Angeles County Fire Department Station 134, located at 43225 25th Street West, approximately one mile from the project site. The City of Lancaster contracts with the Los Angeles County Sheriff's Department (LASD) for police services. The Lancaster Sheriff's station is located approximately three miles northeast of the project site, at 501 West Lancaster Boulevard in downtown Lancaster.

Because the proposed project would accommodate, not cause, population growth (see Section 4.11.12, *Population and Housing*), it would not create the need for new or physically altered fire or

police protection facilities that could cause significant environmental impacts. Impacts related to provision of fire and police protection facilities would be less than significant.

a.3. – a. 5. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, parks, or other governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The City of Lancaster is served by four public school districts: Antelope Valley Union High School District (AVUHSD), Eastside Union School District (EUSD), Lancaster School District (LSD), and the Westside Union School District (WUSD). Parks and recreational facilities are made available to Lancaster residents through the Department of Parks, Recreation, and Arts. Public library services in Lancaster are provided by the Los Angeles County Public Library system.

Because the proposed project would accommodate, not cause, population growth (see Section 4.11.12, *Population and Housing*), it would not create the need for any other new or physically altered schools, and accordingly, would not generate construction that has the potential to cause significant environmental impacts. Thus, impacts to parks, schools, and other governmental facilities (including schools) would be less than significant.

4.11.13 Recreation

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?

The proposed project would not substantially increase demand for parks. It would therefore not 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. This impact would be less than significant.

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?

The 2016 FMP includes plans for future new or renovated recreational facilities, including a new Field House and a renovated Gymnasium. Space for the new Field House will be created by relocating existing modular buildings. The new Field House will meet accessibility requirements for restrooms, locker rooms, first-aid & training rooms and equipment areas for the athletic complex. The facility will support community and college events. The existing gymnasium was built in 1961 and is in poor condition. The FMP recommends a complete renovation of the existing facility to correct building deficiencies and address the current and projected kinesiology program needs.

The potential environmental effects of these proposed facilities are part of the overall environmental effects of the proposed project, which are analyzed throughout this EIR. The proposed recreational facilities would have no separate environmental impacts which might have an adverse physical effect on the environment. There would be no impact.

4.11.14 Transportation/Traffic

c. Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

The project site is not located within an area covered by an airport land use plan. The closest airports or airstrips are the General William J. Fox Airfield, located approximately four miles to the northwest, and Palmdale Regional Airport, located approximately five miles to the southeast. There are no elements of the proposed project that would increase or change the location of air traffic, and the 2016 FMP does not include any exceptionally tall facilities or facilities that would otherwise pose a hazard to aviation. There would be no impact.

4.11.15 Utilities and Service Systems

c. Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

As discussed under Item a, e, f, in Section 4.11.7, *Hydrology and Water Quality*, the proposed project would not create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems. No new storm water drainage facilities would be required, and there would be no impact.

5 Other CEQA Required Discussions

This section discusses growth-inducing impacts, irreversible environmental impacts, and energy impacts that would be caused by implementation of the 2016 FMP.

5.1 Growth Inducement

Section 15126(d) of the CEQA Guidelines requires a discussion of a proposed project's potential to induce economic or population growth, including ways in which a project could remove an obstacle to growth. Growth does not necessarily create significant physical changes to the environment. However, depending upon the type, magnitude, and location of growth, it can result in significant adverse environmental effects. The proposed project's growth-inducing potential is therefore considered significant if project-induced growth could result in significant physical effects in one or more environmental issue areas.

5.1.1 Population Growth

As discussed Section 13, *Population and Housing*, of the Initial Study (Appendix A), the 2016 FMP would not directly generate population growth because it does not include residential uses. While the 2016 FMP would accommodate an increase in FTES at AVC, this FTES increase is based on estimates of future demand for AVCCD's services, and the 2016 FMP would not cause this increase. The 2016 FMP would not extend roads or other infrastructure into new areas and would not directly or indirectly induce substantial population growth in the area.

5.1.2 Economic Growth

Implementation of the 2016 FMP and growth in enrollment would generate temporary employment opportunities during construction of its different phases of development. Because construction workers would be expected to be drawn from the existing regional work force, temporary employment created by this construction would not be growth-inducing. Although new uses are proposed, the 2016 FMP projects are mostly relocations, renovations, and changes of use, with new buildings generally replacing existing buildings proposed for demolition. As discussed in Impact UTL-2 in Section 4.10, Utilities and Service Systems, of this EIR, approximately 154 employees would be added at the AVC campus to serve the forecast enrollment increase of 4,187 FTES. These 154 jobs would not result in an exceedance of SCAG's employment growth forecasts for Lancaster, which forecast that 13,800 jobs will be added in the Lancaster between 2012 and 2040 (SCAG 2016a). Rather, these 154 jobs would equal 1.1% of the SCAG-projected increase.

It should be noted that the 2016 FMP is intended to provide a framework for implementing the goals and policies of the College's Educational Master Plan by identifying facilities and infrastructure improvements at the existing campus, which would meet the educational needs of the Antelope Valley residents. As such, the economic growth anticipated by AVC would be in direct response to the identified needs of the surrounding area.

For the reasons discussed above, implementation of the 2016 FMP would not induce substantial economic expansion resulting in direct physical environmental effects.

5.1.3 Removal of Obstacles to Growth

The project site is located in a fully urbanized area served by existing infrastructure. As discussed in Section 4.10, *Utilities*, and Section 4.8, *Transportation and Traffic* of this EIR, existing infrastructure in and around the project site would be adequate to serve the project. Minor improvements to water, sewer, and drainage connection infrastructure could be needed, but would be sized to specifically serve the proposed uses included in the 2016 FMP. Although the proposed project would include construction of new access points to the campus, as discussed in Section 2.5 *Project Characteristics*, the new access points would not substantially change existing circulation such that significant impacts would occur, and would be intended to accommodate expected traffic volumes and project site access needs. No new roads would be required. Because implementation of the 2016 FMP would involve infill redevelopment within an urbanized area and does not require the extension of new infrastructure through undeveloped areas, it would not remove an obstacle to growth.

5.2 Irreversible Environmental Effects

The CEQA Guidelines require that EIRs contain a discussion of significant irreversible environmental changes. This section addresses non-renewable resources, the commitment of future generations to the proposed uses, and irreversible impacts associated with implementation of the 2016 FMP.

Implementation of the 2016 FMP would involve infill development on the already-developed project site. Construction and operation of projects carried out under the 2016 FMP would involve an irreversible commitment of construction materials and non-renewable energy resources. Such construction would involve the use of building materials and energy, some of which are non-renewable resources. Consumption of these non-renewable resources would occur with any development in the region, and are not unique to the 2016 FMP.

Implementation of the 2016 FMP would also irreversibly increase local demand for non-renewable energy resources such as petroleum products and natural gas. However, increasingly efficient building design would offset this demand to some degree by reducing energy demands. As discussed in Section 4.10, *Utilities and Service Systems*, projects carried out under the 2016 FMP would be subject to the energy conservation requirements of the California Energy Code (Title 24, Part 6, of the California Code of Regulations, *California's Energy Efficiency Standards for Residential and Nonresidential Buildings*) and the California Green Building Standards Code (Title 24, Part 11 of the California Code of Regulations). The California Energy Code provides energy conservation standards for all new and renovated commercial buildings constructed in California, and the Green Building Standards Code requires solar access, natural ventilation, and stormwater capture. Consequently, projects carried out under the 2016 FMP would not use unusual amounts of energy or construction materials and impacts related to consumption of non-renewable and slowly renewable resources would be less than significant. Again, consumption of these resources would occur with any development in the region and is not unique to the 2016 FMP.

Additional vehicle trips associated with implementation of the 2016 FMP would incrementally increase local traffic and regional air pollutant and GHG emissions. However, as discussed in Section 4.2, *Air Quality*, and Section 4.5, *Greenhouse Gas Emissions* of this Draft EIR, implementation of the 2016 FMP would not generate air quality or GHG emissions that would result in a significant impacts or exceedances of thresholds established by the AVAQMD. Additionally, Section 4.8, *Transportation and Traffic*, of this Draft EIR, concludes that long-term transportation impacts from implementation

of the 2016 FMP, as well as its contribution to cumulative impacts, would be less than significant based on City and regional thresholds.

Implementation of the 2016 FMP would also require a commitment of law enforcement, fire protection, water supply, wastewater treatment, and solid waste disposal services. However, as discussed in Section 4.14, *Public Services*, of the Initial Study (Appendix A) and Section 4.10, *Utilities and Service Systems*, of this Draft EIR, impacts to these service systems would not be significant.

CEQA requires decision makers to balance the benefits of a proposed project against its unavoidable environmental risks in determining whether to approve a project. The analysis contained in this Draft EIR concludes that implementation of the 2016 FMP would result in potentially significant and unavoidable impact related to demolition of potentially significant historic resources. This potentially significant and unavoidable environmental impact could result in the irreversible loss of historical resources.

5.3 Energy Effects

California used 292,039 gigawatt-hours (GWh) of electricity in 2017 and 2,313 billion cubic feet of natural gas in 2012 (CEC 2016a,2016b). Californians presently consume over 15 billion gallons of motor vehicle fuels per year (CEC 2017a). Public Resources Code Section 21100(b)(2) and Appendix F of the CEQA Guidelines require that EIRs include a discussion of the potential energy consumption and/or conservation impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful or unnecessary consumption of energy.

Each project carried out under the 2016 FMP would involve the use of energy during its construction and operation. Energy use during the different phases of construction would be in the form of fuel consumption (e.g., gasoline and diesel fuel) to operate heavy equipment, light-duty vehicles, and machinery. In addition, temporary grid power may also be provided to any temporary construction trailers or electric construction equipment. Long-term operation of projects would require permanent grid connections for electricity and natural gas service to power internal and exterior building lighting, and heating and cooling systems.

Southern California Edison (SCE) would continue to provide electricity service to the project site. SCE's power mix consists of approximately 28 percent renewable energy sources (wind, geothermal, solar, hydroelectric, geothermal, and biomass) (CEC 2017b). Gas service would be provided by Southern California Gas Company (SoCalGas). According to SoCal Gas, natural gas is available in abundance domestically, with sufficient natural gas, in its traditional form, to meet the country's demand for more than 100 years (SoCalGas 2018). New technologies also offer the potential to capture methane, the primary ingredient in natural gas, from existing waste stream sources to make a renewable form of natural gas.

CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. Complete CalEEMod results and assumptions can be viewed in Appendix C of this Draft EIR.

Estimated motor vehicle fuel consumption from implementation of the 2016 FMP, as calculated from CalEEMod, is shown in Table 5-1. Total estimated energy usage, including motor vehicle fuel, is summarized and compared to statewide usage in Table 5-2.

Table 5-1 Estimated 2016 FMP Annual Motor Vehicle Fuel Consumption

Vehicle Type	Percent of Vehicle Trips[1]	Annual Vehicle Miles Traveled[2]	Average Fuel Economy (miles/gallon)[3]	Total Annual Fuel Consumption (gallons)
Passenger Cars	55%	5,838,158	37.7	156,940
Light/Medium Trucks	37%	4,352,081	22	197,822
Heavy Trucks/Other	7%	371,519	6.4	58,050
Motorcycles	0.5%	53,074	43.9	1,209
Total	100%	10,614,832	–	414,021

[1] Percent of vehicle trips found in Table 4.4 "Fleet Mix" in CalEEMod output (see Appendix C of this Draft EIR)
[2] Unmitigated annual VMT found in Table 4.2 "Trip Summary Information" in CalEEMod output (see Appendix C of this Draft EIR)
[3] Average fuel economy for light/medium trucks, heavy trucks/other, and motorcycles provided by the United States Department of Transportation, Federal Highway Administration (2017); average fuel economy for passenger vehicles provided by the United States Department of Transportation, Bureau of Transportation Statistics (2018).
Note: Totals may not add up due to rounding.

Table 5-2 Estimated 2016 FMP Energy Usage Compared to State-Wide Energy Usage

Form of Energy	Units	Annual Project-Related Energy Use	Annual State-Wide Energy Use	Project % of State-Wide Energy Use[6]
Electricity	mWh	1,786[1]	292,039,000[2]	0.0006%
Natural Gas	kBTU	3,468,933[1]	2,313,000,000,000[3]	0.001%
Motor Vehicle Fuels	gallons	414,021[4]	15,000,000,000[5]	0.003%

[1] Energy Use provided in the CalEEMod output (see Appendix C);
[2] CEC 2016a
[3] CEC 2016b
[4] See Table 5-1.
[5] CEC 2017
[6] As a conservative estimate that those uses have not been subtracted.

Implementation of the 2016 FMP would result in increased weekday trips, and vehicle miles traveled (VMT) compared to the current conditions, but would make a minimal contribution to statewide energy consumption and would not adversely affect energy supplies.

Development carried out under the 2016 FMP would adhere to the energy conservation requirements of the California Energy Code (Title 24, Part 6, of the California Code of Regulations, *California's Energy Efficiency Standards for Residential and Nonresidential Buildings)* and the California Green Building Standards Code (Title 24, Part 11 of the California Code of Regulations). The California Energy Code provides energy conservation standards for all new and renovated commercial buildings constructed in California. The Code applies to the building envelope, space-conditioning systems, and water-heating and lighting systems of buildings and appliances. The Code provides guidance on construction techniques to maximize energy conservation. Minimum efficiency standards are given for a variety of building elements, including: appliances; water and space heating and cooling equipment; and insulation for doors, pipes, walls and ceilings. The Code emphasizes saving energy at peak periods and seasons, and improving the quality of installation of

energy efficiency measures. In addition, the California Green Building Standards Code sets targets for: energy efficiency; water consumption; dual plumbing systems for potable and recyclable water; diversion of construction waste from landfills; and use of environmentally sensitive materials in construction and design, including ecofriendly flooring, carpeting, paint, coatings, thermal insulation, and acoustical wall and ceiling panels.

Projects carried out under the 2016 FMP would comply with Title 24 standards. In addition, page 61 of the 2016 FMP states that all new buildings, developments, and major renovations shall be carbon neutral by 2030, with a target for energy use intensity (EUI) of 31.2 kBtu/gsf, less than half of the current campus EUI (AVCCD 2016). Meeting Title 24 energy conservation requirements in combination with the project's proposed energy efficiency features (such as low energy efficient LED fixtures and boiler systems) would ensure that energy is not used in an inefficient, wasteful, or unnecessary manner per Public Resources Code Section 21100(b)(2).

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6 Alternatives

As required by Section 15126.6 of the *CEQA Guidelines*, this section of the EIR examines a range of reasonable alternatives to the proposed update to the 2016 FMP that would feasibly attain most of its basic objectives but would avoid or substantially lessen any of its significant effects on the environment. Section 15126.6 also requires consideration of the "No Project" alternative, regardless of whether it would achieve the project objectives or lessen the project's environmental effects. The overarching objective of the 2016 FMP is to serve as a guide for a 30-year program of future development on the AVC Lancaster campus. Within this overarching framework, the 2016 FMP is designed to achieve the following objectives:

- Commitment to strengthening Institutional Effectiveness measures and practices
- Increase efficient and effective use of all resources, including technology, facilities, human resources, and business services
- Focus on utilizing proven instructional strategies that will foster transferrable intellectual skills
- Advance more students to college-level coursework by developing and implementing effective placements tools
- Align instructional programs to the skills identified by the labor market

Included in this analysis are three alternatives, including the CEQA-required "no project" alternative, that involve changes to the project that may reduce project-related environmental impacts as identified in this EIR. Alternatives have been developed to provide a reasonable range of options to consider that would help decision makers and the public understand the general implications of revising or eliminating certain components of the proposed project.

The following alternatives are evaluated in this EIR:

- Alternative 1: No Project
- Alternative 2: Re-Use of Existing Facilities
- Alternative 3: Preservation of Campus Core/Existing Paved Surface Development

Detailed descriptions of the alternatives are included in the impact analysis for each alternative. The potential environmental impacts of each alternative are analyzed in Sections 6.1 through 6.3.

6.1 Alternative 1: No Project

6.1.1 Description

The No Project Alternative assumes that none of the new construction projects included in the 2016 FMP would be carried out. This would mean that none of the new facilities, demolitions, renovations, and changes of use of specific buildings would occur. All of the existing facilities on the project site, consisting of, but not limited to, classrooms, social service buildings, stadiums, parking lots, etc., would remain in their current configuration under this alternative. Since no development, construction, or operational changes would occur, the No Project Alternative would not allow for

AVC to accommodate projected FTES increases, and would not fulfill one of the project objectives, which is to increase efficiency and effectively use all campus resources, including facilities.

6.1.2 Impact Analysis

a. Aesthetics

Under the No Project Alternative, no construction or physical alterations to the existing campus would occur. The existing layout of the project site would remain identical to existing conditions, and there would be no changes to the existing visual character or quality of the campus. In addition, since no construction or physical changes would occur, there would be no additional sources of light or glare generated on the project site. As such, overall aesthetic impacts would be less than those of the 2016 FMP and, as with the 2016 FMP, no mitigation measures would be required.

b. Air Quality

Overall air quality impacts associated with this alternative would be less than those of the 2016 FMP, since none of the construction activities accommodated by the 2016 FMP would be implemented. Therefore, this alternative would not result in the generation of construction-related or operational emissions associated with implementation of the 2016 FMP. Overall, since this alternative would not result in construction emissions or operational emissions, and thus would not expose receptors to substantial concentrations, this alternative would result in fewer air quality impacts than the 2016 FMP and, as with the 2016 FMP, no mitigation would be required.

c. Biological Resources

Under the No Project Alternative, no construction would occur, which would reduce construction-related impacts associated with disruptions to special status plant and animal species and nesting birds/wildlife corridors. Existing conditions on the project site would remain the same, and therefore, overall impacts to biological resources would be less than those discussed in Section 4.3, *Biological Resources.* Mitigation Measure BIO-1 (Preconstruction Nesting Bird Surveys), would no longer be required, as no construction activities with potential to interfere with identified special status plant or animal species or nesting birds would occur. Impacts to biological resources under Alternative 1 would be less than those of the proposed 2016 FMP and this alternative would avoid the need for mitigation required for the 2016 FMP.

d. Cultural Resources

Under the No Project Alternative, no construction would occur, thereby eliminating potential ground disturbance and physical alterations to buildings. No ground disturbance or other general earthwork would occur, therefore there would be no potential to uncover or damage previously undiscovered sensitive resources. As such, impacts pertaining to archaeological, paleontological, and historic resources would all be eliminated. The mitigation measures designed to reduce impacts to archaeological resources (CR-2(a) through CR-2(c)) and paleontological resources (CR-3), would no longer be required under the No Project alternative. In addition, since no renovations, changes of use, or other modifications would occur, there would be no potential to alter potentially historic resources on-site. Accordingly, Alternative 1 would avoid the 2016 FMP's significant and unavoidable impact to potentially historic resources and Mitigation Measures CR-1(a) through CR-1(d) would not be required. Overall, impacts to cultural resources would be less than those of the

proposed 2016 FMP, and this alternative would avoid the need for mitigation measures required of the 2016 FMP.

e. Greenhouse Gas Emissions

As discussed in Section 4.5, *Greenhouse Gas Emissions*, the generation of greenhouse gas (GHG) emissions is primarily a result of construction and operational activities. Under the No Project Alternative, no construction would occur; therefore, no construction-related GHG emissions would occur. Since the 2016 FMP would accommodate expected FTES increases, and not cause them, increased vehicle trips and associated greenhouse gas pollutants associated with the increases, would occur independently of adoption of the 2016 FMP. Therefore, mobile source GHG emissions under Alternative 1 would be similar to those of the 2016 FMP. For the same reason, on-site operational emissions from sources such as energy and water use, solid waste, etc., would increase proportionally to FTES increases independently of adoption of the 2016 FMP, and GHG emissions from these sources would also be similar to those of the 2016 FMP. Overall, the No Project Alternative's GHG emission impacts would be less than those of the proposed 2016 FMP because of reduced construction emissions, and, as with the 2016 FMP, no mitigation would be required.

f. Hazards and Hazardous Materials

Since no development, construction, or operational changes would occur under the No Project Alternative, this alternative would result in fewer impacts related to the transport, use, and disposal of hazardous materials. AVC would continue to utilize existing hazardous materials through regular use from classrooms, maintenance, and service activities. As discussed in Section 4.6, *Hazards and Hazardous Materials*, several buildings located on campus were built prior to 1979, which indicates a high likelihood for the presence of lead based paint and asbestos containing materials. Mitigation Measure HAZ-1, which requires preparation of lead based paint and ACM surveys would not be required under the No Project Alternative, however, since demolition of facilities would not be proposed and disturbance of these potentially present hazards would not occur. Although the potential contaminants would not be disturbed, potential abatement of these hazards would also not occur. Therefore the potential contaminants may continue to be present on-site, which could lead to eventual hazardous material exposure.

Since no construction or operational changes would occur under this alternative, there would be no potential to disrupt or interfere with evacuation or emergency procedures. Overall, impacts related to hazards and hazardous materials under the No Project Alternative would be less than those of the proposed 2016 FMP and this alternative would avoid the need for implementation of Mitigation Measure HAZ-1.

g. Noise

Because no development, construction, or operational changes would occur under the No Project Alternative, this alternative would result in fewer impacts with respect to the generation of noise. Since there would be no construction of individual projects, noise-sensitive receptors surrounding the project site, as well as individual facilities located on-site, would not experience or be subject to construction noise or vibration, and there would be no potential for construction activity to result in significant negative impacts on noise-sensitive receptors. Therefore, Mitigation Measure N-1 would not be required in order to reduce construction related noise and vibration.

The 2016 FMP would accommodate, not cause, the projected FTES increases; therefore, additional vehicle trips due to this anticipated enrollment growth would still occur, resulting in incremental

increases to roadway noise. As discussed in Impact N-3, the proposed 2016 FMP's contribution to operational traffic noise would be less than significant. Consequently, impacts pertaining to operational traffic noise under the No Project Alternative would be similar to those of the 2016 FMP. Since the No Project Alternative would not result in any construction noise or vibration, and would not change existing operational noise-generating sources, overall noise impacts would be less than those of the 2016 FMP and mitigation would not be required.

h. Transportation and Traffic

Under the No Project Alternative, temporary traffic delays associated with the 2016 FMP's construction activities would be eliminated. Since no construction would occur, any and all temporary lane closures, detours, and right-of-way conflicts associated with these activities would not occur. As discussed in Section 2, *Project Description*, projected increases in FTES would occur independently of the implementation of the 2016 FMP; therefore, the transportation network would experience an increase in vehicle trips in the No Project Alternative regardless of 2016 FMP adoption. Although operational impacts to the off-site transportation network under this alternative would be similar to those of 2016 FMP, this alternative would not include construction of the new access points to the project site included in the 2016 FMP; therefore, it would not allow for the increased accessibility and circulation to the project site that these improvements would provide. While no construction impacts would occur under the No Project Alternative, on-site operational traffic impacts would be greater under this alternative than under the 2016 FMP. Overall traffic impacts under this alternative would therefore be similar to those of the 2016 FMP, and, as with the 2016 FMP, would be less than significant without mitigation.

i. Tribal Cultural Resources

Under the No Project Alternative, no construction would occur; therefore the potential to uncover subsurface archaeological resources of tribal cultural significance would be eliminated. As such, Mitigation Measure TCR-1 would not be required, and there would be no impacts to tribal cultural resources. Overall impacts to tribal cultural resources would less than those of the 2016 FMP.

j. Utilities and Service Systems

Under the No Project Alternative, existing facilities on the project site would not be demolished, renovated, or experience a change of use, and conditions on the project site would remain similar to existing conditions. Expected increases in water, wastewater, stormwater, and solid waste generation or consumption would continue to occur under the No Project Alterative, as AVC anticipates an increase in FTES, regardless of implementation of the 2016 FMP. Under the No Project Alternative, any renovations, upgrades, or maintenance activities included in the 2016 FMP would no longer occur, including any modifications to accommodate these FTES increases. Overall impacts to utilities and service systems under this alternative, however, would be generally similar to those of the proposed 2016 FMP because increases in FTES would result in increased demand for utilities and service systems. As with the 2016 FMP, this alternative's impact would be less than significant without mitigation.

6.2 Alternative 2: Re-Use of Existing Facilities

6.2.1 Description

Figures 2-3 and 2-4 in Section 2, *Project Description*, show the existing AVC campus map and the proposed 2016 FMP campus map, respectively. This alternative would involve re-use, renovation, and changing use of existing buildings, rather than demolition of existing structures and construction of new buildings. This alternative would retain the existing general layout of the project site and focus on internal changes to classrooms, buildings, and other facilities, to avoid demolition and ground disturbance that would be required by proposed activities under the proposed 2016 FMP.

This alternative would not result in many of the changes to building architecture, internal circulation, landscaping, classroom size/space, etc., included in the 2016 FMP, and therefore would not achieve the project objective of increasing efficiency and effectively using all campus resources, including facilities, to as great a degree as the 2016 FMP. It would, however, still achieve some of the other 2016 FMP project objectives by retaining the 2016 FMP's commitment to strengthening Institutional Effectiveness measures and practices, and allowing for the focus of utilizing proven instructional strategies that foster transferrable intellectual skills.

6.2.2 Impact Analysis

a. Aesthetics

Similar to the No Project Alternative, this alternative would not result in substantial changes to the existing visual character and quality of the project site. Alternative 2 would reuse existing buildings in their current locations, and therefore, visual conditions on the project site compared to existing conditions would not change as much as under the 2016 FMP. Slight building modifications and renovations would occur to ensure that buildings are up to current building codes, however, demolitions and substantial remodeling would not occur. All changes would continue to occur in the existing campus footprint and layout; therefore view corridors and overall visual character would not change substantially. Additional sources of light and glare would be introduced on campus for general security and visibility; however, these light sources would be similar to those analyzed for the proposed 2016 FMP, and impacts would remain less than significant. Overall aesthetic impacts would be similar to those of the proposed 2016 FMP and, as with the 2016 FMP, no mitigation measures would be required.

b. Air Quality

Alternative 2, would involve re-use of existing facilities, rather than new construction. Therefore, the emissions of criteria pollutants from construction activity would be reduced, and sensitive receptors surrounding the site would be exposed to fewer construction-related emissions. Operational air quality emissions from increased vehicle trips, stationary sources, energy use, and other buildings modifications would or could still occur. The 2016 FMP would result in an approximately 143,000 square-foot increase in built facilities compared to existing conditions. On-site operational emissions from stationary sources such as energy consumption would be reduced under this alternative because it would result in a reduction of this increase in built square footage, but these reductions could be offset by retaining older, less energy-efficient buildings requiring higher energy consumption from sources such as air conditioning, rather than replacing them with

newer, more energy-efficient systems. Overall, on-site operational emissions would be similar to those of the 2016 FMP. Similar to the 2016 FMP, no obstructions or conflicts with applicable air quality plans would occur since anticipated growth is consistent with regional forecasts.

Overall, this Alternative would result in fewer construction emissions, and could also result in fewer operational emissions. Therefore, impacts to air quality under this alternative would be slightly less than those of the 2016 FMP, and, as with the 2016 FMP, would be less than significant without the need for mitigation.

c. Biological Resources

Because Alternative 2 would not involve construction of new facilities, it would involve less ground disturbance than under the 2016 FMP. Potential construction impacts to sensitive plants or animals, particularly nesting birds, would therefore be reduced, and Mitigation Measure BIO-1 would no longer be required. Impacts to existing trees and landscaped areas would be reduced, as new development that has the potential to impact these resources would no longer occur. Overall, impacts to biological resources would be less than those of the 2016 FMP and this alternative would avoid the need for Mitigation Measure BIO-1, which is required for the 2016 FMP.

d. Cultural Resources

No ground disturbance would occur under Alternative 2, since existing facilities would be reused rather than constructing new facilities. This would eliminate the potential to uncover and damage archaeological or paleontological resources. No earthwork would be required, and mitigation measures for unanticipated discovery of archaeological and paleontological resources would not be required.

Avoiding demolition of existing buildings would reduce impacts to potentially significant historic resources. These impacts would not be completely avoided, however, since renovations and internal facility improvements would occur under this alternative that could result in activity that alters potentially historic structures. Mitigation Measures CR-1(a) through CR-1(d) would still be required in order to identify potential historic buildings, as well as implement identified documentation practices for historic resource alteration. Although Alternative 2's overall impacts to cultural resources would be less than those of the 2016 FMP, this impact would still require mitigation to reduce impacts to historic resources, and impacts to historic resources would remain potentially significant and unavoidable.

e. Greenhouse Gas Emissions

Since no new facilities would be built under this alternative, which would instead reuse existing buildings, construction-related GHG emissions would be reduced. As discussed in Impact GHG-1 in Section 4.5, Greenhouse Gas Emissions, the 2016 FMP would result in an approximately 143,000 square-foot increase in built facilities compared to existing conditions. On-site operational emissions from stationary sources such as energy consumption could be reduced under this alternative if it resulted in a reduction of this increase in built square footage, but these reductions could be offset by retaining older, less energy-efficient buildings requiring higher energy consumption from sources such as air conditioning, rather than replacing them with newer, more energy-efficient buildings. On-site operational emissions would therefore be similar to those of the 2016 FMP. Operational GHG emissions from vehicle trips would be similar to the proposed 2016 FMP because the projected FTES increase would still occur. This alternative would not conflict with applicable GHG reduction plans. Overall, this alternative's impacts would be similar to, but slightly less than those of the

proposed 2016 FMP since new construction would not occur. As with the 2016 FMP, this impact would be less than significant and no mitigation measures would be required.

f. Hazards and Hazardous Materials

Under Alternative 2, operational impacts regarding the transport, use, and disposal of hazardous materials would be similar to those of the proposed 2016 FMP. While demolition of existing structures would not occur, this alternative could still result in internal structural alterations to adaptively reuse existing structures, which could result in the release of asbestos containing materials and lead based paint. Therefore, the impact related to these potential hazards would be potentially significant and implementation of Mitigation Measure HAZ-1 would still be required.

Operation of campus activities under Alternative 2 would be similar to the proposed 2016 FMP, so impacts regarding impairment of evacuation plans, potential releases of hazardous materials near schools, and development on contaminated sites would all remain less than significant. As described above, overall impacts related to hazards and hazardous materials under this Alternative would be similar to those of the 2016 FMP, and, as with the 2016 FMP, Mitigation Measure HAZ-1 would be required.

g. Noise

Alternative 2 would result in fewer construction-related noise impacts than the 2016 FMP, as this alternative would reuse existing facilities rather than constructing new ones. Construction noise and vibration impacts would therefore be reduced and Mitigation Measure N-1 would not be required. Under this alternative, sensitive receptors would not be exposed to noise levels exceeding applicable thresholds and impacts would be less than significant.

Additional vehicle trips due to the enrollment growth anticipated under the 2016 FMP would still occur under this alternative, resulting in incremental increases to roadway noise. As discussed in Impact N-3, the proposed 2016 FMP's contribution to operational traffic noise would be less than significant; therefore, impacts pertaining to operational traffic noise under this alternative would also be less than significant. Because new facilities proposed under the 2016 FMP would not be built under this Alternative, which would instead focus on adaptively reusing existing structures, this alternative would produce less on-site operational noise than the 2016 FMP, since on-site operational noise from new facilities would not occur. Since this alternative would reduce construction noise and vibration, and slightly reduce operational noise generating sources compared to the 2016 FMP, overall noise impacts would be slightly less than those of the proposed 2016 FMP and mitigation would not be required.

h. Transportation and Traffic

Under Alternative 2, forecast trip generation would be similar to the proposed 2016 FMP, and as discussed in Section 4.8, *Transportation and Traffic*, impacts to the overall transportation network would be less than significant. Additionally, increased traffic and increases in FTES would not result in impacts to the local pedestrian, bicycle, and public transit network. Because no new construction would occur under this alternative, it would reduce construction traffic impacts, although it may not completely avoid them if construction traffic is created by construction work associated with renovation of existing structures. Regardless, under this alternative, these impacts, as with the 2016 FMP, would be less than significant . Although operational impacts to the off-site transportation network under this alternative would be similar to those of 2016 FMP, this alternative would not include construction of the new access points to the project site included in the 2016 FMP and,

therefore, would not allow for the increased accessibility and circulation to the project site that these improvements would provide.

This alternative would reduce impacts in some cases (such as construction traffic), but increase them in others (such as failing to construct the new access points to the project site); therefore, overall impacts to traffic and the local transportation network would be similar to those of the 2016 FMP.

i. Tribal Cultural Resources

Under this alternative, existing structures would be re-used and no ground disturbance would occur. This would eliminate the potential to uncover archaeological resources of tribal cultural significance. Accordingly, Mitigation Measure TCR-1, which is intended to reduce impacts associated with the unanticipated discovery of sensitive tribal cultural resources, would not be required. Overall, impacts under this alternative would be less than those of the 2016 FMP and the need for mitigation would be eliminated.

j. Utilities and Service Systems

Under this alternative, existing facilities would be reused. Expected increases in water, wastewater, stormwater, and solid waste consumption or generation would continue to occur under this alterative because AVC anticipates an increase in FTES, with or without implementation of the 2016 FMP. Overall impacts to utilities and service systems under this alternative would therefore be generally similar to those of the 2016 FMP. As with the 2016 FMP, impacts would be less than significant and mitigation would not be required.

6.3 Alternative 3: Preservation of Campus Core/Existing Paved Surface Development

6.3.1 Description

Similar to Alternative 2, this alternative is designed to limit the overall amount of unpaved ground disturbance required to implement activities accommodated by the 2016 FMP. This alternative would involve a shifted focus from constructing new facilities and buildings on unpaved portions of campus, toward focusing development on areas of campus that have been previously paved. This alternative would allow for the construction of new facilities and would maintain proposed renovations to existing buildings; but new facilities would be placed on existing parking lot areas. The placement of new structures in these areas would reduce the overall amount of unpaved ground disturbance during construction, and would still achieve the majority of project objectives. Examples of newly constructed buildings that could be placed in existing paved areas include SOAR High School, Community Center, University Center, Student Center and Student Services. The exact location of these relocated buildings has not been presented with this alternative due to specific design considerations that are outside the scope of this environmental analysis; however, applicable areas for relocation include the parking lots along the northern boundary of campus, and the large parking lot east of Marauder Stadium. Although Alternative 3 would allow for new construction and accommodate the projected increases in FTES, this alternative would reduce the amount of parking available on-site.

6.3.2 Impact Analysis

a. Aesthetics

Alternative 3 would focus on relocating new facilities to areas further outside of the campus core. The placement of facilities in closer proximity to the project site boundary would change the appearance of the existing campus and introduce additional sources of light and glare. The appearance and visual character of new facilities would be similar to the existing campus facilities; therefore, the new buildings would generally be compatible with the existing facilities and development on-site. All changes would continue to occur in the existing campus boundary, therefore view corridors and the overall visual character of the project site would not change substantially. This alternative, however, would lead to greater visual change in areas closer to the edges of the project site, where new buildings would be more visible from off the project site. Construction of these facilities would also be more visible from off the project site. Development under this alternative would result in additional sources of light and glare on campus pathways for general security and visibility, but these light sources would be similar to those analyzed in the proposed 2016 FMP, and impacts would remain less than significant. Overall aesthetic impacts would generally be similar to those of the 2016 FMP and no mitigation measures would be required.

b. Air Quality

Under Alternative 3, construction of the same new facilities as called for under the 2016 FMP would still occur, but in some cases in different locations on the same project site. Emissions from demolition of existing facilities may be reduced, however, because fewer existing facilities would need to be demolished in order to make room for new facilities. Therefore, emissions of criteria pollutants from construction activity would be less than those of the 2016 FMP. No mitigation measures would be required for construction, as emissions would not exceed AVAQMD thresholds. Operational air quality emissions from increased vehicle trips, stationary sources, energy use, and other buildings modifications would still occur, similar to the 2016 FMP, but emissions from operation of buildings could be increased if this alternative led to a greater total amount of built square footage on the project site. Sensitive receptors surrounding the project site would be exposed to similar operational and construction emissions, and similar to the 2016 FMP, no obstructions or conflicts to applicable air quality plans would occur since anticipated growth would be consistent with regional forecasts.

Since this Alternative would result in slightly reduced construction emissions (from reduced demolition), and slightly increased operational emissions (from an increase in total built square footage), overall impacts to air quality would be similar to those of the 2016 FMP and, as with the 2016 FMP, no mitigation measures would be required.

c. Biological Resources

Alternative 3 would avoid potential impacts to sensitive plants or animals. Construction impacts and potential impacts to sensitive plants or animals or nesting birds would be avoided because building new structures on existing paved areas would not result in construction impacts to trees and other habitats where potential nesting birds may be located. As shown in the Existing Plant Typologies and Tree Canopy Figures in the 2016 FMP, the majority of on-site trees are located in the campus core area. This alternative would preserve the campus core area, and avoid impacts to trees and other vegetated areas where potential species/nesting birds may occur. Under this Alternative, the construction of new facilities would occur on existing paved areas where sensitive biological

habitats do not occur due to a lack of habitat. Mitigation Measure BIO-1 would no longer be required. Impacts to existing trees and landscaped areas would be avoided, since construction and demolition activities would no longer occur in areas with potentially sensitive resources. Overall, impacts to biological resources would be reduced under this alternative, and the need for mitigation would be avoided.

d. Cultural Resources

Under Alternative 3, demolition and building construction would occur on areas that have been previously disturbed and paved, rather than areas that may have experienced less ground disturbance, such as lawn areas. The potential to uncover previously undiscovered archaeological or paleontological cultural resources would therefore be reduced under this alternative. However, even in these areas, the possibility of finding such resources cannot be completely ruled out. As such, mitigation measures CR-2(a) through CR-2(c) would still be required, and these impacts would remain less than significant with incorporated mitigation.

Although demolition of existing facilities would be reduced under Alternative 3 compared to the 2016 FMP, such demolition would not be completely eliminated. This alternative would therefore still have the potential to affect historic structures on the project site, and this impact would remain potentially significant. Therefore, mitigation measures CR-1(a) through CR-1(d) would still be required in order to assess on-site facilities for potential historic status, as well as implement potential documentation practices as compensatory mitigation. Overall impacts to cultural resources would be reduced under this alternative, but remain either significant with incorporated mitigation or, in the case of historic structures, significant and unavoidable with incorporated mitigation.

e. Greenhouse Gas Emissions

Under Alternative 3, construction of the same new facilities as called for under the 2016 FMP would still occur, but in some cases in different locations on the same project site. Therefore, GHG emissions from construction activity would be similar to those analyzed for the 2016 FMP. Operational emissions would be similar to those of the 2016 FMP, as buildings would be constructed, renovated, and upgraded to accommodate the anticipated increase in FTES. Therefore operational GHG emissions from energy and water use, as well as from vehicle trips, would be similar to those of the 2016 FMP. This alternative would not conflict with applicable GHG reduction plans, as emissions would not exceed applicable thresholds, and growth conflicting with regional forecasts or reduction targets would not occur. Overall, impacts under this Alternative would be similar to those of the 2016 FMP and no mitigation measures would be required.

f. Hazards and Hazardous Materials

Since Alternative 3 would involve construction of the same new facilities as called for under the 2016 FMP, operational impacts regarding the transport, use, and disposal of hazardous materials would be similar to those of the 2016 FMP. Alternative 3 would involve slightly less demolition of existing structures than the 2016 FMP. The potential for release of asbestos containing materials and lead based paint would therefore be slightly reduced compared to the 2016 FMP, but Mitigation Measure HAZ-1 would still be required.

Operation of campus activities under this alternative would be similar to those of the 2016 FMP; therefore, impacts regarding impairment of evacuation plans and potential releases of hazardous materials nearby to adjacent schools sites would both remain less than significant. Impacts

pertaining to development on contaminated sites would remain less than significant since this alternative would continue to be carried out on the project site, which, as explained in Impact HAZ-4, does not have any on-site or adjacent sites with identified hazardous materials or contamination issues. Overall impacts related to hazards and hazardous materials would be slightly reduced compared to those of the proposed 2016 FMP but mitigation would still be required.

g. Noise

Alternative 3 would result in construction-related noise similar to that of the 2016 FMP since construction of new facilities would still occur near sensitive receptors. The location of new facilities would be shifted toward the peripheries of the project site, which would result in increased exposure to construction noise and vibration impacts, since sensitive receptors are located directly across from the project site in all directions (see Section 4.7, *Noise*). Therefore, construction under this Alternative would potentially expose sensitive receptors to louder or more frequent construction noise levels than the 2016 FMP. Implementation of Mitigation Measure N-1 would be required to reduce construction related noise to less than significant levels.

Operational noise on-site would be similar to the proposed 2016 FMP, since the proposed uses and operational activities would remain similar. However, due to the location of facilities further towards the peripheries of the site, noise generating sources during operation (HVAC systems, conversations, etc.) would be closer to offsite sensitive receptors. The number of new vehicle trips and associated roadway noise would remain similar to the proposed 2016 FMP. Overall, since new facilities and operational noise-generating sources would be in closer proximity to sensitive receptors, noise impacts would be slightly greater than those of the 2016 FMP, Mitigation Measure N-1 would be still be required, and impacts would remain significant but mitigable.

h. Transportation and Traffic

This Alternative would result in new vehicle trips from the expected increase in FTES similar to what would occur under the 2016 FMP. As discussed in Section 4.8, *Transportation and Traffic*, impacts to the overall transportation network from these trips would be less than significant. Additionally, traffic and increases in FTES would not result in impacts to the local pedestrian, bicycle, and public transit network.

Under this alternative, site access would be maintained; however, physical development could result in changes to site access and parking. The placement of new structures on the peripheries of campus on existing parking lots would change on-campus circulation patterns, as well as result in a substantial reduction in available parking spaces. Alternative 3 could result in features that have the potential to increase hazards due to design features or incompatible uses, as new facilities would be constructed on existing vehicular accessed portions of campus (parking lots). Therefore, overall impacts to traffic and the local transportation network would be slightly greater than those of the 2016 FMP.

i. Tribal Cultural Resources

Alternative 3 would reduce the potential to uncover archaeological resources that may be of tribal cultural significance because demolition and building construction would occur on areas that have been previously disturbed and paved, rather than areas that may have experienced less ground disturbance, such as lawn areas. Accordingly, Mitigation Measure TCR-1, which is intended to reduce impacts associated with the unanticipated discovery of those resources, would still be

required. Potential impacts to tribal cultural resources would be less than those of the 2016 FMP, and, as with the 2016 FMP, would be less than significant with mitigation incorporated.

j. Utilities and Service Systems

While this alternative would change the location of new facilities to be constructed on the project site, increases in water, wastewater, stormwater, and solid waste consumption or generation would be similar to those expected under the 2016 FMP, since AVC anticipates an increase in FTES regardless of how, or whether or not, the 2016 FMP is implemented. Overall impacts to utilities and service systems under this alternative would therefore be generally similar to those of the 2016 FMP and, as with the 2016 FMP, would be less than significant without the need for mitigation.

6.4 Alternatives Considered But Rejected

Other alternatives considered include other scenarios that would reduce the amount of new development on campus, or limit the number of renovations/changing existing buildings use. However, these scenarios would still require general construction and ground disturbing activities that would result in several of the environmental impacts as discussed with the proposed 2016 FMP (ex. biological and cultural resources, noise, etc.) and would not accommodate the increased enrollment anticipated by AVC to the same capacity as the proposed 2016 FMP. Therefore, these scenarios were rejected from further consideration.

Relocating or proposing new facilities to a different campus/site was also considered as an alternative to the 2016 FMP. However, AVCCD does not own other land suitable for development of new campus buildings/features, and there are no presently available locations where existing buildings could be moved. Therefore, this option was not considered further.

6.5 Environmentally Superior Alternative

Based on the alternatives analysis provided above, Table 6-1 indicates whether each alternative's environmental impact is greater than, less than, or similar to that of the 2016 FMP for each of the issue areas studied. Alternative 1 (the No Project Alternative) would be the environmentally superior alternative, but does not meet the project objectives. Among the remaining alternatives, Alternative 2 (the Re-Use of Existing Facilities Alternative) would be the environmentally superior alternative because it reduces some impacts without increasing the severity of other impacts, and would achieve some of the project objectives. Alternative 3 (the Preservation of Campus Core/Existing Paved Surface Development Alternative) would reduce the severity of some impacts, but increase the severity of others, and would achieve the majority of the project objectives.

The discussions following Table 6-1 further compare the impacts of these alternatives to those of the 2016 FMP, and also further discuss their ability to fulfill the project objectives.

Table 6-1 Impact Comparison of Alternatives

Issue	Proposed Project Impact Classification	Alternative 1: No Project	Alternative 2: Re-Use of Existing Facilities	Alternative 3: Preservation of Campus Core/Existing Paved Surface Development
Aesthetics	Less than Significant	+	=	=
Air Quality	Less Than Significant	+	+	=
Biological Resources	Significant but Mitigable	+	+	+
Cultural Resources	Significant and Unavoidable	+	+	+
Greenhouse Gas Emissions	Less than Significant	+	+	=
Hazards and Hazardous Materials	Significant but Mitigable	+	=	+
Noise	Significant but Mitigable	+	+	-
Transportation and Traffic	Less than Significant	=	=	-
Tribal Cultural Resources	Significant but Mitigable	+	+	+
Utilities and Service Systems	Less than Significant	+	=	=

+ Impacts superior to the 2016 FMP (reduced level of impact)
- Impacts inferior to the 2016 FMP (increased level of impact)
= Similar level of impact to the 2016 FMP

Alternative 1 (No Project)

Under this alternative, since demolition and construction would not occur, potential environmental impacts associated with these activities would not occur. This includes impacts to special status plants and animals/nesting birds (Impact B-1); historic, archaeological, and paleontological resources (impacts CR-1, CR-2 and CR-3); potential exposure to releases of asbestos containing materials and lead based paint from demolition activities (Impact HAZ-1); exposure of sensitive receptors to significant construction noise (Impact N-1); and potential discovery of subsurface archaeological resources of tribal cultural significance (Impact TCR-1).

Since the No Project alternative would not result in any of the aforementioned impacts, the mitigation measures required to reduce those impacts would no longer be required. Since Alternative 1 would result in the fewest adverse environmental impacts, this alternative is the environmentally superior alternative. However, Alternative 1 would not fulfill all of the project objectives because maintaining existing conditions would not allow for increased efficiency and effective use of all campus resources, including facilities. This alternative would avoid the one significant and unavoidable impact of the 2016 FMP identified in this EIR, which is its potential to cause a substantial adverse change in the significance of potentially historic resources.

Alternative 2 (Re-Use of Existing Facilities)

As discussed in the 2016 FMP, a facilities condition index (FCI) score was determined to assess which buildings on campus needed renovations due their age and heavy use. This Alternative promotes the re-use of existing buildings, which would place further stress and pressure on a majority of these buildings, as proposed demolitions would not occur, and occupancy of several high-FCI numbered buildings would continue (such as the Fine Arts, Tech Building, Gymnasium, etc.). Although the re-use of these existing structures may have several disadvantages, such as continued energy inefficiency compared to new construction, and potentially safety risks due to outdated building design and construction, many of the environmental impacts discussed in this EIR would not occur.

Similar to Alternative 1, potential environmental impacts associated with construction and demolition activities under this alternative would be less than those of the 2016 FMP, since demolition and construction would not occur. This includes impacts to special status plants and animals/nesting birds (Impact BIO-1); archaeological and paleontological resources (impacts CR-2 and CR-3); exposure of sensitive receptors to significant construction noise (Impact N-1); and potential discovery of subsurface archaeological resources of tribal cultural significance (Impact TCR-1). This alternative would not, however, fully avoid impacts to historic resources (Impact CR-1) and potential exposure to releases of asbestos containing materials and lead based paint from demolition activities (Impact HAZ-1), since interior alterations of existing buildings for the purpose of adaptive reuse would occur. This alternative would therefore not avoid the 2016 FMP's one significant and unavoidable impact to potentially historic resources, and would require the same mitigation for Impact CR-1 and for Impact HAZ-1 as the 2016 FMP.

Due to the reduced environmental impacts of this alternative, Alternative 2 would be the most environmentally superior alternative other than the No Project Alternative (Alternative 1). Alternative 2 would not fulfill all project objectives, since re-use of existing buildings would not result in the same level of increased efficiency and effective use of all campus resources as implementation of the 2016 FMP.

Alternative 3 (Preservation of Campus Core/Existing Paved Surface Development)

While aesthetic impacts would remain less than significant without mitigation under this alternative, the relocation of buildings towards the periphery of the project site would change the overall campus layout, as the 2016 FMP intends to focus new development towards the center of campus where the majority of services are located. These changes would not compliment one of the project objectives, which is to increase efficiency and effective use of all resources on campus. Locating several significant facilities further from the center of campus would result in a significant change to the accessibility and circulation of campus, and result in reduced efficiency.

With respect to other environmental issues as analyzed in this section, Alternative 3 would result in reduced overall impacts compared to the 2016 FMP, since it would reduce demolition, construction, and ground-disturbing activities in the campus core. This includes impacts to special status plants and animals/nesting birds (Impact B-1); historic, archaeological, and paleontological resources (impacts CR-1, CR-2 and CR-3); potential exposure to releases of asbestos containing materials and lead based paint from demolition activities (Impact HAZ-1); exposure of sensitive receptors to significant construction noise (Impact N-1); and potential discovery of subsurface archaeological resources of tribal cultural significance (Impact TCR-1). Under this alternative, some demolition of existing facilities on the project site would occur, resulting in potential hazardous material impacts

related to potential releases of asbestos containing materials and lead based paint. This alternative would not, therefore, fully avoid impacts to historic resources (Impact CR-1) and potential exposure to releases of asbestos containing materials and lead based paint from demolition activities (Impact HAZ-1). This alternative would therefore not avoid the 2016 FMP's one significant and unavoidable impact to potentially historic resources, and would require the same mitigation for this impact and for Impact HAZ-1 as the 2016 FMP. Additionally, siting new facilities on the periphery of the project site closer to noise-sensitive receptors could result in increased noise impacts, although the same construction noise mitigation measures included in Section 4.7, Noise, of this EIR would reduce these potential impacts to a less than significant level in either case. Overall, this alternative would result in fewer environmental impacts than the 2016 FMP, but would not fulfill all of the project objectives, as this alternative could potentially result in reduced overall campus efficiency/use of resources.

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